To the Graduate Council:

I am submitting herewith a dissertation written by Danielle McCray Adams entitled "An Examination of Feedback Recipients' Reactions to Multisource Feedback." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Industrial and Organizational Psychology.

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We have read this dissertation
and recommend its acceptance:

Accepted for the Council:

Associate Vice Chancellor and
Dean of the Graduate School

AN EXAMINATION OF FEEDBACK RECIPIENTS' REACTIONS TO MULTISOURCE FEEDBACK

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee, Knoxville

Danielle McCray Adams

May, 1999

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DEDICATION

This dissertation is dedicated to my family. Together they have given me the support, confidence, and love to reach for my dreams; and each has taught me valuable lessons in their own way. Words can not express the love, gratitude, and respect I have for every one of them.

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It is difficult for me to name individually all of the people in my life who deserve recognition. I truly believe that everything that I have accomplished, and the person that I have become, has been influenced by many exceptional people that I have encountered along the way. For all of the happiness, support, and insight they have given me, I want to say thank you to these special people who I am lucky enough to call my friends and mentors.

ABSTRACT

Despite the growing popularity of multisource feedback programs, there has been limited research on employees' reactions to multisource feedback regarding their work performance. The current study examined how the characteristics of the performance ratings that were received were related to affective (satisfaction with the feedback process), cognitive (acceptance of feedback), and behavioral reactions (intentions to improve work performance) to multisource feedback. The study proposed that employees' affective and cognitive reactions to feedback would be motivated by self-enhancement biases, while behavioral reactions to feedback would be motivated by self-regulation processes.

The current study was conducted as part of a developmental multisource feedback program in a large southeastern utility company. Data collection occurred in two waves and included information from 401 feedback recipients (employees) and 2881 feedback givers (managers, direct reports, peers, and self-raters). In the first wave, feedback givers provided performance ratings for the target employees. In the second wave, after feedback recipients received their multisource feedback reports, they completed feedback reaction questionnaires.

The results indicated that multisource feedback ratings were unrelated to feedback recipients' satisfaction with the feedback process. Other ratings (managers, direct reports, and peers) and self-ratings were positively related to feedback recipients' acceptance of feedback. In addition, an interaction was obtained between self-ratings and manager ratings indicating that the degree of discrepancy between self-ratings and manager ratings was positively related to acceptance of performance feedback from managers.

Within-source rating agreement for direct reports and peers was positively related to acceptance of feedback. However, the prediction that the relationship between feedback acceptance and within-source rating agreement would be stronger for low performance ratings was not supported.

Results further revealed that ratings from managers and direct reports were not related to feedback recipients' intentions to improve work performance. However, a marginally significant negative relationship was revealed between peer ratings and intentions to improve work performance, meaning that employees who received lower ratings from their peers were more likely to say that they would improve their performance. Self-ratings and efficacy to improve work performance were both positively related to intentions to improve work performance. In other words, employees who gave themselves higher ratings, and employees who believed they could improve their performance, were more likely to indicate that they intended to improve their work performance. Additionally, an interaction between efficacy to improve work performance and self-ratings was obtained. The interaction revealed that when efficacy to improve work performance was high, the relationship between self-ratings and intentions to improve work performance was positive. However, when efficacy was low, the relationship between self-ratings and intentions to improve work performance was negative. Contrary to predictions, the degree of discrepancy between self-ratings and ratings from others was not related to behavioral reactions.

Limitations of the present study are presented. Practical and theoretical implications of the study's findings are discussed, and directions for future research are proposed.

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CHAPTER I

INTRODUCTION

The process of soliciting performance feedback about a target individual from multiple sources (supervisors, peers, direct reports, and self) (Dunnette, 1993; Mount, Judge, Scullen, Sytsma, & Hezlett, 1998; Tornow, 1993) has gained tremendous popularity in recent years. The number of organizations implementing multisource feedback (MSF) programs has increased dramatically (cf. Smither, London, Vasilopoulos, Reilly, Millsap, & Salvemini, 1995; Van Velsor & Wall, 1992) with recent reports suggesting that approximately 90% of *Fortune* 1000 firms currently utilize such programs (Atwater & Waldman, 1998). The primary reason cited for implementing MSF programs has been to facilitate professional and personal development among employees (London & Smither, 1995; Romano, 1994; Tornow, 1993), and is based on the assumption that positive behavior change will occur through the process of enhancing self-awareness of performance (Church & Bracken, 1997).

The rising popularity of multisource feedback programs has not been equally matched by research on their effectiveness. For example, the majority of existing research has focused on the psychometric properties of ratings. In general, MSF instruments have demonstrated good internal consistency and reliability (Hazucha, Hezlett, & Schneider, 1993), and ratings from multiple sources are believe to be more reliable and valid than feedback from a single rater (cf. Wohlers & London, 1989). Although this information is valuable, it does not answer the critical question of whether employees make efforts to improve their performance after receiving feedback from multiple sources (Reilly, Smither, & Vasilopoulos, 1996). The ultimate goal of most

MSF programs is performance improvement and as such, research that focuses on feedback recipients' reactions to MSF is critical. Regardless of a system's psychometric properties, the effectiveness of MSF programs will be greatly limited if feedback recipients do not use the feedback for performance improvement (Bernardin, Dahmus, & Redmond, 1993; Cardy & Dobbins, 1994; Carroll & Schneider, 1982).

Understanding and predicting recipients' responses to feedback has proved to be a complex task for researchers. Given the current popularity of MSF programs, however, a better understanding of feedback recipients' reactions is imperative. Drawing from several bodies of literature, the current study proposed that feedback recipients may exhibit multiple types of reactions to feedback, and that these reactions may be related to different factors. As such, researchers should examine multiple types of feedback reactions to more fully understand the process by which employees use, or do not use, feedback to make behavior modifications.

Currently there appears to be some controversy over the impact of MSF ratings on feedback recipients' reactions. Several researchers have proposed that there is a positive relationship between feedback favorableness and positive reactions (e.g., Facteau, Facteau, McGonigle, & Fredholm, 1997; Moreland & Sweeney, 1984; Sweeney & Wells, 1990). These researchers frequently point to self-enhancement biases to explain the finding that feedback recipients' typically exhibit positive reactions to high ratings and negative reactions to low ratings. Additionally, some researchers believe that the effectiveness of feedback programs is influenced by feedback recipients' acceptance of the feedback (Bernardin et al., 1993; Cardy & Dobbins, 1994; Carroll & Schneider, 1982). As such, some concern has been expressed that feedback interventions may not

have positive effects (e.g., performance improvement) on the employees in most need of performance improvement (i.e., employees with low performance ratings may not accept their feedback) (Facteau 1995; Kudisch, 1996). In contrast, other researchers utilizing self-regulation theories have demonstrated that employees who received low performance ratings (particularly ratings which were lower than the recipients' self-ratings) exhibited more positive reactions to the feedback (e.g., Atwater, Roush, & Fischthal, 1995; Hazucha et al., 1993; Reilly et al., 1996).

Drawing from several bodies of literature, the current study should contribute to the MSF literature by attempting to reconcile these two viewpoints. This study proposed that feedback recipients may exhibit multiple types of reactions to feedback, and that the relationship between ratings and reactions differs depending on the type of reaction being assessed. The research studies that have provided support for self-enhancement biases have typically focused on affective and cognitive reactions to the feedback. Whereas the studies demonstrating support for self-regulation theories have frequently investigated behavioral reactions to feedback. The current study examined how the characteristics of the MSF ratings received were related to affective (satisfaction with the MSF process), cognitive (acceptance of feedback), and behavioral reactions (intentions to improve work performance) to feedback. Specially, it was proposed that feedback recipients' affective and cognitive reactions would be motivated by self-enhancement biases and feedback recipients' behavioral reactions would be motivated by self-regulation processes. Figure 1 provides a heuristic of the hypothesized relationships in the current study.

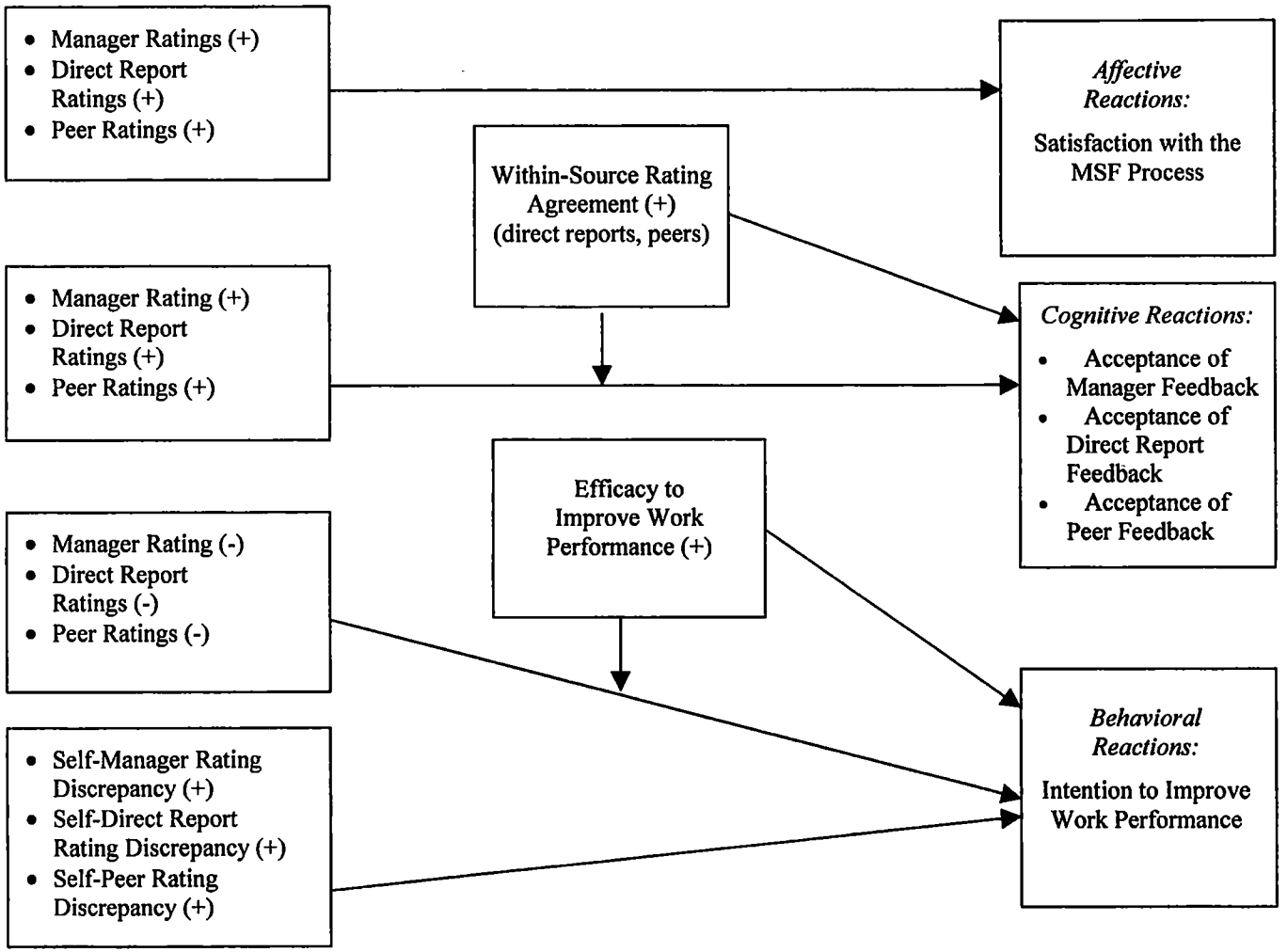


Figure 1. Heuristic of the Relationships among Study Variables

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

In recent years, the number of organizations implementing multisource feedback (MSF) programs has increased dramatically (cf. Smither, London, Vasilopoulos, Reilly, Millsap, & Salvemini, 1995; Van Velsor & Wall, 1992). In 1995, London and Smither estimated that between ten and fifteen percent of organizations were using some form of MSF and more recently Atwater and Waldman (1998) suggested that approximately 90% of *Fortune* 1000 firms utilize MSF systems. Furthermore, recent reports indicate that across organizations, hundreds of millions of dollars are spent annually to develop, implement, and support multisource feedback programs (Romano, 1994; Yammarino & Atwater, 1997). The increasing popularity of MSF may be partly due to the growing recognition of the complexity in assessing work related performance, as well as to the recognition of the value in soliciting multiple constituencies' perceptions of work behaviors to better guide an employee's development (London & Smither, 1995).

The approach of MSF involves soliciting feedback about a target individual from others who interact frequently with the target, have knowledge of the target's work performance, and whose opinion is valued by the target (Mount et al., 1998). Such systems most commonly include supervisors, peers, direct reports (when applicable), and self-ratings; however, in some situations customer and client feedback are also considered important (Dunnette, 1993; Tornow, 1993). Although authors use various terminology (e.g., MSF, full circle feedback, upward appraisal, peer appraisal) depending on the composite of rating sources, the term MSF will be used throughout this paper to

describe any system that relies on multiple raters. Additionally, the term "other ratings" will be used to describe ratings from MSF sources other than the self (e.g., managers, direct reports, and peers). The employees receiving the feedback will be referred to as "feedback recipients," and the employees solicited to provide feedback regarding work performance will be referred to as "feedback givers."

Benefits of MSF Programs

MSF programs allow for feedback from multiple sources who are likely to be in optimal situations to evaluate an individual's performance. For example, peers and direct reports often have more frequent opportunities to view relevant work behaviors than supervisors in a traditional evaluation situation (Buschang, 1992; Cederbloom & Lounsbury, 1980). In addition, MSF is particularly suited for measuring subjective components of job performance, such as leadership and interpersonal skills, which are common to many positions (London & Smither, 1995) and for which objective indicators are not readily available (Campbell, McCloy, Oppler, & Sager, 1993). The use of multiple independent raters increases observational opportunities and may result in more reliable and valid ratings (Cardy & Dobbins, 1994; Fedor & Bettenhausen, 1989; McEvoy & Buller, 1987). This is valuable given the important role of such skills for employees' professional development and organizational success (London & Smither, 1995).

MSF systems are believed to offer several benefits to traditional, top-down performance appraisal systems. Feedback from multiple sources can provide recipients with information from a variety of perspectives resulting in a more complete description of their performance (Lawler, 1967). This is due to the differing amount and type of

work contact the raters have with the ratee (Kingstrom & Mainstone, 1985). Managers, direct reports, peers, customers, and the target individual (self) are all likely to provide unique information in the assessment process. Not only do multiple perspectives provide additional information, but by averaging within each source, "non-traditional" sources are provided anonymity, which may result in more honest, candid, and beneficial ratings (Mount et al., 1998). Furthermore, this procedure can potentially "wash out" or minimize the effects of prejudicial biases and rating errors (Cederbloom & Lounsbury, 1980). Consequently, ratings provided by multiple sources are potentially more reliable and valid than ratings from a single individual (e.g., one supervisor) (cf. Wohlers & London, 1989).

The primary application of MSF has been to facilitate professional and personal development (London & Smither, 1995; Romano, 1994; Tornow, 1993). The programs are designed to provide feedback that can be used for performance enhancement and improvement. For example, recipients are typically given detailed information regarding specific behaviors in which they excel (e.g., strengths) and specific behaviors in which they lag (e.g., weaknesses). They are then encouraged to use this information to set goals and to develop plans for performance improvement. Such feedback plays a critical role in maintaining and enhancing work performance (Buschang, 1992).

In addition to providing information to individuals about their current performance, MSF systems render other organizational benefits (Fedor, 1991). For example, MSF systems encourage increased participation and communication among employees (feedback givers and feedback recipients). Research has shown that employees desire a participative role and an active voice in organizational activities

(Folger & Greenberg, 1985), particularly in activities regarding their own jobs (Hespe & Wall, 1976). Furthermore, workplace involvement has been linked to numerous positive outcomes such as increased job satisfaction, increased motivation, and decreased turnover (Steers & Mowdy, 1981; Steers & Porter, 1991; Tannenbaum, 1961). In addition, the MSF questionnaire itself can serve as a cueing instrument in that it clearly articulates behaviors that the organization values and expects from its employees (e.g., leadership, respect for others, flexibility) (Reilly et al., 1996). Locke and Latham (1990) suggest that the "cueing effect" is so salient, that simply introducing a feedback system sends a message regarding the behaviors an organization values (i.e., the behaviors being assessed). As such, MSF has been utilized as a tool to facilitate organizational change by highlighting behaviors expected of employees (Kaplan, 1993; Tornow, 1993).

Although MSF has typically been used as a development tool for managers (Church & Bracken, 1997), it has grown in popularity and some organizations have expanded its use to include non-managerial employees as feedback recipients. Furthermore, some organizations are beginning to administer MSF systems to make decisions regarding promotions, succession planning, and compensation (Borman, 1997; London & Smither, 1995; Yammarino & Atwater, 1997).

Multisource Feedback (MSF): Review of the Literature

Although the rising popularity of multisource feedback programs has not been equally matched by research regarding their effectiveness, recent years have demonstrated an upswing in interest by researchers. Perhaps this can be attributed to frequent calls for research by authors such as London and Smither (1995) who state that "practice (on MSF) is well ahead of theory and empirical research" (p. 807), or to the

acknowledgment that many practitioners are being forced to rely on "personal experience and/or trial by error approaches" (Church & Bracken, 1997, p. 151) to implement MSF programs.

In the last decade, there have been two special journal issues devoted to the topic of MSF (cf. Human Resource Management, 32, 1993 and Group and Organization Management, 22, 1997), as well as numerous independent journal articles. While there are some excellent published studies, due to the complexity of studying MSF much of the research is anecdotal, based on laboratory designs, or has limited sample sizes (Church & Bracken, 1997; McEvoy & Buller, 1987). Consequently, the results of some of these studies may have questionable relevance to actual organizational life and may have limited power to test hypotheses (Church & Bracken, 1997). Clearly, this is a topic in need of further research.

The majority of research on MSF has examined psychometric properties of different rating sources (e.g., managers, direct reports, peers), typically focusing on areas such as rating halo (Cooper, 1981; Lance & Woehr, 1986; Murphy & Anhalt, 1992) and rater agreement (Borman, 1997; Greguras & Robie, 1998; Maurer, Raju, & Collins, 1998; Yammarino & Atwater, 1993). Such research has revealed that ratings from peers and managers are generally in greater agreement than either is with self-ratings. Based on their meta-analytic study, Harris and Schaubroeck (1988) reported corrected correlations of .62 between managers and peers, .35 between managers and self, and .36 between peers and self. Additionally, several studies have reported that subordinate ratings are also correlated more highly with other ratings than with self-ratings (e.g., Atwater & Yammarino, 1992; McEvoy & Beatty, 1989; Mount, 1984; Mount et al., 1998).

A recent study by Maurer et al. (1998) provided further evidence to support the sound psychometric properties of ratings made in a MSF context. In this study, ratings from peers and subordinates were found to have measurement equivalence, "indicating the calibration of the observed rating scale relative to the underlying perceived skill factor did not differ significantly between peer and subordinate rating groups" (p. 699). That is, the results suggested that peers and direct report raters employed the same psychological measurement scale when making the MSF ratings. Although more research is warranted, these findings are encouraging in that most MSF systems make direct comparisons between the different rating sources. If peers and direct reports employ different psychological measurement scales when making ratings, then comparisons between them would be problematic. However based on these preliminary findings, it appears that such comparisons are appropriate.

Research regarding multisource ratings has lead to the conclusion that MSF instruments generally have good internal consistency and reliability (Hazucha et al., 1993), and that ratings from multiple sources are often more reliable and valid than feedback from a single rater (cf. Wohlers & London, 1989). Such favorable psychometric qualities are partly attributed to frequent work-related interactions between the raters and feedback recipient, and to the increased number of independent judges (Buschang, 1992).

Although it is commonly acknowledged that valid feedback is a necessity for appropriate behavior change to occur (Borman, 1997), research on the psychometric properties of MSF does not answer the critical question of whether employees make efforts to improve their performance after receiving feedback (Reilly et al., 1996). The

ultimate goal of most MSF programs is performance improvement. Some researchers believe that regardless of a system's psychometric properties, the effectiveness of MSF programs will be greatly limited if feedback recipients do not accept the feedback (Bernardin et al., 1993; Cardy & Dobbins, 1994; Carroll & Schneider, 1982). Given that the foundation of most management development and leadership programs is the link between self-awareness and performance (Tornow, 1993), the paucity of research focusing on MSF effectiveness and user reactions is surprising.

Unfortunately, due to the lack of research in this area, there are few agreed upon guidelines to help practitioners implement MSF programs. Furthermore, relatively few practitioners conduct thorough evaluations of their system's effectiveness. This is in part due to the large costs (e.g., time, dollars) associated with such endeavors. However, it may largely be a result of the commonly held belief that any feedback intervention will result in positive outcomes for the feedback recipients and the organization. For example, a key assumption underlying MSF systems is that employees will benefit (e.g., improve work performance) from self-awareness (Church & Bracken, 1997; London, Smither, & Adsit, 1997). Indeed, this belief is so pervasive that Pritchard, Jones, Roth, Stuebing, and Ekeberg (1988) made the following statement: "The positive effect of feedback interventions on performance has become one of the most accepted principles in psychology" (p. 338).

Kluger and DeNisi (1996) have recently called into question the assumption that simply providing feedback will automatically result in behavior improvement. They report that this assumption has caused many researchers to discount, ignore, or search for post hoc explanations of empirical findings which do not link feedback interventions and

behavior improvement. In a large meta-analytic study, they provided evidence to demonstrate that feedback interventions do not always result in the desired outcomes. Surprisingly, their study revealed that although feedback interventions improved performance on average, over one-third of the feedback interventions actually resulted in decreased performance. Kluger and DeNisi advised practitioners and researchers to be aware that the implementation of feedback intervention programs may not lead to the desired outcomes. Indeed, "feedback interventions have highly variable effects on performance, such that in some conditions feedback interventions improve performance, in other conditions feedback interventions have no apparent effects on performance, and yet in others feedback interventions debilitate performance" (Kluger & DeNisi, 1996, p. 254). Given that most organizations' major objective in implementing MSF systems is to encourage employee development and performance improvement (Romano, 1994; Tornow, 1993), Kluger and DeNisi's findings are disturbing, and the need for greater understanding regarding employees' reactions to MSF becomes increasingly salient.

The study of recipients' reactions to feedback has proven to be an exceptionally complex domain. Although, it is appropriate to draw somewhat from the traditional performance appraisal literature, MSF differs markedly from PA applications in several ways. By the nature of MSF systems, feedback recipients are provided with considerably more information to integrate than is provided during traditional supervisory-only performance evaluations (Fedor, 1991). Additionally, MSF feedback is often more complex, possibly consisting of conflicting viewpoints on aspects of job performance (London & Smither, 1995). Furthermore, because MSF is typically used for development rather than administrative decision-making, raters and ratees in MSF systems are likely to

behave differently than raters and ratees in PA systems (Mount et al., 1998). For example, organizations may not hold individuals accountable for feedback in developmental assessments (Facteau, Facteau, Curtis, Russell, & Poteet, 1998). In fact, in many MSF systems, the feedback is confidential and provided only to the recipient. Therefore, the decision to respond (or not) is left completely up to each recipient's discretion (London et al., 1997). When learning and development are voluntary, understanding the drivers of feedback recipients' motivation and interest in behavior improvement becomes critical (Maurer & Tarulli, 1994). Consequently, a key challenge in MSF research is to identify the factors that influence recipients' reactions to feedback (Facteau et al., 1997; Fedor, 1991).

Reactions to Feedback

Probably the most notable attempt to understand recipients' reactions to feedback was proposed by Ilgen, Fisher, and Taylor (1979). This seminal article reviewed the feedback literature and suggested a process model for understanding feedback recipients' responses to feedback. The model included the following sequential steps as leading to behavioral responses to feedback: perception of feedback, acceptance of feedback, desire to respond to feedback, and the intended response to feedback. Figure 2 displays the major components of the feedback model.

According to Ilgen et al.'s (1979) model, feedback recipients' cognitive evaluation of the feedback is an important determinant of the antecedent steps. More specifically, the extent to which a person believes the feedback is an accurate representation of his or her performance (i.e., feedback acceptance) directly influences an individual's desire to respond to the feedback, intentions to respond, and ultimately his or her actual response

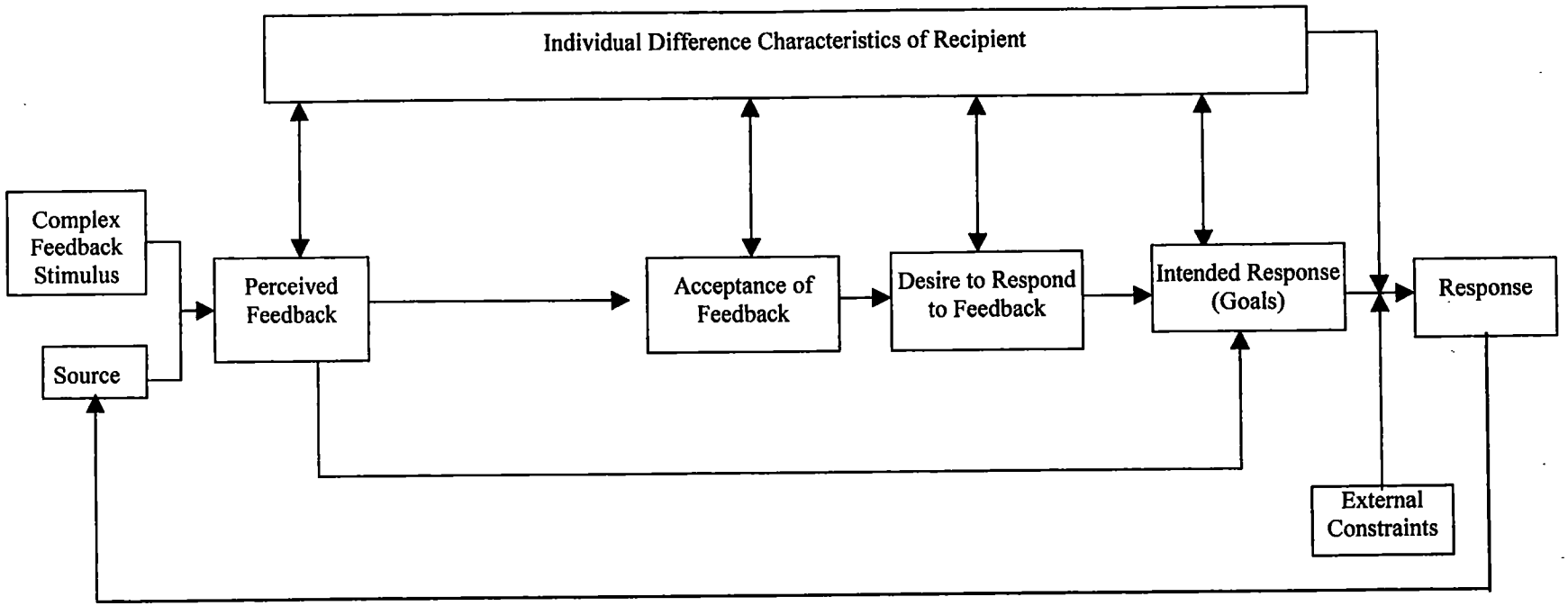


Figure 2. Ilgen, Fisher, and Taylor's (1979) Feedback Process Model

(Ilgen et al.). Consequently, in an effort to explore the relationship between MSF and performance improvement, much of the current feedback research has examined individuals' acceptance of MSF feedback.

In a related field of research, social psychologists have sought to understand and examine the underlying motivational components that influence recipients' reactions to feedback. For instance, Shrauger (1975) proposed that individuals might exhibit more than one type of reaction to feedback. More specifically, Shrauger posited that feedback recipients exhibit affective and cognitive reactions to feedback, each of which are driven by different motivations. He argued that affective reactions (e.g., satisfaction, mood) are best predicted by favorableness of the ratings received, demonstrating a self-enhancement bias. Self-enhancement theory predicts that people prefer to be seen in a positive light rather than in a negative light (Shrauger, 1975; Swann, Griffin, Predmore, & Gaines, 1987). That is, the favorableness of the feedback drives recipients' reactions. Individuals who receive positive feedback are more satisfied (e.g., general mood, satisfaction with the feedback, satisfaction with the process), while those who receive negative feedback are less satisfied.

Additionally, Shrauger suggested that cognitive reactions are best predicted by self-other rating congruence, which supports self-consistency theory (Korman, 1970, 1976). According to self-consistency theory, individuals are more accepting of information that matches their self-views and are likely to deny or reject information that differs from their self-view (cf. Jussim, Yen, Aiello, 1995; Korman, 1970, 1976; Sedikides, 1993). Based on this premise, feedback recipients' cognitive reactions will be

influenced more by the congruence between the feedback they receive and their self-view of performance, than by the favorableness of the feedback. For example, a person with low self-expectations will be more accepting of negative feedback than positive feedback, since this evaluation is more congruent with his/her self-image.

When testing Shrauger's (1975) propositions, Moreland and Sweeney (1984) found evidence of self-enhancement bias in predicting affective and cognitive reactions to feedback. "Students sought out or accepted positive evaluations of their feedback and avoided or rejected negative performance evaluations" (p. 170) regardless of their self-expectations, demonstrating a self-enhancement bias rather than self-consistency bias in cognitive reactions. Sweeney and Wells (1990) also reported results that supported self-enhancement bias in both affective and cognitive reactions. In their study of reactions to exam performance, they found that regardless of the feedback recipients' self-esteem, they were more satisfied with and more accepting of positive feedback than negative feedback. However, in addition to self-enhancement effects, evidence of some self-consistency effects were also revealed for cognitive reactions. Sweeney and Wells found that individuals with high self-esteem were less accepting of negative feedback than were individuals with low self-esteem. Although, in general the feedback recipients were more accepting of positive feedback, consistency between feedback and self-esteem appeared to influence the magnitude of the self-enhancement bias. However, the consistency theory's prediction that feedback recipients with low self-esteem would not be accepting of high ratings was not supported.

In an attempt to explain why the findings of Sweeney and Wells (1990) and Moreland and Sweeney (1984) differed from Shrauger's (1975) predictions, Facteau and

colleagues (1997) suggested that task significance might play a role. Shrauger's predictions may hold true for less meaningful tasks (e.g., anagrams) (cf. Jussim et al., 1995), however tasks of high significance to participants (e.g., exams, performance ratings) are likely to follow the pattern of results described by Sweeney and colleagues.

Facteau and colleagues (1997) tested Sweeney and Wells (1990) predictions regarding cognitive reactions to feedback within the context of a developmental MSF system composed of ratings from direct reports and peers. Their results were similar to Sweeney and Wells in that acceptance of feedback conformed to self-enhancement theory. The more positive the ratings, the more likely the recipients were to accept the feedback as an accurate portrayal of their performance. However, Facteau et al. did not find evidence of self-consistency bias playing a secondary role in the prediction of feedback acceptance. The congruence between self-ratings and other ratings was unrelated to feedback acceptance. In summary, according to MSF and feedback evaluation research, it appears that the favorableness of feedback received from others has a great deal of influence in predicting affective and cognitive reactions to feedback.

The Link between Reactions and Performance Improvement

Although understanding recipients' affective and cognitive reactions to feedback is valuable, the question of whether employees actually use the information to make behavior improvements is still unanswered. This question is especially salient given that the majority of organizations implement MSF with the objective of employee development and performance improvement. Consequently, MSF should examine not only individuals' affective and cognitive reactions, but also the relationship between feedback and efforts for performance improvement.

According to Ilgen et al. 's (1979) sequential feedback model, feedback acceptance is a precursor to behavioral intentions and ultimately behavioral responses. Ilgen et al. viewed the feedback process as a special case of communication in which the sender provides information to the receiver. Emphasis was placed on the influence of feedback acceptance on the subsequent steps leading to behavioral responses. This model, combined with the research reviewed above, implies that self-enhancement bias should also play the primary role in determining behavioral intentions and action for performance improvement. Specifically, there should be a positive relationship between feedback favorableness and behavioral responses. This would suggest that individuals who receive negative feedback ratings from others are less likely to accept the ratings as an accurate portrayal of their performance, and therefore are less likely to engage in behavioral change as a result of the feedback. Consequently, those individuals who may be in most need of performance improvement (e.g., those who receive low ratings) may be less likely to make positive behavior changes as a result of the feedback (Facteau, 1995; Kudisch, 1996).

When reviewing literature specifically looking at behavioral responses to feedback, empirical research has revealed findings that are opposite of the suggestion that individuals who receive low ratings will be less likely to make positive behavior change. Hazucha et al. (1993) reported that the favorableness of the feedback had a negative, rather than positive, relationship with engagement in developmental activities (behavioral reactions). In their study, managers who received negative feedback reported putting more effort into performance improvement than those who received positive feedback did. Additionally, Reilly and colleagues' (1996) study of managers' reactions to MSF

revealed that managers who received lower ratings demonstrated greater behavior improvements than managers who had received higher ratings. Furthermore, the behavior improvements were still present after two years. Reilly and colleagues presented statistical evidence that the improvements could not be explained solely by regression to the mean. From the review of research focusing on behavioral reactions, self-enhancement bias does not appear to drive behavioral reactions. In fact, evidence opposite of the predictions of self-enhancement bias has often been presented (e.g., individuals who received low ratings engaged in more behavior improvement activities and ultimately improved performance more than individuals who received high ratings).

Perhaps a basic premise of Ilgen and colleagues' (1979) highly cited feedback model has led to this apparent inconsistency. The sequential steps of the model posit that the extent to which a person accepts the feedback as an accurate representation of his or her performance greatly influences his/her desire to respond to the feedback. Since the model is widely utilized in the feedback literature (Fedor, 1991), much of the research has been conducted operating under the assumption that performance improvement is contingent on the extent to which participants accept the feedback as an accurate reflection of their performance (Kudisch, 1996; Thornton, 1992). However, evidence from the performance improvement literature does not support such an inference.

Performance improvement may depend on the extent to which individuals use the MSF to monitor their progress toward goals/standards (London et al., 1997), rather than their acceptance of, or satisfaction with, the feedback. Thus, behavioral reactions (e.g., engagement in developmental activities) likely play a prominent role in influencing positive behavior change, regardless of affective (e.g., satisfaction) or cognitive (e.g.,

acceptance of feedback) reactions to feedback. Furthermore, it has been suggested that on important tasks, feedback recipients' reactions to performance feedback may reflect multiple motivations (Moreland & Sweeney, 1984; Sweeney & Wells, 1990) which may result in mixed, even seemingly contradictory reactions from the recipient (Balcazar, Hopkins, & Suarez, 1986). Specifically, affective and cognitive reactions may differ from behavioral reactions, and positive affective and cognitive reactions may not be necessary for performance improvement (London et al., 1997). For example, an individual may be dissatisfied with, and not accepting of, negative performance feedback received; yet he or she may take steps to improve his/her performance based on the negative feedback. Or in contrast, an individual may be satisfied by the feedback and accept it as accurate, but not be motivated to use the feedback to make positive behavior changes. Thus, such individuals would be exhibiting seemingly contradictory reactions to the feedback.

Purpose of the Current Study

The current study attempted to reconcile the contradictory findings regarding the relationship between MSF ratings and feedback recipients' reactions to the feedback. The study proposed that feedback recipients may exhibit multiple types of reactions to feedback, and that the relationship between ratings and reactions differs depending on the type of reaction being assessed. It was proposed that feedback recipients' affective and cognitive reactions to feedback would be influenced by self-enhancement biases, and feedback recipients' behavioral reactions would be motivated by self-regulation processes.

The current study examined the relationship between MSF ratings and affective, cognitive, and behavioral reactions to feedback. Affective reactions were operationalized as satisfaction with the MSF process, cognitive reactions were operationalized as feedback acceptance and were measured for each source (i.e., managers, direct reports, peers). Behavioral reactions were operationalized as intentions to improve work performance.

Intention has been demonstrated as a reliable predictor of subsequent volitional behavior (Ajzen, 1991; Ajzen & Fishbein, 1980; Ajzen, Timko, & White, 1982; Fishbein & Ajzen, 1975; Ilgen et al., 1979; Mobley, Griffeth, Hand, & Meglino, 1979) and has frequently been used in feedback research as a surrogate for actual behavior (Fedor & Bettenhausen, 1989). For example, individuals who report greater intentions are expected to work harder and make more efforts to obtain goals than individuals with fewer intentions. Additionally, specific rather than general behavioral intentions (e.g., "I intend to ask my feedback givers for specific examples of how I can improve" vs. "I intend to try harder") are believed to be more predictive of future behavior (Ajzen, 1991; Ajzen & Fishbein, 1980).

Affective and Cognitive Reactions to MSF

Although self-enhancement theory was already briefly summarized in this paper, a few additional comments are in order. In general, it is believed that the underlying motivation for a self-enhancing preference stems from the combined desire to be viewed favorably by others and the desire to maintain a positive self-image (cf. Greenwald, 1980; Tesser & Parlhus, 1983). Feedback favorableness has been shown to influence affective and cognitive reactions including mood, feedback satisfaction, program satisfaction,

feedback acceptance, and perceptions of fairness, accuracy, and credibility. Evidence to support self-enhancement bias has been demonstrated in traditional performance appraisal literature as well as in studies specifically focusing on MSF and assessment center feedback.

In a review of the feedback literature, Shrauger (1975) suggested that as performance feedback becomes more favorable, feelings of satisfaction increase. Baumgardner, Kaufman, and Levy (1989) and Pearce and Porter (1986) reported that individuals who received poor performance feedback were more likely to express dissatisfaction with the entire feedback system than were individuals who received feedback that was more favorable. In addition to satisfaction, feedback favorableness has also been demonstrated to influence acceptance of feedback. It has been shown that individuals are more accepting of feedback that is favorable than of feedback that is unfavorable (Facteau et al., 1997; Facteau et al., 1998; Maurer, Palmer, & Tarulli, 1996).

Several researchers have found similar results when examining participants' reactions to assessment center feedback. For example, Kudisch (1996) examined employees' acceptance of developmental assessment feedback. He reported a significant positive relationship between feedback favorableness and acceptance of the feedback as an accurate representation of performance. Similarly, Mitchell and Maurer (1998) in their study of assessment center feedback reported that individuals who received positive ratings were more likely to believe that their ratings were accurate.

Given that performance evaluations can generate anxiety, defensiveness, and uncertainty among feedback recipients (Carroll & Schneider, 1977), they create an ideal situation for impression management (Fandt & Ferris, 1990). As such, individuals faced

with threatening feedback may look for opportunities to discount or deny negative feedback (Fedor, 1991). Alternatively, when positive feedback occurs, individuals may take credit for the performance with the hope of gaining others' esteem (Eder & Fedor, 1989). Although impression management has not been traditionally recognized as an important element in the feedback process (Ashford & Tsui, 1991; Eder & Fedor, 1989) it may play a role in understanding why affective and cognitive reactions are influenced by self-enhancement biases.

Given this literature, the present study hypothesized that individuals who received positive feedback would express greater satisfaction with the MSF program, and greater acceptance of the feedback, than individuals who received less positive feedback.

> Hypothesis 1a: Manager ratings will be positively related to feedback recipients' satisfaction with the MSF process.
>
> Hypothesis 1b: Direct report ratings will be positively related to feedback recipients' satisfaction with the MSF process.
>
> Hypothesis 1c: Peer ratings will be positively related to feedback recipients' satisfaction with the MSF process.
>
> Hypothesis 2a: Manager ratings will be positively related to feedback recipients' acceptance of manager feedback.
>
> Hypothesis 2b: Direct report ratings will be positively related to feedback recipients' acceptance of direct report feedback.
>
> Hypothesis 2c: Peer ratings will be positively related to feedback recipients' acceptance of peer feedback.

Within-Source Rating Agreement

In addition to the favorableness of MSF ratings, several researchers have suggested that the consistency of the feedback message may influence feedback recipients' acceptance of the feedback (Facteau et al., 1997; Ilgen et al., 1979; London &

Smither, 1995). Ilgen et al. defined consistency as "the extent to which all or most of the feedback received from a source tends to be either positive or negative" (p. 358). They suggested that when feedback is perceived as consistent, feedback recipients are more inclined to feel in control of their performance. However, when faced with inconsistent feedback, feedback recipients may feel less in control of their performance and thus attribute the performance to factors outside of himself or herself (cf. attribution theory; Kelley, 1973). More recently, London and Smither discussed the influence of rating consistency effects on the acceptance of MSF. In their research propositions, they suggested that when within-source rating agreement is low, the feedback recipient may perceive the feedback as less credible. Furthermore, this effect may be most salient for negative feedback. In particular, if within-source rating agreement is low, poor feedback can be challenged as a result of individual raters' idiosyncrasies rather than the feedback recipients' performance. However, when there is a great deal of consistency among raters, the recipients' perception of the message credibility may increase, hindering their ability to discount or ignore the negative information (Facteau et al., 1997; London & Smither, 1995). For example, "if seven co-workers reported that a person does not treat others with respect, it is difficult to avoid taking their perceptions to heart" (Hazucha et al., 1993, p. 327).

In their study of reactions to peer and direct report feedback, Facteau et al. (1997) examined the relationship between within-source rating agreement and feedback acceptance. They defined within-source rating agreement as the level of consensus among individuals from a particular source in their ratings of a target individual. Their study revealed an interaction effect in which the level of agreement among direct report

ratings influenced the relationship between recipient's ratings and feedback acceptance. The interaction demonstrated that acceptance of negative feedback increased as the agreement among direct reports providing the negative feedback increased. Interestingly, Facteau et al. did not find a similar interaction for peer rating agreement, nor did they find a significant main effect between within-source rating agreement and acceptance for either direct report or peer feedback.

Although the relationship between feedback acceptance and within-source rating agreement had been previously proposed by London and Smither (1995), little empirical research has been conducted to test the relationship. The current study will examine the predictions of Facteau et al (1997) to further explore the relationship between feedback consistency and acceptance of feedback.

> Hypothesis 3a: Direct report rating agreement will be positively related to feedback recipients' acceptance of direct report feedback.
>
> Hypothesis 3b: There will be an interaction between direct report ratings and direct report rating agreement such that the relationship between direct report rating agreement and acceptance of direct report feedback will be more positive for feedback recipients receiving lower ratings.
>
> Hypothesis 4a: Peer rating agreement will be positively related to feedback recipients' acceptance of peer feedback.
>
> Hypothesis 4b: There will be an interaction between peer ratings and peer rating agreement such that the relationship between peer rating agreement and acceptance of peer feedback will be more positive for feedback recipients receiving lower ratings.

Behavioral Reactions to MSF

Behavioral reactions to feedback appear to be influenced by different motivations than affective and cognitive reactions. Although it is predicted that affective and cognitive reactions are motivated simply by the favorableness of feedback, several

motivational theories (e.g., control theory, goal setting, consistency theory) suggest that the primary influence in behavior regulation is the evaluation of, and reaction to, a feedback-standard comparison (Kluger & DeNisi, 1996). Thus, behavioral reactions may not be influenced simply by the favorableness of the feedback, but by comparison of the feedback to a standard.

The feedback-standard comparison mechanism is found in both control theory (Carver & Scheier, 1982; Lord & Hanges, 1987) and goal setting theory (Latham & Locke, 1991). Although these two theories have key differences (cf. Kanfer, 1990), they share the assumption that feedback-standard comparison influences subsequent behavior. According to control theory, feedback regarding the performance of a system (e.g., individual's work performance) is used to control future behavior of the system (cf. Carver & Scheier, 1982). Individuals go through a continual process of feedback-standard comparisons. When feedback indicates that performance is below the standard (i.e., negative feedback discrepancy), it creates discomfort and the feedback recipient is motivated to alleviate the discomfort by reducing the discrepancy (Taylor, Fisher, & Ilgen, 1984). If individuals perceive that their performance exceeds the standard (i.e., positive feedback discrepancy), they may by motivated to maintain or even slightly reduce current efforts and strive for homeostasis (Carver & Scheier, 1982).

Within the realm of goal setting, the degree of discrepancy provides the recipient with a benchmark of progress toward the standard. The size of the feedback-standard discrepancy affects ensuing effort and changes in goal setting. A negative discrepancy is likely to result in increased effort aimed at reaching the standard. However, the role of positive discrepancy is less clear. When faced with a positive discrepancy an individual

may maintain or slightly reduce efforts in order to meet the current standard, or the individual may be motivated by his or her current success (in exceeding the standard) to set a higher goal or standard (Kluger & DeNisi, 1996). Although the predictions regarding positive discrepancies are not as well documented, it is likely that the motivation created by a positive discrepancy is not as strong as the motivation aroused by a negative discrepancy because negative discrepancies indicate that the feedback recipient's performance is deficient.

Although there are points of divergence between control theory and goal setting, both indicate that feedback and standards together play a critical role in determining behavioral reactions to feedback. Both control theory and goal setting theory acknowledge that the feedback recipient may choose from several types of behavioral responses. According to control theory, behavioral options include changing the behavior, changing the standard to match the feedback, rejecting the feedback, and escaping the situation (Carver & Scheier, 1982). According to goal setting theory, behavioral options include striving to attain the goal, changing the goal, rejecting the feedback, and abandoning commitment to the goal (Latham & Locke, 1991). The multitude of behavioral options poses a theoretical challenge in predicting feedback recipients' choice of activity. However, according to Kluger and DeNisi (1996), feedback recipients typically attempt to eliminate the feedback-standard discrepancy by striving to obtain the standard, particularly regarding areas of performance that they value or see as critical. Work performance is likely to be seen as critical because of its links to work place rewards such as pay, promotion, and prestige among coworkers.

An additional complexity in understanding the feedback-standard comparison process lies in identifying the standard an individual uses for comparison (Kluger & DeNisi, 1996). Within the realm of MSF, several researchers have suggested that the standard used for comparison purposes can be found in the MSF instrument (Reilly et al., 1996; Smither, Wohler, & London, 1995). Most MSF instruments contain multiple specific prescriptive behavioral items which are rated on a scale with points to identify low performance (e.g., not at all effective), moderate performance (e.g., effective) and exceptional performance (e.g., extremely effective). Specific behavioral items clearly identify the behaviors that the organization values and expects from it's employees (Locke & Latham, 1990; Reilly et al., 1996). Thus, given the link between work performance and valued rewards (e.g., pay, promotion, esteem), individuals are likely to view these prescriptive items as standards to achieve.

According to the above arguments, feedback recipients are likely to compare feedback from others to the standard of high performance on the MSF items. If they receive low ratings, a discrepancy is identified between the standard and the feedback, thus motivating the individual to engage in behaviors to improve their performance. If high ratings are received, then a discrepancy is not present. The individual may perceive this to mean that no weaknesses have been identified and that little performance improvement is necessary (Campion & Lord, 1982).

In addition , Kluger and DeNisi (1996) suggest that people use feedback from others to evaluate their performance relative to their own self-evaluations. Due to the high credibility given to oneself, self-evaluations may serve as an internal standard by which feedback from others is judged (Ilgen & Hamstra, 1972). Thus, the discrepancy

between self-ratings and other ratings may also play a role in predicting behavioral responses to performance feedback.

Theoretical support for the role of self-other rating comparison can be found in consistency theory (Korman, 1970, 1976). The theory predicts that individuals desire to be seen in a consistent manner and that the degree of self-other rating discrepancy motivates reactions. Because individuals desire consistency, feedback that does not match self views may signal the need for action (cf. Jussim et al., 1995; Sedikides, 1993). The theory suggests that when individuals receive ratings below or above their self-ratings, they are likely to take action to reduce the discrepancy.

The prediction that individuals who receive ratings below their self-ratings are likely to make efforts to improve their performance is not surprising (Reilly et al., 1996). Regardless of whether feedback recipients believe others' ratings to be accurate, they may attempt to improve their standing in the eyes of others. However, if self-ratings are below others' ratings, consistency theory proposes that individuals will either make efforts to reduce their performance in order to lower the ratings they receive from others, or they will make attempts to improve their performance so as to warrant the higher ratings given by others. The prediction that individuals would deliberately lower their performance to reduce the self-other rating discrepancy seems counterintuitive given the links between performance and workplace rewards, and has not been supported in the literature. Instead, it seems more likely that if others' ratings are higher than self-ratings, individuals may be motivated to improve their performance to warrant the high ratings given by others, or they may perceive that no improvement is necessary and simply maintain current levels of performance. Furthermore, recipients' self views may increase

as a result of receiving ratings more positive than expected (Ashford, 1989). Additionally, consistency theory predicts that those least likely to take action are individuals who receive ratings consistent with their self-evaluation (either high or low) (cf. Korman, 1970, 1976).

The current study proposed that feedback recipients may compare their feedback to both the standard of high performance on the rating scale (i.e., organizational expectations) and to their self-ratings. Thus, a negative main effect for others' ratings, and an interaction between the self-ratings and others' ratings are predicted to be significantly related to behavioral reactions.

Several researchers have empirically supported parts of these propositions. For example, Hazucha et al. (1993) found that individuals who received low ratings from others were more likely to report greater intentions to improve their performance than were individuals who had received high ratings from others. Additionally, individuals who received low ratings also demonstrated greater performance improvement after a two year time delay. However, a large amount of participant attrition during the two-year time delay, and the lack of a control group, warrant interpreting the performance improvement effect with caution. Atwater and colleagues (1995) also found evidence of a negative relationship between feedback favorableness and performance improvement in their study of student military leaders. Their results demonstrated that individuals who received less favorable ratings from others reported putting more effort into development and demonstrated greater performance improvement over an eight month time period. Additionally, individuals who received ratings that were lower than their self-ratings demonstrated the most improvement, while no significant changes in performance were

revealed for individuals who received ratings that were greater than their self-ratings. Atwater et al. concluded that individuals were motivated to improve performance when they received low ratings, particularly ratings lower than self-perceptions. Similar to predictions made by consistency theory (Korman, 1970, 1976), their results indicated that individuals receiving others' ratings below self-ratings may have tried to improve their performance in an effort to live up to their self-image. However, they also found that when ratings from others exceeded self-expectations, feedback recipients did not strive to reduce the discrepancy by lowering performance as suggested by consistency theory. Rather their performance had not significantly increased or decreased when measured eight months later.

In contrast, Smither, Wohlers, and London (1995) found that self-other rating discrepancy was not significantly related to a global measure of intentions to improve performance. The study, however, included only fifty-four participants and consequently may not have had adequate power to appropriately test for the relationship. Additionally, when Smither, Wohlers, and London conducted further analyses they found that feedback discrepancy was significantly related to intentions regarding two specific job activities (i.e., recruiting and professional development). Furthermore, as proposed by consistency theory, they found that individuals reporting the lowest intentions had low self-ratings and low ratings from others. London and Smither (1995) suggested that employees compared feedback from others to their own self-assessment, and that the resulting perceived self-other rating discrepancy was used to "set goals, establish areas for skill development, change behavior, and improve performance" (p. 808).

Smither, London, Vasilopoulos, Reilly, Millsap, and Salvemini's (1995) study also revealed support for the role of low ratings and self-other rating discrepancy in motivating performance improvement. They found that individuals whose initial level of performance was rated as low to moderate demonstrated greater improvement over a six-month time period than individuals whose initial performance was rated as high. Additionally, they demonstrated that this improvement was greatest for individuals receiving other ratings lower than self-ratings. The authors also found that for those individuals who received low ratings and had low self-ratings, performance did not improve significantly. Thus, they concluded that individuals are motivated to reduce the discrepancy between other ratings and organization expectations (high performance), unless their self-ratings are also low.

Reilly et al. (1996) further examined this same group of employees after a two-year time period. Their study included ninety-two of the original two hundred and thirty-eight participants and revealed that Smither, London, Vasilopoulos, Reilly, Millsap, and Salvemini's (1995) results were still present two years later. Individuals who had initially received low ratings from others, particularly those with other ratings lower than self-ratings, had maintained their performance improvement. Furthermore, the authors demonstrated that these findings accounted for improvement beyond simple regression to the mean.

Based on the reviewed literature, the current study proposed a negative main effect for other ratings, and a positive relationship for self-other rating discrepancy in predicting behavioral reactions.

> Hypothesis 5a: Manager ratings will be negatively related to feedback recipients' intentions to improve work performance.

Hypothesis 5b: Discrepancy between self-ratings and manager ratings will be positively related to feedback recipients' intentions to improve work performance.

Hypothesis 6a: Direct report ratings will be negatively related to feedback recipients' intentions to improve work performance.

Hypothesis 6b: Discrepancy between self-ratings and direct report ratings will be positively related to feedback recipients' intentions to improve work performance.

Hypothesis 7a: Peer ratings will be negatively related to feedback recipients' intentions to improve work performance.

Hypothesis 7b: Discrepancy between self-ratings and peer ratings will be positively related to feedback recipients' intentions to improve work performance.

Efficacy to Improve Work Performance

Fedor (1991) suggested that researchers should follow the lead of social cognitive theorists (cf. Farh & Dobbins, 1989) who have utilized the concept of self-efficacy in predicting behavioral responses to feedback. Wood and Bandura (1989) described self-efficacy as an individual's belief in his/her "capabilities to mobilize the motivation, cognitive resources, and courses of action needed to meet the given situational demands" (p. 408). Thus, the focus of this concept is not on the skills one has, but rather on judgments of what one can accomplish with those skills (Parker, 1998).

The importance of self-efficacy as a motivational construct and its ability to predict volitional behavior has been well documented (Gist, Schwoerer, & Rosen, 1989; Gist, Stevens, & Bavetta, 1991; Wood & Bandura, 1989). Research has shown that self-efficacy is predictive of individuals' interest and participation in developmental activities (Maurer & Tarulli, 1994; Noe & Wilk, 1993). Furthermore, self-efficacy has been demonstrated to influence interpretation of feedback (Silver, Mitchell, & Gist, 1991), reactions to the feedback (Gist et al., 1989; Kanfer & Ackerman, 1989), intentions

(Maurer, Mitchell, & Godsey, 1997), and choice of activities (Gist & Mitchell, 1992; Lent, Brown, & Larkin, 1987; Stumpf & Harman, 1987). Employees who feel confident about particular tasks are not only more likely to engage in those tasks, they are more likely to perform them well (Barling & Beattie, 1983; Gist, 1987).

A related construct, self-esteem, was proposed by Ilgen et al. (1979) to play a role in predicting recipient reactions to performance feedback. Self-esteem differs from self-efficacy in that it is a global personality trait which is stable across contexts, whereas self-efficacy is a dynamic task specific construct (Bandura, 1982). Self-efficacy is more appropriate to consider in the study of developmental activities because it refers to specific task capabilities (Fedor, 1991). Self-efficacy is partly reflective of personality (e.g., self-esteem), but is further shaped by the individual's experiences (Parker, 1998). Consequently, the extent to which an individual is confident in his/her task specific abilities should facilitate intentions to engage in development activities.

The formation of strong performance improvement intentions may be influenced by the degree of confidence in goal achievement (self-efficacy) as well as by feelings of uneasiness caused by feedback-standard discrepancies (Fedor, 1991). London and Smither (1995) proposed that task self-efficacy is a critical individual difference variable that operates as a moderator between self-awareness (induced by receipt of performance feedback) and subsequent behavioral response to the feedback. When presented with feedback, self-efficacy is a critical variable in determining the direction of subsequent performance (Silver et al., 1995). Feedback recipients will likely consider information about their capabilities and then regulate their behavior accordingly (Bandura & Schunk, 1981).

Factors such as past experience, perceptions of personal factors, situational resources, and task requirements are believed to play a role in forming self-efficacy judgments (Gist & Mitchell, 1992). Self-efficacy is an important motivational construct that influences not only an individual's choices and goals, but also his/her commitment and persistence in goal attainment (Gist & Mitchell, 1992; Locke, Frederick, Lee, & Bobko, 1984). Consequently, it may also play an important role in understanding feedback recipient's use of MSF. For example, individuals with moderate to high self-efficacy are more likely to engage in, and persist longer at, task-related activities. In contrast, individuals with lower self-efficacy are more likely to give up in the face of adversity rather than employ coping mechanisms (Gist, 1987; Lent et al., 1987; Locke et al., 1984; Taylor et al., 1984). The current study proposed a positive main effect for the role of self-efficacy in predicting intentions to improve work performance. Furthermore, self-efficacy is predicted to influence the link between MSF ratings and intentions to improve work performance. That is, the predicted negative relationship between others' ratings and intentions is believed to be stronger for feedback recipients with higher self-efficacy than for feedback recipients with lower self-efficacy.

Hypothesis 8a: Efficacy to improve work performance will be positively related to feedback recipients' intentions to improve work performance.

Hypothesis 8b: There will be an interaction between manager ratings and efficacy to improve work performance such that the relationship between manager ratings and intentions to improve work performance will be more negative for feedback recipients reporting higher efficacy to improve work performance.

Hypothesis 8c: There will be an interaction between direct report ratings and efficacy to improve work performance such that the relationship between direct report ratings and intentions to improve work performance will be more negative for feedback recipients reporting higher efficacy to improve work performance.

Hypothesis 8d: There will be an interaction between peer ratings and efficacy to improve work performance such that the relationship between peer ratings and intentions to improve work performance will be more negative for feedback recipients reporting higher efficacy to improve work performance.

Summary of Hypotheses

Hypothesis 1a: Manager ratings will be positively related to feedback recipients' satisfaction with the MSF process.

Hypothesis 1b: Direct report ratings will be positively related to feedback recipients' satisfaction with the MSF process.

Hypothesis 1c: Peer ratings will be positively related to feedback recipients' satisfaction with the MSF process.

Hypothesis 2a: Manager ratings will be positively related to feedback recipients' acceptance of manager feedback.

Hypothesis 2b: Direct report ratings will be positively related to feedback recipients' acceptance of direct report feedback.

Hypothesis 2c: Peer ratings will be positively related to feedback recipients' acceptance of peer feedback.

Hypothesis 3a: Direct report rating agreement will be positively related to feedback recipients' acceptance of direct report feedback.

Hypothesis 3b: There will be an interaction between direct report ratings and direct report rating agreement such that the relationship between direct report rating agreement and acceptance of direct report feedback will be more positive for feedback recipients receiving lower ratings.

Hypothesis 4a: Peer rating agreement will be positively related to feedback recipients' acceptance of peer feedback.

Hypothesis 4b: There will be an interaction between peer ratings and peer rating agreement such that the relationship between peer rating agreement and acceptance of peer feedback will be more positive for feedback recipients receiving lower ratings.

Hypothesis 5a: Manager ratings will be negatively related to feedback recipients' intentions to improve work performance.

Hypothesis 5b: Discrepancy between self-ratings and manager ratings will be positively related to feedback recipients' intentions to improve work performance.

Hypothesis 6a: Direct report ratings will be negatively related to feedback recipients' intentions to improve work performance.

Hypothesis 6b: Discrepancy between self-ratings and direct report ratings will be positively related to feedback recipients' intentions to improve work performance.

Hypothesis 7a: Peer ratings will be negatively related to feedback recipients' intentions to improve work performance.

Hypothesis 7b: Discrepancy between self-ratings and peer ratings will be positively related to feedback recipients' intentions to improve work performance.

Hypothesis 8a: Efficacy to improve work performance will be positively related to feedback recipients' intentions to improve work performance.

Hypothesis 8b: There will be an interaction between manager ratings and efficacy to improve work performance such that the relationship between manager ratings and intentions to improve work performance will be more negative for feedback recipients reporting higher efficacy to improve work performance.

Hypothesis 8c: There will be an interaction between direct report ratings and efficacy to improve work performance such that the relationship between direct report ratings and intentions to improve work performance will be more negative for feedback recipients reporting higher efficacy to improve work performance.

Hypothesis 8d: There will be an interaction between peer ratings and efficacy to improve work performance such that the relationship between peer ratings and intentions to improve work performance will be more negative for feedback recipients reporting higher efficacy to improve work performance.

CHAPTER III

RESEARCH METHODS

Procedure

The current study was conducted as part of a large-scale implementation of a multisource feedback program in a large southeastern utility company. Employees were informed that the purpose of the MSF process was to engender self-awareness, performance improvement, and enhanced communication among employees. Specifically, no formal rewards or outcomes (e.g., promotions) were associated with the results of the MSF process. All feedback was confidential and provided only to the participant. The program was open to both managers and non-managerial employees. Additionally, participation in the MSF program, and in all aspects of the study was voluntary for feedback recipients and feedback givers.

As part of the program, data was collected from the feedback recipient, and his or her manager(s), peers, and direct reports (if applicable). Data for the study was collected during two time periods. Figure 3 displays graphically the data collection schedule. Appendix A contains sample study materials.

Wave One of Data Collection

In the first wave of data collection, each feedback recipient provided names for their feedback givers, including all of their direct reports, their manager, and any peers that they felt had sufficient opportunities to witness their work performance. The feedback givers identified were sent rating packets through the company's interoffice mail system. Each packet contained a cover letter from the company's leaders encouraging participation in the program, a feedback giver guide (which contained

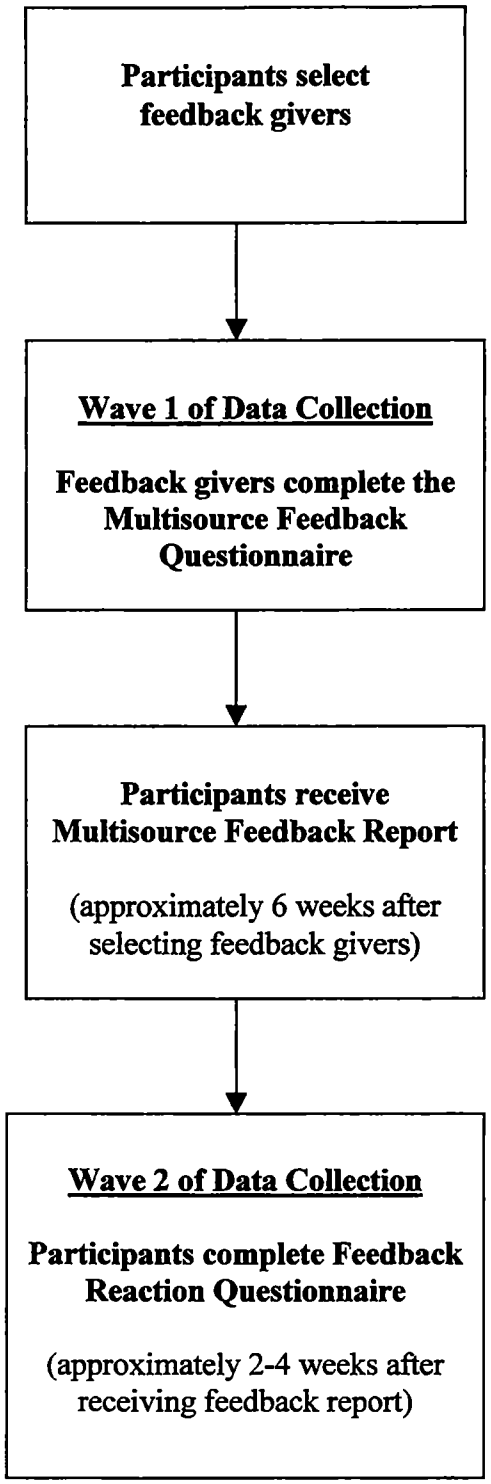


Figure 3. Data Collection Outline for the Current Study

specific instructions on how to complete the rating instrument as well as definitions of the scale anchors), the MSF questionnaire, and a postage paid reply envelope. In order to assure confidentiality, completed MSF questionnaires were sent directly to an external vendor for data processing, report generation, and storage.

The MSF questionnaire contained forty-one behaviorally oriented items covering eleven performance dimensions: integrity, respect for the individual, teamwork, innovation and continuous improvement, honest communication, leadership, flexibility, judgment and decision making, interpersonal skills, giving feedback, and receiving feedback. The first seven of these performance dimensions were identified as core values of the company, and the remaining four dimensions were considered important for professional development.

Feedback givers (including self) were instructed to evaluate the target employee's performance during the previous six-month period. All items were rated on a five point Likert-type scale that ranged from "not at all effective " to "extremely effective." Additionally, for each item, feedback givers were instructed to mark "No Basis to Rate" if they had not had the opportunity to observe that behavior. In addition to the forty-one items, feedback givers were given space to make qualitative comments regarding the recipient's performance. The questionnaires were precoded with the feedback recipient's name and a scan code so that direct report, peer, and manager ratings could be accurately summarized for the target feedback recipient.

All feedback givers, except managers, were assured of anonymity in their MSF ratings. Ratings from managers were not anonymous because employees typically only have one manager. Ratings were provided to feedback recipients only in aggregate form

for each feedback giver source. Additionally, data from direct reports and peers were only provided if three or more questionnaires from each source were returned.

Approximately six weeks after feedback nominations were made, the external vendor generated a summary report for each feedback recipient and mailed the feedback report directly to the recipient in a confidential envelope. Feedback recipients also received a feedback recipient workbook which included information regarding interpreting and using their feedback. The feedback reports contained mean ratings for individual items and composite performance dimensions from each feedback giver source, and normative information about the average rating received by other feedback recipients from their workshop groups. Workshop groups were typically composed of employees from the same department within the company (e.g., corporate human resources). For both item and dimensional ratings, within-source rating agreement was reported in a categorical format (high, medium, or low) for direct report and peer feedback giver sources. Qualitative comments regarding performance were typed and included at the end of the report.

Wave Two of Data Collection

The second wave of data collection typically occurred two to four weeks after participants received their MSF Reports. On occasions, however, the time span varied beyond two to four weeks because of scheduling conflicts for some work units. Employees attended an organizational culture change workshop, during which facilitators guided discussion regarding the interpretation and developmental use of participants' MSF. During the workshop, feedback recipients were encouraged to select "buddy coaches," discuss MSF feedback, and draft individual development plans. After the

discussions, employees were asked to complete an evaluation questionnaire. The questionnaire included questions regarding the variables of interest to the current study (e.g., feedback recipients' reactions to the MSF feedback) as well as questions regarding the culture change workshop, which were not part of the current study.

Participants were requested to provide their social security numbers on the reaction questionnaire. This is a standard procedure that the company uses to link evaluation materials with appropriate demographic data (e.g., gender, race, age, organizational tenure, education level). In accordance with company policy, however, employees were not required to provide their social security numbers. The social security numbers were also used to match responses to the MSF data. No names were associated with these numbers, and participants were assured that their individual responses would remain confidential. Seven hundred and seventy-six participants completed the questionnaire and 51.68% of these participants also provided their social security numbers, resulting in a sample of 401 participants.

Research Sample

The sample of 401 feedback recipients was 10% minority, 29% female, had an average organizational tenure of 21 years (SD=7.59), and an average age of 48 years (SD=6.25). Thirty-five percent of the participants had a high school degree or less, 21% had some college education, 35% held a Bachelor's degree, and 9% held a Master's degree or higher. The participants represented a wide variety of functional areas and organizational levels within the utility company. They were from areas such as corporate, engineering, information services, and power generation, and represented both managerial (41%) and non-managerial (59%) employees.

For the company in general, the population of employees was 11% minority and 21% female. The average organizational tenure was 18 years (SD =8.43) and the average age was 48 (SD=7.64). Forty-two percent of the participants had a high school degree or less, 24% had some college education, 26% held a Bachelor's degree, and 8% held a Master's degree or higher. Thus, the participants of the current study appeared to be similar to the company's employee population with respect to ethnicity, gender, age, and organizational tenure. However, the participants of the study appeared to have slightly more formal education than the company's employee population.

MSF questionnaires were completed by the participants' managers, peers, and direct reports (if applicable), resulting in ratings from 289 managers, 352 direct reports, 1938 peers, and 302 participants (self-evaluations). Thus, the total number of MSF questionnaires completed for this study was 2881.

In total, 4,432 MSF questionnaires were distributed and 2,881 were returned for an overall response rate of 65%. Information specific to employees who requested feedback from a particular source is presented next. Individuals who did not request information from a given source are not included in this information regarding response rates etc. The number zero indicates that although an employee requested feedback from a particular source, no completed MSF questionnaires were received for that source.

Due to changes in reporting relationships (e.g., job rotation), some feedback recipients requested feedback from previous and current managers. The number of manager questionnaires completed per feedback recipient ranged from 0 to 3. The average number of manager questionnaires per feedback recipient was .98 (SD=.39) and the response rate was 70%. The number of direct report questionnaires completed per

feedback recipient ranged from 0 to 18, with a mean of 3.2 (SD=2.38) and a response rate of 60%. The number of peer questionnaires completed per feedback recipient ranged from 0 to 12. The average number of peer questionnaires per recipient was 4.95 (SD=2.07) and the response rate was 64%. The response rate for self-ratings was 76%.

As discussed previously, a minimum of 3 ratings was required in order to receive direct report and peer feedback. Consequently, in the present sample, 273 participants received feedback from their managers, 108 participants received feedback from at least three direct reports (the limited sample size of this group is largely a result of the study's sample being composed of 59% non-managerial employees), 391 participants received feedback from at least three peers, and 302 participants completed self-evaluations.

Measures

MSF Ratings

For each feedback recipient, an overall rating was computed by averaging ratings on the 41-items that measured the eleven MSF dimensions. A separate measure was computed for each source (i.e., manager, direct report, peer, and self). Although averaging the items into a single composite rating is consistent with previous MSF research (Atwater, Ostroff, Yammarino, & Fleenor, 1998; Facteau et al., 1997; Hazucha et al., 1993; Smither, London, Vasilopoulos, Reilly, Millsap, & Salvemini, 1995) psychometric evidence to support such calculations are presented in the results section of this paper. The MSF ratings were collected during the first wave of data collection and were made on a 5-point Likert-type scale (1=not at all effective to 5=extremely effective). Scale items are presented in Figure 4.

How effective is this employee at ...	
Integrity	1. Following through on work commitments. 2. Conducting work activities according to the highest ethical standards. 3. Acting fairly toward all employees. 4. Taking responsibility for his/her actions.
Respect for the Individual	5. Supporting a work environment which values a broad range of experiences, backgrounds, and points of view. 6. Recognizing the importance of everyone's work. 7. Treating every employee with dignity and respect. 8. Realizing the benefits of diverse opinions.
Teamwork	9. Cooperating with others to achieve the organization's goals. 10. Developing positive working relationships with other employees. 11. Working to turn conflict into "win-win" situations. 12. Contributing actively to group projects.
Innovation and Continuous Improvement	13. Developing original, creative, innovative approaches to work situations. 14. Taking calculated risks to improve work processes. 15. Using mistakes as opportunities for learning. 16. Monitoring progress toward high-quality outcomes.
Honest Communication	17. Communicating honestly with everyone, regardless of level or functional area. 18. Sharing appropriate information with other employees in a timely manner. 19. Listening attentively to others' concerns or ideas. 20. Accurately sharing relevant information with individuals external to the organization.
Leadership	21. Communicating a clear direction and vision to others. 22. Inspiring others to achieve their full potential. 23. Recognizing others for their contributions. 24. Leading by example.
Flexibility	25. Seeing change and uncertainty as new opportunities for improvement. 26. Adapting quickly to meet changing organizational needs. 27. Remaining open to new ideas.
Judgment and Decision Making	28. Making decisions in a timely manner. 29. Using factual information when making decisions. 30. Considering alternative courses of action for challenging problems. 31. Thinking in a logical manner.
Interpersonal Skills	32. Developing trust and openness with coworkers. 33. Interacting effectively with all types of individuals. 34. Focusing objectively on the facts in conflict situations. 35. Expressing opposing viewpoints in a tactful manner.
Giving Feedback	36. Giving other employees an appropriate amount of feedback about their work performance. 37. Motivating others through the use of feedback. 38. Providing specific work-oriented feedback.
Receiving Feedback	39. Encouraging other employees to give him/her work-related feedback. 40. Accepting feedback from all types of employees. 41. Making appropriate changes based on input from others.

Note. Items were rated on a 5-point scale (1=extremely ineffective to 5=extremely effective).

Figure 4. Items on MSF Questionnaire Completed by Managers, Direct Reports, Peers, and Self

Within-Source Rating Agreement

Indices of within-source rating agreement for direct reports and peers were calculated as was proposed by James, Demaree, and Wolf (1984). Additionally, such a calculation is consistent with previous MSF literature (e.g., Facteau et al., 1997; Kozlowski & Hattrup, 1992). For both direct report ratings and peer ratings, r_{wg} was calculated to assess the degree to which raters make similar ratings (cf. James et al., 1984; Kozlowski & Hattrup, 1992). Because of the complexity associated with this information, within-source rating agreement was presented in the feedback reports as a categorical classification. Agreement was reported as "low" if the value of r_{wg} was less than .60, "medium" if the value was between .60 and .79, or "high" if the value was .80 or greater. Since the focus of the current study is feedback recipients' reactions to MSF, agreement indices for this study were computed from the categorical information rather than from the raw rating data, mirroring the information feedback recipients received in their feedback reports.

Following the methods of Facteau et al. (1997), a within-source rating agreement index was computed by assigning scores according to the level of agreement for each item on the MSF instrument. "Low" agreement received a score of zero, "medium" agreement received a score of 1, and "high" agreement received a score of 2. The sum of these values was computed for direct reports and peers separately. Possible values for direct report rating agreement and peer rating agreement ranged from zero ("low" agreement on all 41 items) to 82 ("high" agreement on all 41 items).

Self-Other Rating Discrepancy

The relationship between self-ratings and other ratings was explored with the quadratic model advocated by Edwards (1994). "Regression-based models which use five predictors (self, other, self-squared, other-squared, and the product of self and other ratings) yield a surface that can have slope, curvature and tilt, and can test virtually any functional form of agreement, while avoiding problems associated with commonly used indices of agreement" (Atwater et al., 1998, p. 583). The proposed procedures were adopted in the current study. More specifically, rather than creating a single index to represent the degree of self-other rating discrepancy (e.g., deviation scores, correlations, categories), the relationship between self-ratings, other ratings, and outcome was conceptualized as separate dimensions (Atwater et al., 1998; Edwards, 1994).

The higher-order terms were computed by taking the product of the independent variables of interest (e.g., self-ratings X manager ratings, self-ratings X direct report ratings, self-ratings X peer ratings) as well as the squared terms for each rating source (e.g., squared manager ratings, squared direct report ratings, squared peer ratings, squared self-ratings). Computation of these variables allows for the exploration of independent main effects as well as possible nonlinear effects. However, the procedure runs the risk of producing a high degree of multicollinerity among the predictor variables (Cohen & Cohen, 1983) and several researchers have suggested that the variables be centered to reduce multicollinearity (Cohen & Cohen, 1983; Facteau et al., 1997). Consequently, the predictor variables were centered (e.g., deviation scores computed) prior to computing higher-order terms (cf. Cohen & Cohen, 1983; Cronbach, 1987).

Efficacy to Improve Work Performance

Efficacy to improve work performance was assessed during the second wave of data collection. The measure reflects the participant's belief in his/her ability to develop and improve his/her work performance. Ratings were made on a 5-point Likert-type scale (1=strongly disagree to 5=strongly agree) with higher scores indicative of greater efficacy to improve work performance.

This measurement format differs from traditional methods of measuring self-efficacy. Traditional formats typically require two responses to each item in an effort to assess both magnitude and strength of self-efficacy (e.g., Wood & Locke, 1987). Magnitude is measured in a yes/no format by asking individuals whether they will be able to perform a specific task at a certain level. Strength is measured by asking individuals to indicate their percent confidence in being able to perform the specific task at the specified level. In traditional self-efficacy measurement, a composite score of the two responses is used as an indicator of self-efficacy (cf. Lee & Bobko, 1994). However, recent research has demonstrated that "Likert-type and traditional measures of self-efficacy have similar reliability-error variance, provide equivalent levels of prediction, and have similar factor structure and similar discriminabilty" (Maurer & Pierce, 1998, p.324). Additionally, Mudgett and Quinones (1997) recently reported that self-efficacy items of a more general format (e.g., "I feel confident in my ability to perform the [task] effectively") were better able to account for aspects of performance, satisfaction, and goal commitment than traditional self-efficacy items. Based on these findings, Maurer and Pierce (1998) concluded that a Likert-scale may be a viable alternative method to measure self-efficacy, citing in particular its requirement for only one response per item which is beneficial to

researchers who are under tight "item-response budgets" in applied field research. The measure consisted of three items adapted from previous research (Gist et al., 1991; Maurer & Pierce, 1998; Mudgett & Quinones, 1997; Wood & Bandura, 1989). Items are located in Figure 5.

Reactions to MSF: Affective, Cognitive, and Behavioral

All reactions to MSF were assessed during wave two of data collection and can be seen in Figures 6-8. Ratings were made on a 5-point Likert-type scale (1=strongly disagree to 5=strongly agree) with higher scores indicative of more positive reactions to the MSF. A suitable scale was not found in the extant literature to measure Satisfaction with the MSF process. Thus, a four-item scale was developed for the current study to assess the feedback recipients' *affective* reactions. Feedback acceptance was assessed to measure the feedback recipients' *cognitive* reactions. The variable was measured by three items for each of the rating sources (i.e., managers, peers, and subordinates). The scale items were adapted from Facteau (1995) and are consistent with Ilgen et al.'s (1979) definition of feedback acceptance. The items measure the extent to which feedback recipients perceive that the feedback received was an accurate representation of his or her performance. Intentions to improve work performance were assessed as a surrogate of feedback recipients' *behavioral* reactions. Eight items adapted from previous research (Dipboye & dePontbriand, 1981; Dorfman, Stephan, & Loveland, 1986; Facteau, 1995; Giles & Mossholder, 1990) were employed to measure feedback recipients' specific intentions regarding behavior aimed at professional development and performance improvement.

1. If I apply myself, I can use my 360 Feedback to develop professionally.
2. If I work hard, I can improve in those areas I was rated least effective.
3. I am confident in my ability to improve my work performance.

Note. Items were rated on a 5-point scale (1=strongly disagree to 5=strongly agree).

Figure 5. Items Measuring Efficacy to Improve Work Performance

(Adapted from Gist, Stevens, & Bavetta, 1991; Maurer & Pierce, 1998; Mudgett & Quinones, 1997; Wood & Bandura, 1989)

1. The 360-Degree Feedback process provides valuable information about work performance.

2. The 360-Degree Feedback program helps employees improve their work performance.

3. I would recommend the 360-Degree Feedback process to others.

4. Overall, I am satisfied with the 360-Degree Feedback process at this organization.

Note. Items were rated on a 5-point scale (1=strongly disagree to 5=strongly agree).

Figure 6. Items Measuring Affective Reactions to MSF: Satisfaction with the MSF Process

Items Measuring Acceptance of Manager Feedback

1. I received accurate feedback from my manager.
2. I agree with the feedback I received from my manager.
3. The feedback from my manager is a good reflection of my work performance.

Items Measuring Acceptance of Direct Report Feedback

1. I received accurate feedback from my direct reports.
2. I agree with the feedback I received from my direct reports.
3. The feedback from my direct reports is a good reflection of my work performance.

Items Measuring Acceptance of Peer Feedback

1. I received accurate feedback from my peers.
2. I agree with the feedback I received from my peers.
3. The feedback from my peers is a good reflection of my work performance.

Note. Items were rated on a 5-point scale (1=strongly disagree to 5=strongly agree).

Figure 7. Items Measuring Cognitive Reactions to MSF: Acceptance of Feedback.

(Adapted from Facteau, 1995)

Based on my 360-Degree Feedback, I plan to...

1. informally discuss my feedback with my feedback givers.
2. conduct a feedback discussion meeting with my feedback givers.
3. ask my feedback givers for specific examples of how I can improve.
4. request/volunteer for developmental work assignments.
5. attend workshops/training related to my professional development.
6. review materials (magazines, books, tapes, etc.) that will help me improve my work performance.
7. revise/develop goals or an action plan based on my feedback.
8. make behavior changes in the way I do my work.

Note. Items were rated on a 5-point scale (1=strongly disagree to 5=strongly agree).

Figure 8. Items Measuring Behavioral Reactions (Surrogate) to MSF: Intentions to Improve Work Performance

(Adapted from Dipboye & dePontbriand, 1981; Dorfman, Stephan, & Loveland, 1986; Facteau, 1995; Giles & Mossholder, 1990)

Data Analysis

Power Analysis

A power analysis was performed to determine the sample size needed to reasonably test the hypotheses without a high risk of Type II error. Based on this power analysis, 92 subjects were deemed necessary to detect a medium effect size (Cohen & Cohen, 1983). The power analysis calculations are presented in Appendix B.

Statistical Analysis

The current study hypothesized that MSF ratings would be significantly positively related to feedback recipients' affective and cognitive reactions. The current study also hypothesized that the degree of discrepancy between other ratings and the standard of high performance on the MSF items, and the degree of discrepancy between other ratings and self-ratings, would influence feedback recipients' behavioral reactions to MSF. Correlation coefficients and hierarchical multiple regression procedures recommended by Edwards (1994) were utilized to test hypotheses regarding the relationship between MSF ratings and feedback recipients' reactions. The regression equations included self-ratings, other ratings, and higher-order terms to adequately test for all possible effects (e.g., linear and non-linear) of MSF ratings (cf. Edwards, 1994). Main effects were entered in the first step of the analysis, followed by squared terms for self-ratings and other ratings, and the cross product term between self-ratings and other ratings in the second step. A significant increase in R^2 at step two was interpreted as evidence of a nonlinear relationship and the surface corresponding to the equation was examined (Edwards, 1994).

The current study also proposed several moderator hypotheses. The hypotheses regarding within-source rating agreement (Hypotheses 3b & 4b) and efficacy to improve work performance (Hypotheses 8b-8d) were tested utilizing hierarchical regression procedures. Two regression equations were computed for each of the moderator analyses. The first step of the regression included variables hypothesized as having main effects on the dependent variable and the second step included the cross product between the moderator variable and the independent variable. A significant increase in R^2 at step two was interpreted as evidence of moderation (cf. James and Brett, 1984).

CHAPTER IV

RESULTS

The results of data analysis are described in this chapter. The first section presents preliminary analyses conducted for the current study. This section provides a psychometric evaluation of the decision to conceptualize MSF ratings as a composite measure of the 41 MSF items. Additionally, this section includes a psychometric evaluation of affective, cognitive, and behavioral feedback reactions. Principal components exploratory factor analysis using varimax rotation was utilized and reliability analyses were examined. The second section provides the main study results. In this section, the unit of analysis is defined, descriptive statistics and correlations for study variables are described, and results of hypothesis testing are presented.

Preliminary Analyses

Psychometric Evaluation of MSF Ratings

Principal components exploratory factor analyses with varimax rotation were utilized to explore the adequacy of aggregating the 41 MSF items into composite MSF variables. Separate factor analyses were conducted for manager ratings, direct report ratings, peer ratings, and self-ratings. Coefficient alpha reliability estimates were also calculated for scales to assess the internal consistency reliability of each measure.

Factor analytic results for the 41-item MSF rating instrument are presented for each rating source in Tables 1-4. Analyses for all four rating sources revealed that the eleven dimensions assessed on the MSF instrument were highly intercorrelated. Furthermore, many items had significant cross loadings (i.e., factor loadings greater than or equal to .40). More specifically, for manager ratings, dimension correlations ranged

Table 1. Factor Analysis of Manager Ratings

Measure	Items		Rotated Factor Loadings			
			1	2	3	4
Integrity	1.	Following through on work commitments				.63
	2.	Conducting work activities according to the highest ethical standards	.45			.67
	3.	Acting fairly toward all employees	.74			
	4.	Taking responsibility for his/her actions	.52			.52
Respect for the Individual	5.	Supporting a work environment which values a broad range of experiences, backgrounds, and points of view	.73			
	6.	Recognizing the importance of everyone's work	.74			
	7.	Treating every employee with dignity and respect	.80			
	8.	Realizing the benefits of diverse opinions	.75			
Teamwork	9.	Cooperating with others to achieve the organization's goals	.67			
	10.	Developing positive working relationships with other employees	.71			
	11.	Working to turn conflict into "win-win" situations	.71			
	12.	Contributing actively to group projects	.48			.46
Innovation and Continuous Improvement	13.	Developing original, creative, innovative approaches to work situations		.73		
	14.	Taking calculated risks to improve work processes		.71		
	15.	Using mistakes as opportunities for learning		.43		.49
	16.	Monitoring progress toward high-quality outcomes		.45	.42	.42
Honest Communication	17.	Communicating honestly with everyone, regardless of level or functional area	.54			
	18.	Sharing appropriate information with other employees in a timely manner	.49		.40	.45
	19.	Listening attentively to others' concerns or ideas	.65			
	20.	Accurately sharing relevant information with individuals external to the organization	.41			.43
Leadership	21.	Communicating a clear direction and vision to others		.44	.54	
	22.	Inspiring others to achieve their full potential	.46	.42	.51	
	23.	Recognizing others for their contributions	.49			
	24.	Leading by example		.44		.41
Flexibility	25.	Seeing change and uncertainty as new opportunities for improvement	.48	.66		
	26.	Adapting quickly to meet changing organizational needs	.41	.66		
	27.	Remaining open to new ideas	.54	.64		

Table 1. Factor Analysis of Manager Ratings (continued)

Measure	Items		Rotated Factor Loadings			
			1	2	3	4
Judgment and Decision Making	28.	Making decisions in a timely manner		.52		.51
	29.	Using factual information when making decisions				.64
	30.	Considering alternative courses of action for challenging problems		.63		
	31.	Thinking in a logical manner		.50		.58
Interpersonal Skills	32.	Developing trust and openness with coworkers	.72			
	33.	Interacting effectively with all types of individuals	.69			
	34.	Focusing objectively on the facts in conflict situations	.60		.40	
	35.	Expressing opposing viewpoints in a tactful manner	.67			
Giving Feedback	36.	Giving other employees an appropriate amount of feedback about their work performance			.83	
	37.	Motivating others through the use of feedback			.80	
	38.	Providing specific work-oriented feedback			.80	
Receiving Feedback	39.	Encouraging other employees to give him/her work-related feedback	.41		.52	
	40.	Accepting feedback from all types of employees	.55		.50	
	41.	Making appropriate changes based on input from others	.46		.48	
		Eigenvalue	21.57	2.74	1.57	1.22
		Percent of total variance	52.61	6.67	3.83	2.98

Note: N=289. Analysis was principal components factor analysis with varimax rotation. Cross loadings less than .40 were omitted for clarity. Factors with Eigenvalues greater than 1.0 were retained.

Table 2. Factor Analysis of Direct Report Ratings

Measure	Items		Rotated Factor Loadings	
			1	2
Integrity	1.	Following through on work commitments		.73
	2.	Conducting work activities according to the highest ethical standards	.62	.54
	3.	Acting fairly toward all employees	.76	.41
	4.	Taking responsibility for his/her actions	.63	.55
Respect for the Individual	5.	Supporting a work environment which values a broad range of experiences, backgrounds, and points of view	.73	.49
	6.	Recognizing the importance of everyone's work	.76	.46
	7.	Treating every employee with dignity and respect	.80	
	8.	Realizing the benefits of diverse opinions	.73	.48
Teamwork	9.	Cooperating with others to achieve the organization's goals	.63	.54
	10.	Developing positive working relationships with other employees	.79	.42
	11.	Working to turn conflict into "win-win" situations	.70	.53
	12.	Contributing actively to group projects	.56	.64
Innovation and Continuous Improvement	13.	Developing original, creative, innovative approaches to work situations	.43	.77
	14.	Taking calculated risks to improve work processes		.76
	15.	Using mistakes as opportunities for learning	.61	.63
	16.	Monitoring progress toward high-quality outcomes	.51	.73
Honest Communication	17.	Communicating honestly with everyone, regardless of level or functional area	.76	
	18.	Sharing appropriate information with other employees in a timely manner	.58	.54
	19.	Listening attentively to others' concerns or ideas	.69	.45
	20.	Accurately sharing relevant information with individuals external to the organization	.49	.71
Leadership	21.	Communicating a clear direction and vision to others	.54	.68
	22.	Inspiring others to achieve their full potential	.67	.59
	23.	Recognizing others for their contributions	.66	.53
	24.	Leading by example	.63	.63
Flexibility	25.	Seeing change and uncertainty as new opportunities for improvement		.79
	26.	Adapting quickly to meet changing organizational needs		.79
	27.	Remaining open to new ideas	.56	.68

Table 2. Factor Analysis of Direct Reports Rating (continued)

Measure	Items	Rotated Factor Loadings	
		1	2
Judgment and Decision Making	28. Making decisions in a timely manner		.80
	29. Using factual information when making decisions	.50	.72
	30. Considering alternative courses of action for challenging problems	.46	.72
	31. Thinking in a logical manner	.50	.69
Interpersonal Skills	32. Developing trust and openness with coworkers	.83	
	33. Interacting effectively with all types of individuals	.79	.40
	34. Focusing objectively on the facts in conflict situations	.68	.54
	35. Expressing opposing viewpoints in a tactful manner	.73	.46
Giving Feedback	36. Giving other employees an appropriate amount of feedback about their work performance	.58	.62
	37. Motivating others through the use of feedback	.63	.60
	38. Providing specific work-oriented feedback	.57	.65
Receiving Feedback	39. Encouraging other employees to give him/her work-related feedback	.62	.55
	40. Accepting feedback from all types of employees	.70	.54
	41. Making appropriate changes based on input from others	.63	.63
	Eigenvalue	29.30	1.32
	Percent of total variance	71.46	3.22

Note: N=352. Analysis was principal components factor analysis with varimax rotation. Cross loadings less than .40 were omitted for clarity. Factors with Eigenvalues greater than 1.0 were retained.

Table 3. Factor Analysis of Peer Ratings

Measure	Items		Rotated Factor Loadings		
			1	2	3
Integrity	1.	Following through on work commitments	.40	.69	
	2.	Conducting work activities according to the highest ethical standards	.58	.57	
	3.	Acting fairly toward all employees	.77		
	4.	Taking responsibility for his/her actions	.59	.61	
Respect for the Individual	5.	Supporting a work environment which values a broad range of experiences, backgrounds, and points of view	.66		
	6.	Recognizing the importance of everyone's work	.69		
	7.	Treating every employee with dignity and respect	.81		
	8.	Realizing the benefits of diverse opinions	.71		
Teamwork	9.	Cooperating with others to achieve the organization's goals	.63	.45	
	10.	Developing positive working relationships with other employees	.76		
	11.	Working to turn conflict into "win-win" situations	.65		.42
	12.	Contributing actively to group projects	.48	.56	
Innovation and Continuous Improvement	13.	Developing original, creative, innovative approaches to work situations		.71	
	14.	Taking calculated risks to improve work processes		.69	.43
	15.	Using mistakes as opportunities for learning		.63	
	16.	Monitoring progress toward high-quality outcomes		.72	
Honest Communication	17.	Communicating honestly with everyone, regardless of level or functional area	.63	.40	
	18.	Sharing appropriate information with other employees in a timely manner	.55	.46	
	19.	Listening attentively to others' concerns or ideas	.65		.45
	20.	Accurately sharing relevant information with individuals external to the organization	.51	.51	.41
Leadership	21.	Communicating a clear direction and vision to others		.55	.54
	22.	Inspiring others to achieve their full potential	.43	.43	.60
	23.	Recognizing others for their contributions	.54		.54
	24.	Leading by example	.46	.54	.45
Flexibility	25.	Seeing change and uncertainty as new opportunities for improvement		.53	.56
	26.	Adapting quickly to meet changing organizational needs		.58	.50
	27.	Remaining open to new ideas	.41	.48	.54

Table 3. Factor Analysis of Peer Ratings (continued)

Measure	Items		Rotated Factor Loadings		
			1	2	3
Judgment and Decision Making	28.	Making decisions in a timely manner		.72	
	29.	Using factual information when making decisions		.67	
	30.	Considering alternative courses of action for challenging problems		.67	.45
	31.	Thinking in a logical manner		.68	
Interpersonal Skills	32.	Developing trust and openness with coworkers	.73		.44
	33.	Interacting effectively with all types of individuals	.72		.45
	34.	Focusing objectively on the facts in conflict situations	.59		.52
	35.	Expressing opposing viewpoints in a tactful manner	.63		.54
Giving Feedback	36.	Giving other employees an appropriate amount of feedback about their work performance			.73
	37.	Motivating others through the use of feedback			.73
	38.	Providing specific work-oriented feedback		.44	.70
Receiving Feedback	39.	Encouraging other employees to give him/her work-related feedback	.42		.70
	40.	Accepting feedback from all types of employees	.53		.64
	41.	Making appropriate changes based on input from others	.48		.64
		Eigenvalue	25.84	2.02	1.34
		Percent of total variance	63.03	4.92	3.27

Note: N=1938. Analysis was principal components factor analysis with varimax rotation. Cross loadings less than .40 were omitted for clarity. Factors with Eigenvalues greater than 1.0 were retained.

Table 4. Factor Analysis of Self-Ratings

Measure	Items	Rotated Factor Loadings						
		1	2	3	4	5	6	7
Integrity	1. Following through on work commitments						.74	
	2. Conducting work activities according to the highest ethical standards						.58	
	3. Acting fairly toward all employees			.57				
	4. Taking responsibility for his/her actions						.64	
Respect for the Individual	5. Supporting a work environment which values a broad range of experiences, backgrounds, and points of view			.67				
	6. Recognizing the importance of everyone's work			.73				
	7. Treating every employee with dignity and respect			.64	.42			
	8. Realizing the benefits of diverse opinions			.68				
Teamwork	9. Cooperating with others to achieve the organization's goals				.52			
	10. Developing positive working relationships with other employees				.53			
	11. Working to turn conflict into "win-win" situations				.60			
	12. Contributing actively to group projects	.49			.45			
Innovation and Continuous Improvement	13. Developing original, creative, innovative approaches to work situations	.74						
	14. Taking calculated risks to improve work processes	.75						
	15. Using mistakes as opportunities for learning	.42						
	16. Monitoring progress toward high-quality outcomes	.41						
Honest Communication	17. Communicating honestly with everyone, regardless of level or functional area					.70		
	18. Sharing appropriate information with other employees in a timely manner					.62		
	19. Listening attentively to others' concerns or ideas				.44			
	20. Accurately sharing relevant information with individuals external to the organization							

Table 4. Factor Analysis of Self-Ratings (continued)

Measure	Items	Rotated Factor Loadings						
		1	2	3	4	5	6	7
Leadership	21. Communicating a clear direction and vision to others	.40	.46					
	22. Inspiring others to achieve their full potential	.44	.45					
	23. Recognizing others for their contributions							
	24. Leading by example	.46						
Flexibility	25. Seeing change and uncertainty as new opportunities for improvement	.69						
	26. Adapting quickly to meet changing organizational needs	.67						
	27. Remaining open to new ideas	.62						
Judgment and Decision Making	28. Making decisions in a timely manner					.43	.44	
	29. Using factual information when making decisions						.48	
	30. Considering alternative courses of action for challenging problems	.61						
	31. Thinking in a logical manner							.50
Interpersonal Skills	32. Developing trust and openness with coworkers					.51		
	33. Interacting effectively with all types of individuals				.45	.44		
	34. Focusing objectively on the facts in conflict situations				.63			
	35. Expressing opposing viewpoints in a tactful manner				.68			
Giving Feedback	36. Giving other employees an appropriate amount of feedback about their work performance		.79					
	37. Motivating others through the use of feedback		.79					
	38. Providing specific work-oriented feedback		.80					
Receiving Feedback	39. Encouraging other employees to give him/her work-related feedback		.68					
	40. Accepting feedback from all types of employees		.52	.40				
	41. Making appropriate changes based on input from others		.51					
	Eigenvalue	16.91	2.36	1.92	1.53	1.19	1.11	1.01
	Percent of total variance	41.25	5.75	4.69	3.74	2.89	2.72	2.46

Note: N=302. Analysis was principal components factor analysis with varimax rotation. Cross loadings less than .40 were omitted for clarity. Factors with Eigenvalues greater than 1.0 were retained.

from .47 to .81, four factors were extracted, and 19 items cross loaded across the four factors (see Table 1). Analysis of direct report ratings revealed dimension correlations ranging from .76 to .88, two factors were extracted, and 33 items demonstrated significant cross loadings (see Table 2). Similarly, peer ratings demonstrated high dimension correlations (e.g., .66 to .83), three factors were extracted, and 27 items had significant cross loadings (see Table 3). Analysis of self-ratings demonstrated slightly greater discrimination among dimensions and items. Dimension correlations ranged from .44 to .72. Seven factors were extracted with eight items demonstrating significant cross loadings (see Table 4).

Furthermore, as can be seen in Tables 1-4 the first factor in each analysis accounted for a large percent of the total variance explained. Given that the factor structure varied by feedback giver source, and that the first factor in each analysis accounted for the majority of variance, the decision was made to calculate a composite measure of MSF ratings. Such a calculation allows for the comparison of ratings from different feedback giver groups and is consistent with previous research. As such, the measure was calculated as an average of the 41 items on the MSF instrument. The internal consistency reliability estimates were as follows: .98 for manager ratings, .99 for direct report ratings, .99 for peer ratings, and .97 for self-ratings.

Psychometric Evaluation of Dependent Variables: Affective, Cognitive, and Behavioral Reactions to MSF

Three types of reactions to MSF ratings were the focus of this study (affective, cognitive, and behavioral). While the cognitive reactions (acceptance of feedback) were specific to source of feedback, affective (satisfaction with the MSF process) and

behavioral reactions (intentions to improve work performance) were likely to have been affected by feedback received from all sources. Individuals who requested feedback from a particular source (e.g., direct reports) and did not receive such information in their feedback report (e.g., less than 3 direct reports returned the MSF questionnaire) were believed to have different affective and behavioral reactions to the MSF than individuals who received feedback from all sources that they had requested. Anecdotal evidence from the cultural change workshops supports this inference. Many of the feedback recipients expressed frustration and disappointment when they did not receive the feedback that they were expecting (e.g., their direct reports did not complete the MSF instrument). Therefore, a criterion was established to identify participants who had received feedback from all the sources that they had selected.

More specifically, in the beginning of the MSF process, all feedback recipients selected individuals to provide them with feedback. Although feedback recipients were encouraged to select multiple feedback givers from each category (e.g., manager, direct report, and peer), the actual selections were at the feedback recipients' discretion. Consequently, some feedback recipients did not request feedback from all categories. It is believed that not receiving feedback from a source (e.g., managers) that was requested is qualitatively different from not receiving feedback from a source because it was not requested. For example, some feedback recipients did not have managerial responsibility and therefore did not request, or receive, feedback from direct reports. This situation is much different from a feedback recipient (e.g., a manager) who requested but did not receive feedback from his/her direct reports. Thus, the data was screened utilizing

information regarding sources that participants had requested feedback from, in comparison to sources of feedback participants actually received feedback from.

Regarding cognitive reactions, all participants who had received the applicable feedback were included in the analyses (e.g., if a feedback recipient received peer feedback, he/she was included in the analyses regarding acceptance of peer feedback, regardless of whether he/she had received feedback from other rating sources as well). However, only the subset of screened individuals were included in the analyses regarding affective and behavioral reactions (e.g., if a feedback recipient expected feedback from his or her manager but did not receive it, he or she was not included in any of the analyses regarding affective and behavioral reactions). Thus, of the 401 participants in this study, 226 were included in analyses regarding affective and behavioral reactions. Of those 226 participants, 195 had received MSF from their managers, 44 had received feedback from their direct reports, and 224 had received feedback from their peers.

The subset of screened feedback recipients was used to determine the psychometric adequacy of conceptualizing the dependent variables as three distinct types of reactions (affective, cognitive, and behavioral). In conducting the principal components exploratory factor analysis of the dependent variables, items pertaining to direct report ratings had to be removed. Due to the limited number of screened participants with MSF from direct reports (N=44), an analysis including items regarding direct reports would not meet the *subject to variables* (STV) ratio recommended for principal-components analysis (Bryant & Yarnold, 1995). The STV ratio should be 5 or greater (e.g., number of observations should be at least 5 times the number of items) in order to be reliable. An analysis including acceptance of manager feedback, acceptance

of direct report feedback, acceptance of peer feedback, satisfaction with MSF process, and intentions to improve work performance would result in a valid N of 32, 21 items, and a STV ratio of 1.5. Thus, the principal components exploratory factor analysis included only acceptance of manager feedback, acceptance of peer feedback, satisfaction with MSF process, and intentions to improve work performance. The results are presented in Table 5.

Factor analytic results for the 18 items measuring the dependent variables of interest revealed four factors as conceptualized. The eight items written to assess intentions to improve work performance loaded on the first factor and the coefficient alpha reliability estimate was .88. Therefore, the intentions to improve work performance scale was maintained as originally proposed. The four items written to assess satisfaction with the MSF process loaded on the second factor, the three items written to measure acceptance of peer feedback, and the three items written to measure acceptance of manager feedback loaded on the third and fourth factors, respectively. The coefficient alpha reliability estimates for the last three factors were .90 (satisfaction with the MSF process), .82 (acceptance of peer feedback), and .90 (acceptance of manager feedback). Additionally, the coefficient alpha reliability estimate for acceptance of direct report feedback was .89. In summary, all of the variables written to measure reactions to MSF were retained as originally proposed.

Major Study Results

Unit of Analysis

The focus of the current study was to explore potential correlates of feedback recipients' affective, cognitive, and behavioral reactions to MSF. All reaction measures

Table 5. Factor Analysis of Affective, Cognitive, and Behavioral Reactions to MSF

Measure	Items		Rotated Factor Loadings 1	2	3	4
Intentions to Improve Work Performance	1.	Based on my 360-Degree feedback, I plan to informally discuss my feedback with my feedback givers.	.73			
	2.	Based on my 360-Degree feedback, I plan to conduct a feedback discussion meeting with my feedback givers.	.76			
	3.	Based on my 360-Degree feedback, I plan to ask my feedback givers for specific examples of how I can improve.	.82			
	4.	Based on my 360-Degree feedback, I plan to request/volunteer for developmental work assignments.	.78			
	5.	Based on my 360-Degree feedback, I plan to attend workshops/training related to my professional development.	.69			
	6.	Based on my 360-Degree feedback, I plan to review materials (magazines, books, tapes, etc) that will help me improve my work performance.	.76			
	7.	Based on my 360-Degree feedback, I plan to revise/develop goals or an action plan based on my feedback.	.66			
	8.	Based on my 360-Degree feedback, I plan to make behavior changes in the way I do my work.	.54			
Satisfaction with the MSF Program	9.	The 360-Degree Feedback process provides valuable information about work performance.		.89		
	10.	The 360-Degree Feedback program helps employees improve their work performance.		.86		
	11.	I would recommend the 360-Degree Feedback process to others.		.87		
	12.	Overall, I am satisfied with the overall 360-Degree Feedback process at this organization.		.63		
Acceptance of Feedback from Manager	13.	I received accurate feedback from my manager/supervisor.			.89	
	14.	I agree with the feedback I received from my manager/supervisor.			.92	
	15.	The feedback from my manager was a good reflection of my work performance			.83	
Acceptance of Feedback from Peers	16.	I received accurate feedback from my peers/team members.				.75
	17.	I agree with the feedback I received from my peers/team members.				.85
	18.	The feedback from my peers/team members was a good reflection of my work performance.				.82
		Eigenvalue	6.78	2.65	1.67	1.43
		Percent of total variance	37.64	14.73	9.28	7.96

Note: N=226. Analysis was principal components factor analysis with varimax rotation. Cross loadings less than .40 were omitted for clarity. Factors with Eigenvalues greater than 1.0 were retained.

were collected from feedback recipients. Therefore, individual scores on these measures (affective reactions, cognitive reactions, and behavioral reactions) represent responses from feedback recipients. MSF ratings were collected from applicable managers, direct reports, peers, and feedback recipients (self). Accordingly, MSF ratings represent ratings from feedback givers about the feedback recipient. Consequently, sample sizes reported in the exploratory factor analyses of MSF ratings represented the *number of feedback givers* per category.

As previously discussed, MSF ratings were aggregated for each feedback source by averaging responses across all feedback givers in that category (managers, direct reports, peers). Other than the preceding notation for factor analysis of MSF ratings, all other reported sample sizes represent the feedback recipient as the unit of analysis. Therefore, reported sample size indicates the *number of feedback recipients* used to calculate the presented information.

Descriptive Statistics and Correlations

Descriptive statistics for all study variables are presented in Table 6. Zero order correlation coefficients are presented in Table 7. All demographic information (age, gender, education, and organizational tenure) was obtained via company records. While the entire sample of interest was 401 feedback recipients, the table lists the effective sample sizes for specific variables. As can be seen in the Table 6, performance was rated highest by peers ($\underline{M}$=3.76), followed by self ($\underline{M}$=3.69), direct reports ($\underline{M}$=3.65), and managers ($\underline{M}$=3.64). A one-way analysis of variance revealed that the ratings significantly differed by source ($\underline{F}_{(3,2877)}$=10.41, $\underline{p}$<.001). Post-hoc comparisons utilizing Tukey's Honestly Significant Difference test indicated that peer ratings were significantly

Table 6. Descriptive Statistics for Study Variables

Variable	N	Mean	SD	Coefficient Alpha	Possible Range of Values
Manager Ratings	273	3.64	.57	.98	1-5
Direct Report Ratings	108	3.65	.61	.99	1-5
Peer Ratings	391	3.76	.47	.99	1-5
Self-Ratings	302	3.69	.50	.97	1-5
Direct Report Rating Agreement	108	59.21	23.56	n/a	0-82
Peer Rating Agreement	391	55.37	17.50	n/a	0-82
Efficacy to Improve Work Performance	224	4.24	.47	.82	1-5
Satisfaction with the MSF Process	226	3.95	.67	.90	1-5
Acceptance of Manager Feedback	269	3.80	.83	.90	1-5
Acceptance of Direct Report Feedback	97	4.08	.60	.89	1-5
Acceptance of Peer Feedback	374	4.05	.54	.82	1-5
Intentions to Improve Work Performance	226	3.73	.55	.88	1-5

Note: The range of scores for direct report rating agreement and peer rating agreement is 0 to 82 (0=low agreement, 41=moderate agreement, 82=high agreement). The rating scale for manager, direct report, and peer ratings is 1=not at all effective, 3=effective, 5=extremely effective. The rating scale for all other variables is 1=strongly disagree, 3=neutral, 5=strongly agree. The reported sample size indicates the number of feedback recipients used to calculate the presented information.

Table 7. Zero Order Correlation Coefficients between Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Manager Ratings	----															
2. Direct Report Ratings	.49^{c}	----														
3. Peer Ratings	.39^{c}	.39^{c}	----													
4. Self-Ratings	.06	.06	-.07	----												
5. Direct Report Rating Agreement	.03	.26^{b}	.14	.01	----											
6. Peer Rating Agreement	.13^{a}	.19†	.21^{c}	-.04	.02	----										
7. Efficacy to Improve Work Performance	.07	.02	-.01	.08	.34^{b}	-.04	----									
8. Satisfaction with the MSF Process	.02	-.05	-.04	.15^{a}	.12	-.08	.62^{c}	----								
9. Acceptance of Manager Feedback	.41^{c}	.17	.07	.05	.03	.06	.33^{c}	.39^{c}	----							
10. Acceptance of Direct Report Feedback	.30^{b}	.38^{c}	.28^{b}	.19	.26^{a}	.14	.27	.38^{a}	.43^{c}	----						
11. Acceptance of Peer Feedback	.22^{c}	.15	.20^{c}	.16^{b}	.05	.12^{a}	.54^{c}	.44^{c}	.38^{c}	.59^{c}	----					
12. Intentions to Improve Work Performance	-.05	.01	-.12†	.24^{c}	.17	-.07	.55^{c}	.48^{c}	.18^{a}	.45^{b}	.31^{c}	----				
13. Gender	.09	.21^{a}	.04	.05	.09	-.05	.03	-.03	-.02	.03	-.11^{a}	-.05	----			
14. Age (in years)	-.05	.05	-.07	.09	-.02	.02	-.03	.01	.01	-.01	.05	.02	-.16^{b}	----		
15. Organizational Tenure (in years)	.03	-.02	-.05	-.03	.10	-.02	-.09	-.05	.05	.02	.03	-.02	-.13^{a}	.38^{c}	----	
16. Education Level	.14^{a}	.12	.07	.01	-.06	-.02	-.09	-.17^{a}	-.05	.12	-.05	-.07	-.14^{b}	-.06	-.18^{c}	----

Note: N=39 - 397 due to missing data.
Gender coded: 1=Male, 2=Female.
Education level coded: 1=high school degree or less, 2=some college education, 3= Bachelors degree, 4=Masters degree or higher.
Age and Organizational Tenure coded in terms of years.
†= $p \leq .10$ ^{a}= $p \leq .05$ ^{b}= $p \leq .01$ ^{c}= $p \leq .001$

higher than manager ratings and direct report ratings. Self-ratings did not significantly differ from any of the sources. Examination of the correlation table (Table 7) shows that self-ratings were not significantly correlated with manager, direct report, or peer ratings. However, significant correlations were revealed between manager ratings and direct report ratings ($r=.49$, $p<.001$), manager ratings and peer ratings ($r=.39$, $p<.001$), and direct report ratings and peer ratings ($r=.39$, $p<.001$).

As can be seen in Table 6, feedback recipients indicated the greatest acceptance of feedback from direct reports ($M=4.08$, $SD=.60$), followed by peers ($M=4.05$, $SD=.54$), and managers ($M=3.80$, $SD=.83$). The means for direct report rating agreement index ($M=59.21$, $SD=23.56$) and peer rating agreement index ($M=55.37$, $SD=17.50$) indicated moderate within-source rating agreement, with slightly higher agreement among direct report raters.

Hypothesis Tests

Results of hypothesis testing are presented in the following sections and are organized by type of reaction to feedback (affective, cognitive, and behavioral).

Affective Reaction to MSF

Hypothesis 1a: Manager ratings will be positively related to feedback recipients' satisfaction with the MSF process.

Hypothesis 1b: Direct report ratings will be positively related to feedback recipients' satisfaction with the MSF process.

Hypothesis 1c: Peer ratings will be positively related to feedback recipients' satisfaction with the MSF process.

Inspection of the correlation table (Table 7) revealed that the correlations between manager ratings and satisfaction with the MSF process ($r= .02$, $p>.05$), direct report ratings and satisfaction with the MSF process ($r= -.05$, $p>.05$), and peer ratings and

satisfaction with the MSF process ($r=-.04$, $p>.05$) were all non-significant. Thus, Hypothesis 1a, 1b, and 1c were not supported. In the current study, ratings from managers, direct reports, and peers were not significantly related to feedback recipients' satisfaction with the MSF process.

Cognitive Reactions to MSF

Hypothesis 2a: Manager ratings will be positively related to feedback recipients' acceptance of manager feedback.

Hypothesis 2b: Direct report ratings will be positively related to feedback recipients' acceptance of direct report feedback.

Hypothesis 2c: Peer ratings will be positively related to feedback recipients' acceptance of peer feedback.

Inspection of the Table 7 revealed that the correlations between manager ratings and acceptance of manager feedback ($r=.41$, $p<.001$), direct report ratings and acceptance of direct report feedback ($r=.38$, $p<.001$), and peer ratings and acceptance of peer feedback ($r=.20$, $p<.001$) were all significant. Thus, Hypothesis 2a, 2b, and 2c were supported. In the current study, MSF ratings were significantly related to feedback recipients' acceptance of feedback.

Although the current study only hypothesized main effects for other ratings to be related to acceptance of feedback, previous research has suggested that such reactions may be a function of not only other ratings, but also the degree of discrepancy between self-ratings and other ratings (cf. Sweeney & Wells, 1990). Therefore, following the recommendations of Edwards (1994) hierarchical multiple regression procedures which included self-ratings, other ratings, and higher-order terms were utilized to adequately test for all possible relationships between MSF ratings and acceptance of feedback.

Table 8 presents the regression results for Hypothesis 2a which predicted that feedback recipients' acceptance of manager feedback would be positively related to ratings received from managers. The first step of the regression was significant (R^2=.141, p<.001) and revealed that manager ratings were significantly and positively related to feedback recipients' acceptance of manager feedback (β=.37, p <.001). Moreover, when the higher-order terms were added in the second step, a significant amount of additional variance was accounted for (ΔR^2 =.116, p <.001). Manager ratings squared (β= -.30, p <.001), self-ratings squared (β=.14, p =.026), and the interaction between manager ratings and self-ratings (β=.17, p =.006) were all significantly related to acceptance of manager feedback. The significant increase in R^2 in step two indicated a nonlinear relationship between acceptance of manager feedback, self-ratings, and manager ratings. Edwards (1994) suggested interpreting the surface that corresponds to the regression equation. The corresponding response surface is present in Figure 9.

As illustrated in Figure 9, when self-ratings and manager ratings were in agreement and high, acceptance was very high. When self-ratings and manager ratings were in agreement and low, acceptance was low. Acceptance was lowest when manager ratings were low and self-ratings were very high (largest negative discrepancy). Conversely, when self-ratings were low and manager ratings were very high (largest positive discrepancy) acceptance was moderate. It appears that self-ratings most strongly influenced acceptance at lower levels of manager ratings. That is, when manager ratings were 1 to 2 SD below the mean, acceptance of feedback decreased as self-ratings increased. However, when manager ratings were high, the amount of discrepancy between self-ratings and manager ratings did not have as strong of a relationship with

Table 8. Regressions of Cognitive Reactions on Manager Ratings and Self-Ratings

Dependent Variable	Model	Independent Variables	β	t	Significance
Acceptance of Manager Feedback					
	1	Manager Ratings	.37	5.72	<.001
		Self-Ratings	.03	.48	.635
	2	Manager Ratings	.44	7.12	<.001
		Self-Ratings	.02	.30	.764
		Manager Ratings X Self- Ratings	.17	2.75	.006
		Manager Ratings X Manager Ratings	-.30	-4.83	<.001
		Self-Ratings X Self-Ratings	.14	2.24	.026

Note. N=206. β is the standardized regression coefficient. All predictor variables were centered prior to analyses.
Model 1: $F(2,203)=16.70$, $R^2=.141$, $\Delta R^2=.141$, $p<.001$
Model 2: $F(5,200)=13.87$, $R^2=.258$ $\Delta R^2=.116$, $p<.001$

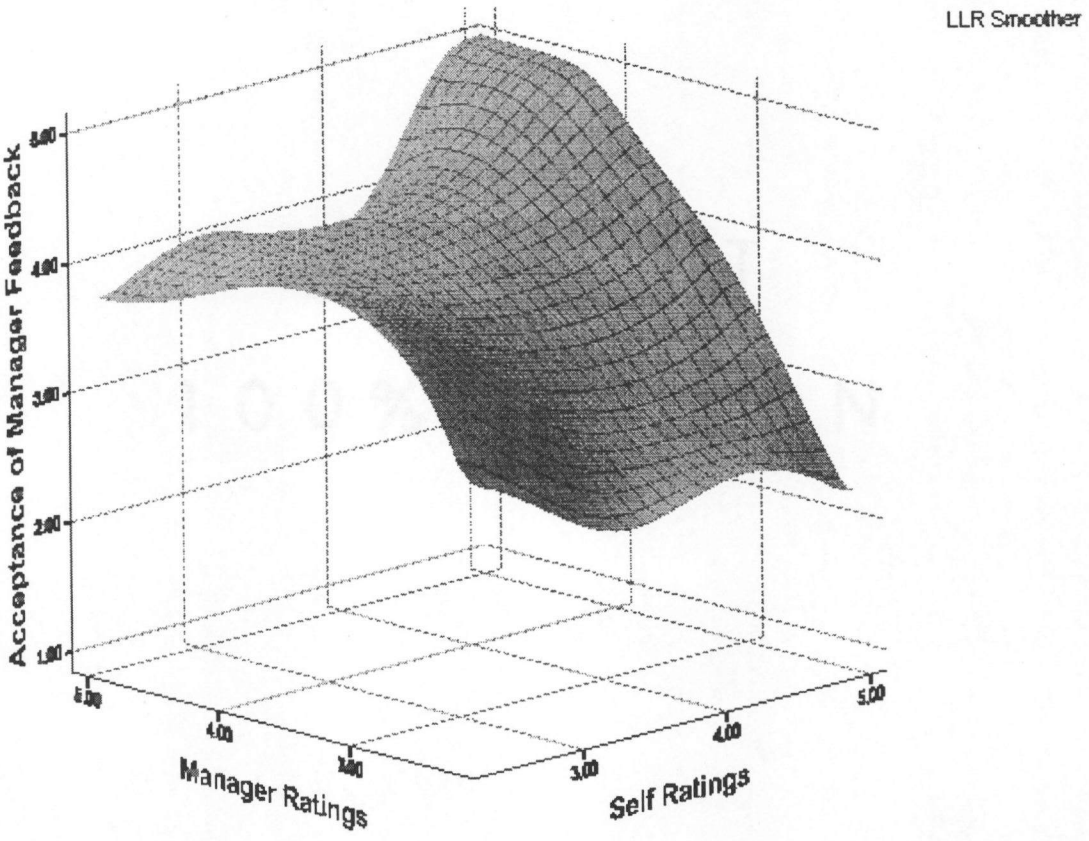


Figure 9: Results of Acceptance of Manager Feedback with Manager Ratings and Self-Ratings

acceptance. In general, feedback recipients appear to be accepting of high manager feedback, regardless of their self-ratings. However, at lower levels of manager ratings, discrepancy between self-ratings and manager ratings was associated with feedback acceptance in that as self-ratings increased, feedback acceptance decreased.

The hierarchical regression results for Hypothesis 2b predicting that direct report ratings would be positively related to acceptance of direct report feedback are presented in Table 9. The first step was significant (R^2=.219, p<.001). Direct report ratings were significantly and positively related to recipients' acceptance of direct report feedback (β=.43, p <.001) supporting the hypothesis. The addition of higher-order terms in the second step did not result in a significant R^2 increment, therefore model testing was terminated, and the results of step one will be interpreted.

Hypothesis 2c predicted that peer ratings would be positively related to acceptance of peer feedback. Table 10 presents the results of Hypothesis 2c. Step one was significant (R^2=.055, p<.001), revealing a positive relationship between peer ratings and acceptance of peer feedback (β=.17, p = .004) supporting the hypothesis. In addition, self-rating was significantly related to acceptance of peer feedback (β=.17, p = .003). Addition of the higher-order terms in step two did not account for additional variance in acceptance. Thus, step one of the equation will be interpreted.

In Hypotheses 3a and 4a, a positive relationship between within-source rating agreement and feedback acceptance (direct report and peer) was predicted. Furthermore, in Hypotheses 3b and 4b, an interaction between within-source rating agreement and feedback acceptance (direct report and peer) was hypothesized predicting a stronger relationship between acceptance of feedback and within-source rating agreement when

Table 9. Regressions of Cognitive Reactions on Direct Report Ratings and Self-Ratings

Dependent Variable	Model	Independent Variables	β	t	Significance
Acceptance of Direct Report Feedback					
	1	Direct Report Ratings	.43	3.98	<.001
		Self-Ratings	.16	1.52	.134
	2	Direct Report Ratings	.41	3.56	<.001
		Self-Ratings	.17	1.56	.123
		Direct Report Rating X Self-Ratings	.06	.54	.595
		Direct Report Ratings X Direct Report Ratings	-.05	-.44	.664
		Self-Rating X Self-Ratings	-.01	-.04	.972

Note. N=71. β is the standardized regression coefficient. All predictor variables were centered prior to analyses.
Model 1: $F(2,68)=9.54$, $R^2=.219$, $\Delta R^2=.219$, $p<.001$
Model 2: $F(5,65)=3.75$, $R^2=.224$, $\Delta R^2=.005$, $p=.940$

Table 10. Regressions of Cognitive Reactions on Peer Ratings and Self-Ratings

Dependent Variable	Model	Independent Variables	β	t	Significance
Acceptance of Peer Feedback					
	1	Peer Ratings	.17	2.90	.004
		Self-Ratings	.17	2.97	.003
	2	Peer Ratings	.19	3.04	.003
		Self-Ratings	.18	3.10	.002
		Peer Ratings X Self-Ratings	.03	.44	.661
		Peer Ratings X Peer Ratings	.06	.92	.359
		Self-Ratings X Self-Ratings	-.06	-1.059	.295

Note. N=281. β is the standardized regression coefficient. All predictor variables were centered prior to analyses.
Model 1: $F(2,278)=8.01$, $R^2=.055$, $\Delta R^2=.055$, $p<.001$
Model 2: $F(5,275)=3.64$, $R^2=.062$, $\Delta R^2< .008$, $p=.531$

MSF ratings were low. Hypotheses 3a and 4a were tested by examining correlation coefficients from Table 7 and Hypotheses 3b and 4b were tested with hierarchical regression analyses. The results for Hypotheses 3b and 4b are presented in Table 11 and Table 12, respectively.

> Hypothesis 3a: Direct report rating agreement will be positively related to feedback recipients' acceptance of direct report feedback.

Inspection of Table 7 revealed that the correlation between direct report rating agreement and acceptance of direct report feedback was significant (r=.26, p <.05), supporting Hypothesis 3a.

> Hypothesis 3b: There will be an interaction between direct report ratings and direct report rating agreement such that the relationship between direct report rating agreement and acceptance of direct report feedback will be more positive for feedback recipients receiving lower ratings.

The analysis for Hypothesis 3b is presented in Table 11. Step one of the regression analysis was significant (R^2=.174, p<.001) and revealed a significant positive relationship between direct report ratings and recipients' acceptance of direct report feedback (β = .34, p =.001) and a marginally significant positive relationship between direct report rating agreement and acceptance of direct report feedback (β=.17, p =.082). However, contrary to Hypothesis 3b, adding the interaction term between direct report rating agreement and direct report ratings did not result in a significant increase in explained variance (ΔR^2<.001, p=.99). The interaction between direct report rating agreement and favorability of direct report ratings received was not related to acceptance of direct report feedback.

Table 11. Moderator Analysis: Regressions of Cognitive Reactions on Direct Report Ratings and Direct Report Rating Agreement

Dependent Variable	Model	Independent Variables	β	t	Significance
Acceptance of Direct Report Feedback					
	1	Direct Report Ratings	.34	3.53	.001
		Direct Report Rating Agreement	.17	1.76	.082
	2	Direct Report Ratings	.34	3.51	.001
		Direct Report Rating Agreement	.17	1.62	.110
		Direct Report Ratings X Direct Report Rating Agreement	<-.01	-.02	.985

Note. N=97. β is the standardized regression coefficient. All predictor variables were centered prior to analyses.
Model 1: $F(2,94)=9.92$, $R^2=.174$, $\Delta R^2=.174$, $p<.001$
Model 2: $F(3,93)=6.54$, $R^2=.174$, $\Delta R^2<.001$, $p=.985$

Table 12. Moderator Analysis: Regressions of Cognitive Reactions on Peer Ratings and Peer Rating Agreement

Dependent Variable	Model	Independent Variables	β	t	Significance
Acceptance of Peer Feedback					
	1	Peer Ratings	.18	3.45	.001
		Peer Rating Agreement	.08	1.61	.109
	2	Peer Ratings	.18	3.50	.001
		Peer Rating Agreement	.08	1.46	.145
		Peer Ratings X Peer Rating Agreement	-.03	-.59	.556

Note. N=374. β is the standardized regression coefficient. All predictor variables were centered prior to analyses.
Model 1: $F(2,371)=8.80$, $R^2=.045$, $\Delta R^2=.045$, $p<.001$
Model 2: $F(3,370)=5.97$, $R^2=.046$, $\Delta R^2=.001$, $p=.556$

Hypothesis 4a: Peer rating agreement will be positively related to feedback recipients' acceptance of peer feedback.

Hypotheses 4a and 4b were tested similarly as described above. Inspection of Table 7 revealed that the correlation between peer rating agreement and acceptance of peer feedback (r=.12, p <.05) was significant, supporting Hypothesis 4a.

Hypothesis 4b: There will be an interaction between peer ratings and peer rating agreement such that the relationship between peer rating agreement and acceptance of peer feedback will be more positive for feedback recipients receiving lower ratings.

As shown in Table 12, step one of the regression analysis was significant (R^2=.045, p<.001) and revealed a significant positive relationship between peer ratings and recipients' acceptance of peer feedback (β = .18, p =.001). Additionally, the relationship between peer rating agreement and acceptance of peer feedback approached significance (β=.08, p =.109). However, in contradiction to Hypothesis 4b, adding the interaction term between agreement and ratings in step two did not result in a significant increase in explained variance (ΔR^2=.001, p=.556). The interaction between peer rating agreement and favorability of peer ratings received was not related to acceptance of peer feedback.

Behavioral Reactions to MSF

In Hypotheses 5a, 6a, 7a it was predicted that the discrepancy between other ratings and the standard of high performance would be significantly related to intentions to improve work performance. Specially, a negative relationship between other ratings and intentions to improve work performance was proposed. These hypotheses were tested by examining correlation coefficients in Table 7. Furthermore, Hypotheses 5b, 6b, and 7b predicted that the discrepancy between self-ratings and other ratings would be

positively related to intentions to improve work performance. These hypotheses were tested utilizing hierarchical multiple regression procedures which included self-ratings, other ratings, and higher-order terms (cf. Edwards, 1994).

> Hypothesis 5a: Manager ratings will be negatively related to feedback recipients' intentions to improve work performance.

Examination of Table 7 revealed a non-significant relationship between manager ratings and intentions to improve work performance (r=-.05, p >.05). Therefore, support was not found for Hypothesis 5a.

> Hypothesis 5b: Discrepancy between self-ratings and manager ratings will be positively related to feedback recipients' intentions to improve work performance.

Table 13 displays the results of the regression analysis utilized to test Hypothesis 5b. Although the first step of the model accounted for significant variance (R^2 = .063, p=.007), only self-ratings had a significant main effect on intentions to improve work performance (β = .24, p = .003). Adding the higher-order terms (Hypothesis 5b) in step two did not account for additional variance in intentions to improve work performance (ΔR^2 = .010, p = .645), therefore model testing was terminated. Both Hypotheses 5a and 5b were not supported.

> Hypothesis 6a: Direct report ratings will be negatively related to feedback recipients' intentions to improve work performance.

Hypotheses 6a and 6b were tested in the same manner as Hypothesis 5a and 5b. Examination of Table 7 revealed a non-significant relationship between direct report ratings and intentions to improve work performance (r=.01, p >.05). Therefore, support was not found for Hypothesis 6a.

Table 13. Regressions of Behavioral Reactions on Manager Ratings and Self-Ratings

Dependent Variable	Model	Independent Variables	β	t	Significance
Intentions to Improve Work Performance					
	1	Manager Ratings	-.09	-1.10	.273
		Self-Ratings	.24	3.03	.003
	2	Manager Ratings	-.10	-1.21	.229
		Self-Ratings	.25	3.12	.002
		Manager Ratings X Self-Ratings	-.01	-.16	.873
		Manager Ratings X Manager Ratings	.09	1.15	.252
		Self-Ratings X Self-Ratings	.03	.39	.701

Note. N=157. β is the standardized regression coefficient. All predictor variables were centered prior to analyses.
Model 1: $F(2,154)=5.14$, $R^2=.063$, $\Delta R^2=.063$, $p=.007$
Model 2: $F(5,151)=2.37$, $R^2=.073$, $\Delta R^2=.010$, $p=.645$

Hypothesis 6b: Discrepancy between self-ratings and direct report ratings will be positively related to feedback recipients' intentions to improve work performance.

As shown in Table 14, step one of the model did not account for significant variance in the dependent variable (R^2=.016, p=.804). Furthermore, addition of the higher-order terms in step two did not account for significant variance (ΔR^2 = .126, p=.340). Thus, support was also not found for Hypothesis 6b. The degree of discrepancy between direct report ratings and self-ratings was unrelated to acceptance of direct report feedback.

Hypothesis 7a: Peer ratings will be negatively related to feedback recipients' intentions to improve work performance.

Examination of Table 7 revealed a marginally significant negative relationship between peer ratings and intentions to improve work performance (r= -.12, p<.10).

Hypothesis 7b: Discrepancy between self-ratings and peer ratings will be positively related to feedback recipients' intentions to improve work performance.

The regression results for Hypothesis 7b are presented in Table 15. Step one of the regression model was significant (R^2=.094, p<.001). Both peer ratings (β =-.20, p=.006) and self-ratings (β =.20, p=.006) were significantly related to intentions to improve work performance. Addition of the higher-order terms (Hypothesis 7b) in step two did not explain a significant increment in variance (ΔR^2=.006, p=.764). The results of this analysis revealed a significant negative relationship between peer ratings and intentions to improve work performance, and a significant non-hypothesized positive relationship between self-ratings and intentions to improve work performance. However, contrary to Hypothesis 7b, evidence of a significant interaction between self-ratings and peer ratings was not found.

Table 14. Regressions of Behavioral Reactions on Direct Report Ratings and Self-Ratings

Dependent Variable	Model	Independent Variables	β	t	Significance
Intentions to Improve Work Performance					
	1	Direct Report Ratings	.00	-.02	.998
		Self-Ratings	.13	.66	.512
	2	Direct Report Ratings	-.33	-1.23	.232
		Self-Ratings	.07	.34	.735
		Direct Report Ratings X Self-Ratings	.06	.29	.771
		Direct Report Ratings X Direct Report Ratings	.48	1.68	.106
		Self-Ratings X Self-Ratings	.22	1.07	.297

Note. N=30. β is the standardized regression coefficient. All predictor variables were centered prior to analyses.
Model 1: $F(2,27)=.221$, $R^2=.016$, $\Delta R^2=.016$, $p=.804$
Model 2: $F(5,24)=.794$, $R^2=.142$, $\Delta R^2=.126$, $p=.340$

Table 15. Regressions of Behavioral Reactions on Peer Ratings and Self-Ratings

Dependent Variable	Model	Independent Variables	β	t	Significance
Intentions to Improve Work Performance					
	1	Peer Ratings	-.20	-2.79	.006
		Self-Ratings	.20	2.81	.006
	2	Peer Ratings	-.22	-2.87	.005
		Self-Ratings	.20	2.79	.006
		Peer Ratings X Self-Ratings	.03	.33	.740
		Peer Ratings X Peer Ratings	.02	.24	.808
		Self-Rating X Self-Ratings	-.07	-.98	.328

Note. N=179. β is the standardized regression coefficient. All predictor variables were centered prior to analyses.
Model 1: $F(2,176)=9.15$, $R^2=.094$, $\Delta R^2=.094$, $p<.001$
Model 2: $F(5,173)=3.85$, $R^2=.100$, $\Delta R^2=.006$, $p=.764$

Hypothesis 8a: Efficacy to improve work performance will be positively related to feedback recipients' intention to improve work performance.

Hypothesis 8b: There will be an interaction between manager ratings and efficacy to improve work performance such that the relationship between ratings and intentions to improve work performance will be more negative for feedback recipients reporting higher efficacy to improve work performance.

Hypothesis 8c: There will be an interaction between direct report ratings and efficacy to improve work performance such that the relationship between ratings and intentions to improve work performance will be more negative for feedback recipients reporting higher efficacy to improve work performance.

Hypothesis 8d: There will be an interaction between peer ratings and efficacy to improve work performance such that the relationship between ratings and intentions to improve work performance will be more negative for feedback recipients reporting higher efficacy to improve work performance.

Hypothesis 8a predicted that there would be a positive relationship between efficacy to improve work performance and intentions to improve work performance. Examination of the correlation coefficient from Table 7 ($r=.55$, $p<.001$) provides support for the hypothesis.

Hypotheses 8b, 8c, 8d proposed that the interaction between efficacy to improve work performance and MSF ratings (managers, direct reports, and peers) would significantly influence intentions to improve work performance. The results of the regression analyses are presented in Tables 16-18. For each regression equation, the change in R^2 by adding the interaction term (efficacy x ratings) was not significant. The increments in R^2 were .002 (Hypothesis 8b), .004 (Hypothesis 8c), and <.001 (Hypothesis 8d). Thus, Hypotheses 8b, 8c, and 8d were not supported; efficacy to improve work performance did not moderate the relationship of manager ratings, direct report ratings, or peer ratings, with intentions to improve work performance.

Table 16. Moderator Analysis: Regressions of Behavioral Reactions on Manager Ratings and Efficacy to Improve Work Performance

Dependent Variable	Model	Independent Variables	β	t	Significance
Intentions to Improve Work Performance					
	1	Manager Ratings	-.10	-1.75	.082
		Efficacy to Improve Work Performance	.58	9.70	<.001
	2	Manager Ratings	-.10	-1.74	.083
		Efficacy to Improve Work Performance	.57	9.46	<.001
		Manager Ratings X Efficacy to Improve Work Performance	.05	.80	.422

Note. N=193. β is the standardized regression coefficient. All predictor variables were centered prior to analyses.
Model 1: $F(2,190)=47.61$, $R^2=.334$, $\Delta R^2=.334$, $p<.001$
Model 2: $F(3,189)=31.90$, $R^2=.336$, $\Delta R^2=.002$, $p<.422$

Table 17. Moderator Analysis: Regressions of Behavioral Reactions on Direct Report Ratings and Efficacy to Improve Work Performance

Dependent Variable	Model	Independent Variables	β	t	Significance
Intentions to Improve Work Performance					
	1	Direct Report Ratings	-.01	-.022	.983
		Efficacy to Improve Work Performance	.45	3.25	.002
	2	Direct Report Ratings	-.04	-.24	.809
		Efficacy to Improve Work Performance	.43	2.96	.005
		Direct Report Ratings X Efficacy to Improve Work Performance	.07	.44	.665

Note. N=44. β is the standardized regression coefficient. All predictor variables were centered prior to analyses.
Model 1: $F(2,41)=5.28$, $R^2=.205$, $\Delta R^2=.205$, $p=.009$
Model 2: $F(3,40)=3.51$, $R^2=.209$, $\Delta R^2=.004$, $p=.665$

Table 18. Moderator Analysis: Regressions of Behavioral Reactions on Peer Ratings and Efficacy to Improve Work Performance

Dependent Variable	Model	Independent Variables	β	t	Significance
Intentions to Improve Work Performance					
	1	Peer Ratings	-.14	-2.43	.016
		Efficacy to Improve Work Performance	.55	9.88	<.001
	2	Peer Ratings	-.14	-2.39	.018
		Efficacy to Improve Work Performance	.55	9.86	<.001
		Peer Ratings X Efficacy to Improve Work Performance	<-.01	-.05	.958

Note. N=222. β is the standardized regression coefficient. All predictor variables were centered prior to analyses.
Model 1: $F(2,219)=51.88$, $R^2=.321$, $\Delta R^2=.321$, $p<.001$
Model 2: $F(3,218)=34.43$, $R^2=.321$, $\Delta R^2<.001$, $p<.958$

In addition, based on the non-hypothesized significant relationship between self-ratings and intentions to improve work performance, a supplemental analysis was run to test for a potential interaction between self-ratings and efficacy to improve work performance in predicting intentions to improve work performance. As can be seen in Table 19, addition of the interaction term (self-ratings x efficacy) led to a significant increment in R^2 (ΔR^2=.023, p=.014).

To better understand the nature of the interaction between self-ratings and efficacy to improve work performance, the surface corresponding to the regression equation was plotted (cf. Edwards, 1994) and is presented in Figure 10. Examination of the figure indicated that feedback recipients' intentions to improve work performance were highest when efficacy to improve work performance was high and self-ratings were high. When self-ratings were low, regardless of efficacy to improve work performance, intentions to improve work performance appear to be moderate (between 3 and 3.5). Intentions to improve work performance appear to be lowest when efficacy to improve work performance was low and self-ratings were high. Thus, it appears that the relationship between self-ratings and intentions to improve work performance was influenced by efficacy to improve work performance. When efficacy to improve work performance was high, there was a positive relationship between self-ratings and intentions to improve work performance. When efficacy to improve work performance was low, the relationship between self-ratings and intentions to improve work performance became negative.

Table 19. Supplemental Moderator Analysis: Regressions of Behavioral Reactions on Self-Ratings and Efficacy to Improve Work Performance

Dependent Variable	Model	Independent Variables	β	t	Significance
Intentions to Improve Work Performance					
	1	Self-Ratings	.20	3.12	.002
		Efficacy to Improve Work Performance	.51	8.10	<.001
	2	Self-Ratings	.21	3.34	.001
		Efficacy to Improve Work Performance	.49	7.94	<.001
		Self-Ratings X Efficacy to Improve Work Performance	.15	2.48	.014

Note. N=181. β is the standardized regression coefficient. All predictor variables were centered prior to analyses.
Model 1: $F(2,178)=39.98$, $R^2=.310$, $\Delta R^2=.310$, $p<.001$
Model 2: $F(3,177)=29.46$, $R^2=.333$, $\Delta R^2=.023$, $p=.014$

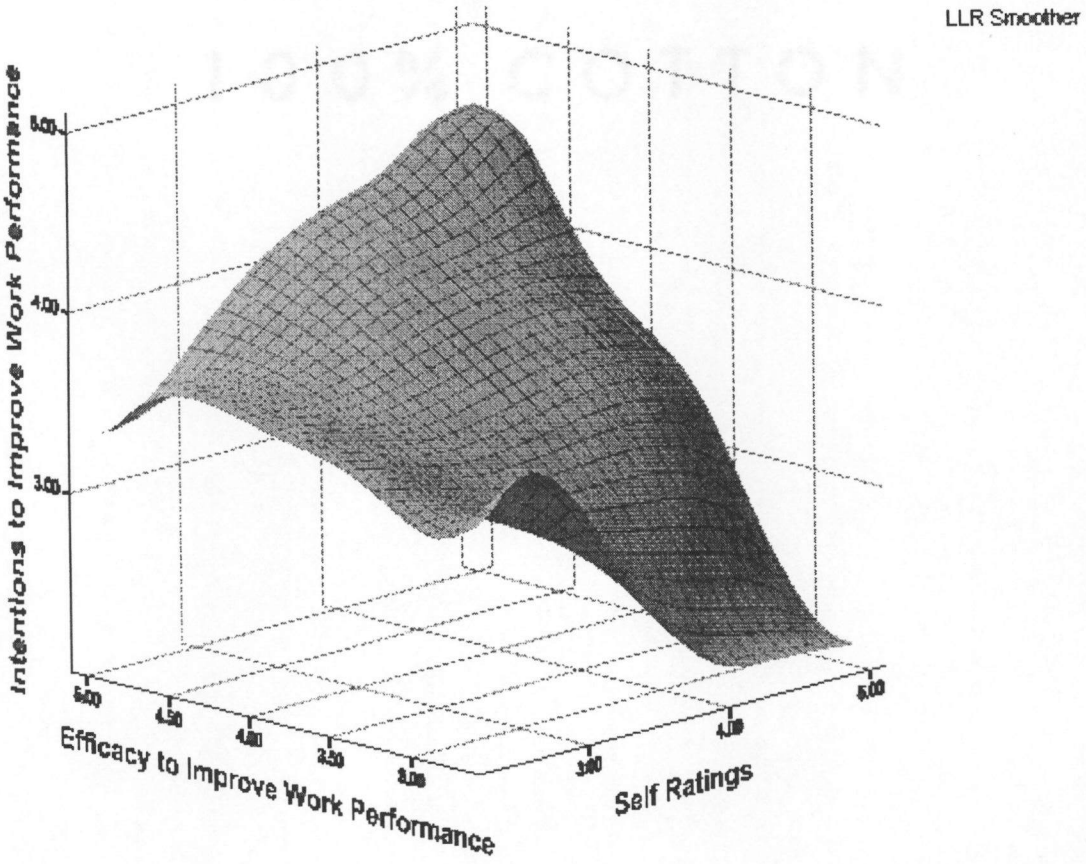


Figure 10: Results of Intentions to Improve Work Performance with Efficacy to Improve Work Performance and Self-Ratings

Summary

Results of the present study provide partial support for the heuristic illustrated in Figure 1. Table 20 summarizes the results of the hypothesis testing. In Table 20, each hypothesis is listed, followed by whether support was found for the proposed relationship. Table 7 presents the correlation coefficients and Tables 8 - 19 provide hierarchical regression information for hypotheses testing. When reviewing the regression results, it is useful to examine the size and sign of the standardized regression coefficients (βs) to ascertain the direction and strength of the relationships between variables.

MSF ratings were not related to feedback recipient's affective reactions (satisfaction with the MSF process). Other ratings (managers, direct reports, peers) and self-ratings were significantly related to feedback recipients' cognitive reactions. Quadratic relationships for both manager ratings and self-ratings and an interaction between manager ratings and self-ratings were revealed as significantly related to acceptance of manager feedback. Peer ratings and self-ratings were significantly related to acceptance of peer feedback. Direct report ratings were significantly related to acceptance of direct report feedback.

Within-source rating agreement among direct reports was significantly related to feedback recipients' acceptance of direct report feedback, and within-source rating agreement among peers was significantly related to acceptance of peer feedback. The proposed moderating effects between within-source rating agreement and ratings (direct report and peer) in predicting feedback acceptance were not present.

Table 20. Summary of Hypothesis Testing

Hypothesis	Evidence
Affective Reactions	
Hypothesis 1a: Manager ratings will be positively related to feedback recipients' satisfaction with the MSF process.	Not Supported
Hypothesis 1b: Direct report ratings will be positively related to feedback recipients' satisfaction with the MSF process.	Not Supported
Hypothesis 1c: Peer ratings will be positively related to feedback recipients' satisfaction with the MSF process.	Not Supported
Cognitive Reactions	
Hypothesis 2a: Manager ratings will be positively related to feedback recipients' acceptance of manager feedback.	Supported; higher order effects were also observed
Hypothesis 2c: Direct report ratings will be positively related to feedback recipients' acceptance of direct report feedback.	Supported
Hypothesis 2c: Peer ratings will be positively related to feedback recipients' acceptance of peer feedback.	Supported
Hypothesis 3a: Direct report rating agreement will be positively related to feedback recipients' acceptance of direct report feedback.	Supported
Hypothesis 3b: There will be an interaction between direct report ratings and direct report rating agreement such that the relationship between direct report rating agreement and acceptance of direct report feedback will be more positive for feedback recipients receiving lower ratings.	Not Supported
Hypothesis 4a: Peer rating agreement will be positively related to feedback recipients' acceptance of peer feedback.	Supported
Hypothesis 4b: There will be an interaction between peer ratings and peer rating agreement such that the relationship between peer rating agreement and acceptance of peer feedback will be more positive for feedback recipients receiving lower ratings.	Not Supported
Behavioral Reactions	
Hypothesis 5a: Manager ratings will be negatively related to feedback recipients' intentions to improve work performance.	Not Supported
Hypothesis 5b: Discrepancy between self-ratings and manager ratings will be positively related to feedback recipients' intentions to improve work performance.	Not Supported

Table 20. Summary of Hypothesis Testing (continued)

Hypothesis	Evidence
Hypothesis 6a: Direct report ratings will be negatively related to feedback recipients' intentions to improve work performance.	Not Supported
Hypothesis 6b: Discrepancy between self-ratings and direct report ratings will be positively related to feedback recipients' intentions to improve work performance.	Not Supported
Hypothesis 7a: Peer ratings will be negatively related to feedback recipients' intentions to improve work performance.	Marginally Supported
Hypothesis 7b: Discrepancy between self-ratings and peer ratings will be positively related to feedback recipients' intentions to improve work performance.	Not Supported
Hypothesis 8a: Efficacy to improve work performance will be positively related to feedback recipients' intentions to improve work performance.	Supported
Hypothesis 8b: There will be an interaction between manager ratings and efficacy to improve work performance such that the relationship between manager ratings and intentions to improve work performance will be more negative for feedback recipients reporting higher efficacy to improve work performance.	Not Supported
Hypothesis 8c: There will be an interaction between direct report ratings and efficacy to improve work performance such that the relationship between direct report ratings and intentions to improve work performance will be more negative for feedback recipients reporting higher efficacy to improve work performance.	Not Supported
Hypothesis 8d: There will be an interaction between peer ratings and efficacy to improve work performance such that the relationship between peer ratings and intentions to improve work performance will be more negative for feedback recipients reporting higher efficacy to improve work performance.	Not Supported

Correlation coefficients revealed that manager ratings and direct report ratings were not significantly related to intentions to improve work performance and that peer ratings were marginally significantly related to intentions to improve work performance. Furthermore, discrepancies between MSF ratings and self-ratings were not significantly related to intentions to improve work performance.

Efficacy to improve work performance was significantly related to intentions to improve work performance. Efficacy, however, did not moderate the relationships between MSF ratings (managers, direct reports, and peers) and intentions. In contrast, a non-hypothesized significant interaction was found between self-ratings and efficacy to improve work performance in predicting intentions to improve work performance.

CHAPTER V

DISCUSSION

In recent years, the number of organizations implementing multisource feedback (MSF) programs has increased dramatically (cf. Smither, London, Vasilopoulos, Reilly, Millsap, & Salvemini's, 1995; Van Velsor & Wall, 1992). This has highlighted the need for more research to fully examine the complex process of MSF systems. The majority of research to date has focused on examining the psychometric properties of MSF systems. In general, it appears that MSF instruments have good internal consistency and reliability (Hazucha et al., 1993), and that ratings from multiple sources are often more reliable and valid than feedback from a single rater (e.g., supervisor) (cf. Wohlers & London, 1989).

Although such research provides valuable information, studies on the psychometric properties of MSF systems do not answer the critical question as to how employees respond to the feedback, and whether they make efforts to improve their performance after receiving the feedback (Reilly et al., 1996). Since the ultimate goal of most MSF programs is performance improvement, research examining feedback recipients' reactions to MSF is necessary.

Much of the previous research on recipients' reactions to feedback has utilized Ilgen et al.'s (1979) sequential feedback model for making predictions and interpreting findings. Several researchers have interpreted a positive relationship between feedback favorableness and acceptance of feedback as evidence that MSF programs may not be beneficial in improving performance of below average employees. Based on self-evaluation and self-regulation literature, the current study proposed that researchers

should examine multiple types of reactions to more fully understand the process by which employees use, or do not use, feedback to make behavior modifications. Drawing from several fields of research, the present study attempted to delineate a coherent framework by classifying reactions to feedback into three categories. This was based in part on research demonstrating that individuals may exhibit more than one type of reaction to feedback (Moreland & Sweeney, 1984; Shrauger, 1975; Sweeney & Wells, 1990) and that these reactions may even be contradictory at times (Balcazar et al., 1986).

The current study distinguished between affective, cognitive, and behavioral reactions to feedback and sought to identify the relationship of MSF ratings to each. In this chapter, the findings pertinent to the hypothesized relationships are discussed. This is followed by a discussion of the current study's limitations. Next, theoretical and practical implications are discussed, followed by suggestions for future research.

Discussion of Hypothesis Tests

Results of hypothesis testing are presented in this section, and are organized by type of reaction being assessed. Throughout the discussion, the primary focus is on statistically significant results. However, for some analyses non-significant results are briefly discussed in an attempt to understand why certain variables may have failed to be related to the outcome variable.

Affective Reactions to MSF

The first hypothesis predicted a significant positive relationship between feedback favorableness and feedback recipients' satisfaction with the MSF process. The hypothesis was based on research demonstrating that individuals desire to be viewed favorably and make efforts to maintain a positive self image (cf. Greenwald, 1980; Tesser

& Parlhus, 1983). Citing self-enhancement as an explanation, previous researchers reported that individuals who receive poor performance feedback are likely to indicate dissatisfaction with the process (Baumgardner et al., 1989) and may derogate the entire system in an effort to discredit the feedback (Pearce & Porter, 1986).

Hypotheses 1a-1c tested the proposition that feedback favorableness and satisfaction were positively related, but the hypotheses were not supported. MSF ratings from managers, direct reports, and peers were not significantly related to satisfaction with the MSF process. Perhaps it would be more appropriate to examine MSF process components rather than the favorability of ratings received when trying to identify correlates of satisfaction with the MSF program. Dipboye and dePontbriand (1981) reported that program satisfaction is influenced by the ability to contribute to the process, job relevance of the appraisal instrument, and the introduction of performance improvement processes. Other potential influences may include satisfaction with the facilitators' presentation and explanation of the information, perceptions of fairness in the process, and the timelines of feedback. Given that satisfaction with the MSF process demonstrated a significant correlation with intentions to improve work performance ($r=.48$, $p<.001$), future research should seek to better understand the factors that are related to feedback recipients' affective reactions.

Cognitive Reactions to MSF

The second set of hypotheses (Hypotheses 2a-2c) predicted significant positive relationships between MSF ratings and feedback recipients' acceptance of feedback. Consistent with previous research (Facteau et al., 1997; Moreland & Sweeney, 1984; Sweeney & Wells, 1990), support was found for Hypotheses 2a, 2b, and 2c. Other

ratings (managers, direct reports, and peers) were significantly and positively related to acceptance of feedback. However, in addition to main effects for other ratings, analyses of acceptance of manager feedback and acceptance of peer feedback revealed additional relationships beyond those hypothesized. Quadratic relationships for both manager ratings and self-ratings, and an interaction between manager ratings and self-ratings, were revealed as significant factors related to acceptance of manager feedback. Analysis regarding acceptance of peer feedback revealed a significant main effect for self-ratings (in addition to the main effect for peer ratings).

The finding that other ratings were significantly and positively related to acceptance of feedback is consistent with previous research supporting a self-enhancement bias. This was revealed in the current study for analyses regarding acceptance of manager feedback, acceptance of direct report feedback, and acceptance of peer feedback. Given results from previous research and the current study, these appear to be quite robust findings. The presence of a significant relationship between self-ratings and acceptance of peer feedback differs however, from previous MSF research findings (i.e., Facteau et al., 1997). In the current study, self-ratings and peer ratings each had a significant relationship with acceptance. As self-ratings and peer ratings increased, acceptance of peer feedback increased. A significant interaction between these two variables was not present, indicating that congruence between them may not be related to recipients' acceptance. Rather, it appears that self-assessment of performance and peers' assessment of performance each were independently related to acceptance of peer feedback. It is important to note that these two variables together only account for five and one half percent of the variance in explaining acceptance. Consequently, although

highly significant, these two variables have a limited association with acceptance of peer feedback. Other variables that may be related to acceptance of peer feedback are discussed later in this section.

Probably the most interesting results regarding cognitive reactions to feedback were the non-hypothesized higher-order terms, which accounted for significant variance in feedback recipients' acceptance of manager feedback. Examination of the corresponding response surface (Figure 9) indicated that congruence among self-ratings and manager ratings was related to acceptance of manager feedback. These findings appear to be contradictory to the results reported in previous MSF research (Facteau et al., 1997) which suggested that self-ratings were not significantly related to feedback acceptance. However, further investigation revealed that Facteau et al's study included in their MSF analyses ratings from peers and direct reports but not managers. Consequently, results of the current study suggest that individuals may react differently to ratings from their managers than from other sources.

Examination of Figure 9 indicated that the results of Hypothesis 2c were similar to those reported by Sweeney and Wells' (1990) study of students' acceptance of feedback from teachers. Sweeney and Wells examined the relationship between exam scores and self-esteem on students' reactions to exam scores. They found that in general, feedback recipients were more accepting of high exam scores than low exam scores. Furthermore, congruence between exam scores and reported self-esteem was significantly related to feedback acceptance. Students with high self-esteem were more accepting of high exam scores and less accepting of low exam scores than were students with low self-esteem. Although the current study included self-ratings rather than self-esteem, the findings are

similar. In the current study, feedback recipients with high self-ratings were more accepting of high manager ratings and less accepting of low manager ratings, than were feedback recipients with low self-ratings. Whereas individuals with low self-ratings were generally accepting of feedback from managers even when it was unfavorable.

In summary, it appears that both self-enhancement and self-consistency effects were related to the acceptance of manager feedback. Self-enhancement effects were more prominent when manager ratings were above average (e.g., feedback recipients typically accepted above average manager ratings regardless of self-ratings). Self-consistency effects were more apparent as manager ratings decreased (e.g., feedback recipients typically reported less acceptance when self-ratings were higher than ratings from managers).

These findings beg the question of why congruence between self and others' ratings were related to acceptance of manager feedback but not to acceptance of peer or direct report feedback. A possible explanation revolves around the fact that most feedback recipients had received previous performance evaluations from their managers (e.g., during traditional performance appraisal processes). Previous research has demonstrated a robust finding that ratings made for administrative processes (such as formal performance appraisals) are typically higher than ratings made for developmental processes (such as MSF) (cf. Cardy & Dobbins, 1994). Thus, feedback recipients were likely to have received lower ratings from their managers in the MSF process than they had received on formal performance appraisals. Furthermore, research has reported that feedback recipients' self-ratings may be influenced by feedback received previously (Ashford, 1989; Atwater et al., 1995; Stone & Stone, 1984). Thus, self-ratings may be

influenced by performance evaluations received from managers during the traditional performance appraisal processes. Consequently, feedback recipients may have expected their self-ratings and manager's ratings to be somewhat in agreement if the manager had given them feedback on former occasions.

If the above inferences are true, feedback recipients who received manager ratings that were discrepant with their self-ratings may have viewed the discrepancy as a sign that their managers were being inconsistent in their feedback, and consequently may have been less accepting of such feedback. Furthermore, it appears that feedback recipients were less "disturbed" by receiving ratings that were higher than their self-perceptions, than by receiving ratings lower than their self-perceptions. That is, lower ratings from managers, particularly lower than self-perceptions, may have produced greater incentives to discount or deny the feedback (Fedor, 1991) than ratings that were more favorable than expected.

Although the current study allows for the documentation and description of the relationship between manager ratings, self-ratings, and feedback acceptance, it does not provide an empirical explanation for why these trends emerged for acceptance of manager feedback yet not for peer and direct report feedback. Future research should attempt to replicate these findings regarding feedback from managers, and determine if they generalize to other rating sources when feedback is provided on a regular basis (e.g., annual implementation of a MSF program).

Cognitive Reactions and Within-Source Rating Agreement

The current study proposed that within-source rating agreement would have a positive relationship with feedback acceptance and would moderate the relationship

between other ratings (direct report and peer raters) and feedback acceptance. Drawing from previous literature (Facteau et al., 1997; Ilgen et al, 1979; Stone & Stone, 1985), it was predicted that feedback recipients would use agreement information to form opinions regarding the ratings made by their subordinates or peers. Ratings that were viewed as more consistent (e.g., high within-source rating agreement) were likely to be perceived as more accurate and therefore result in greater feedback acceptance. Additionally, agreement was proposed to moderate the relationship between ratings and acceptance. Feedback recipients would be less likely to discount or ignore the negative information if there was high agreement among raters of that source (Facteau et al., 1997; London & Smither, 1995). As such, the influence of self-enhancement bias was thought to be diminished when negative ratings were accompanied by high agreement among the raters.

Hypothesis 3a predicted a positive relationship between direct report rating agreement and feedback recipients' acceptance of direct report feedback. Hypothesis 3b predicted that the interaction between direct report ratings and direct report rating agreement would be associated with acceptance of direct report feedback. The current study revealed support for Hypothesis 3a, however Hypothesis 3b was not supported. Based on these findings, it appears that acceptance of direct report feedback increased as agreement among direct report raters increased (within-source rating agreement). However, the amount of agreement among direct report raters did not affect the relationship between direct report ratings and acceptance of direct report feedback. The results suggest that both ratings and the perception of consistency among raters were uniquely related to feedback recipients' acceptance of feedback, but that there was not a

moderated relationship between them. As predicted, high agreement among direct report raters was related to increased feedback acceptance, whereas low agreement among direct report raters was associated with less feedback acceptance.

Interestingly, the findings of the current study are contradictory to the results revealed by Facteau et al. (1997). Their study revealed that direct report rating agreement was not related to feedback acceptance, but that the interaction between direct report rating agreement and direct report ratings was related to feedback acceptance. Facteau et al. plotted the interaction and identified a strong positive relationship between within-source rating agreement and feedback acceptance when ratings from direct reports were very low (i.e., -1.5 SD below the mean). Consequently, the interaction was only significant for a subset of feedback recipients (e.g., individuals receiving very low ratings).

Perhaps the apparent contradiction in results can be explained by examining the means and standard deviations of the variables in both studies. In the Facteau et al. (1997) study, the mean of direct report ratings was 3.62 (SD=.87), and the mean for agreement was 29.16 (SD=16.76) on a range of zero to sixty-four. In the current study, the mean of direct report ratings was 3.65 (SD=.61), and the mean for agreement was 59.21 (SD=23.56) on a range of zero to eighty-two. Thus, the current study differed from the Facteau et al. study in that it was characterized by less variable ratings and by higher agreement among direct report raters. In that the interaction revealed by Facteau et al. was apparent only when ratings were low and agreement was high, it may be that the conditions necessary (e.g., ratings -1.5 SD coupled with high within-source agreement) for the interaction were not met in the current study. For example, in the current study

only eight participants received ratings that were 1.5 SD below the mean. Although this explanation seems plausible, additional research is clearly needed to further examine the effect of within-source rating agreement on acceptance of feedback. The need to better understand the relationship of agreement indices to feedback recipients' reactions to feedback is highlighted all the more by estimates that about 75% of companies utilizing MSF systems provide an index of within-source rating agreement to feedback recipients (London & Smither, 1995).

Hypothesis 4a and 4b proposed the same relationship as 3a and 3b for peer ratings. Similarly, peer rating agreement was significantly positively related to feedback recipients' acceptance of peer feedback, but the interaction term of peer rating agreement and peer ratings was not significantly related to acceptance of peer feedback. Therefore, Hypothesis 4a was supported and Hypothesis 4b was not supported.

The positive relationship between peer ratings agreement and acceptance of peer feedback was not found in the Facteau et al (1997) study. The difference in results of the two studies may be partly attributed to the larger sample size of the current study. The Facteau et al study may not have had enough power to detect the small relationship between peer rating agreement and acceptance of peer feedback. Interestingly, the correlation between peer rating agreement and acceptance of peer feedback was somewhat smaller than the correlation between direct report rating agreement and acceptance of direct report feedback. The smaller relationship between peer rating agreement and acceptance of feedback may be a attributed to the categorization of peers as feedback givers. More so than direct reports, individuals classified as peer raters may have vastly different relationships with the feedback recipient (Facteau et al., 1997).

Feedback recipients are instructed to select all of their direct reports to serve as feedback givers. For selecting peer feedback givers however, recipients are encouraged to select any peer with whom they feel has had the opportunity to view their work behavior. Since this is a liberal definition, feedback recipients are likely to have selected a broad array of feedback givers to serve in the peer category. For example, feedback recipients may have selected peers with whom they interact with on a daily basis, peers with whom they work on special projects with, and perhaps peers with whom they interact with in non-traditional ways (e.g., teleconferencing). Given the variability in the types of relationship included in the peer rater category, feedback recipients may not consider consistency among peers to be an indicator of feedback accuracy or credibility. These findings, coupled with the non-significant findings by Facteau and colleagues (1997), suggest that within-source rating agreement likely plays only a small role in determining feedback recipients' acceptance of feedback from peers.

In summary, in the current study it appears that cognitive reactions to manager ratings involved self-enhancement and self-consistency biases; whereas cognitive reactions to direct report ratings and peer ratings involved primarily self-enhancement biases. Furthermore, within-source rating agreement appears to have a positive relationship with cognitive reactions to direct report ratings and peer ratings.

Behavioral Reactions to MSF

The current study proposed that feedback recipients would compare feedback from others to the standard of high performance on the MSF items. If they received low ratings, a discrepancy may have been identified between the standard of high performance and the feedback, thus motivating the individual to engage in behaviors to

improve their performance. If high ratings were received, then a discrepancy may not have been detected. For example, if an individual received a rating of five (highest rating possible), he or she may have perceived that no weaknesses were identified and that little performance improvement was necessary (Campion & Lord, 1982).

In addition, the current study predicted that individuals use feedback from others to evaluate their performance relative to their own self-evaluations (Kluger and DeNisi, 1996). Due to the high credibility given to oneself, self-evaluations may serve as an internal standard by which feedback from others is judged (Ilgen & Hamstra, 1972). Thus, the discrepancy between self-ratings and other ratings may also play a role in understanding behavioral responses to performance feedback.

In summary, Hypotheses 5a, 6a, and 7a predicted that ratings from others would have a significant negative relationship with intentions to improve work performance. Hypotheses 5b, 6b, and 7b predicted that the degree of discrepancy between self-ratings and other ratings would be positively associated with intentions to improve work performance. These hypotheses were drawn from motivational theories (e.g., goal setting, control theory, consistency theory) which suggest that the feedback-standard comparison plays an important role in explaining recipients' behaviors in response to feedback.

Analyses in the current study indicated that neither manager ratings nor direct report ratings were significantly related to intentions to improve work performance. Additionally, the degree of discrepancy between these ratings and self-ratings were also not related to intentions to improve work performance. Thus, Hypotheses 5a, 5b, 6a, and 6b were not supported. The lack of relationship between direct report ratings and

intentions to improve work performance should be interpreted with great caution given the exceptionally small sample size for the hypothesis. For example, the regression analysis that tested Hypothesis 6b included only 30 participants, which resulted in power of only .29 to detect a medium effect size. The lack of a significant effect for manager ratings is, however, quite surprising. This finding suggests that feedback recipients' intentions to improve work performance were not related to manager ratings. As discussed previously, little research has been conducted to investigate behavioral reactions to manager feedback in MSF systems; consequently, this is an area in need of additional research. Specifically, future research should attempt to replicate these non-significant findings and investigate the relationship between ratings from different feedback sources and recipients' actual engagement in developmental behaviors.

A marginally significant negative relationship between peer ratings and intentions to improve work performance was revealed. Thus, Hypothesis 7a was marginally supported. As ratings from others became more negative (i.e., discrepant from the standard of high ratings), feedback recipients reported greater intentions to improve work performance.

Results of the regression analysis that examined Hypothesis 7b revealed a significant negative relationship between peer ratings and intentions, and a non-hypothesized positive relationship between self-ratings and intentions to improve work performance was also revealed. However, the interaction between peer ratings and self-ratings in predicting intentions was not significant and Hypothesis 7b was not supported.

Feedback recipients reported greater intentions to improve work performance as ratings from peers decreased. Additionally, individuals who had higher self-perceptions

of performance were more likely to report intentions to improve work performance. These findings are consistent with previous research. Negative feedback from peers may trigger the search for more effective behaviors (Taylor et al., 1984). Additionally, self-perception has been identified as a key variable in the self-regulation process (Ashford, 1989; Taylor & Brown, 1988). Individuals with high self-ratings are likely to have higher aspirations regarding their current and future performance, and as such may be more motivated to engage in positive behavior changes (Ashford, 1989).

There are several possible explanations for the lack of significant interaction between self-ratings and peer ratings in predicting intentions to improve work performance. First, in order for the discrepancy to be detected by the feedback recipient and considered important enough to warrant a response, it may need to pass some minimum threshold regarding size of discrepancy. To further complicate this possibility, the threshold of detectable discrepancy may vary by feedback recipient. In the current study, only nine feedback recipients had a self-peer rating discrepancy greater than -1 point and only 15 feedback recipients had a self-peer rating discrepancy greater than +1 point. Consequently, the number of individuals with a relatively large discrepancy may not have been sufficient to reveal a significant interaction had it been present. Further investigation revealed that the mean discrepancy between peer and self-ratings was normally distributed, however the range of variance was truncated. Again, this indicates that few feedback recipients fell in the outer edges of the distribution (-1 or +1 point discrepancies). Range restriction may substantially diminish the power to detect effects (Cohen & Cohen, 1983).

A related explanation focuses on the mean ratings from peers and self. Many studies have found that self-ratings tend to be higher than other source ratings (Harris & Schaubroeck, 1988; Thornton, 1980). However, in the current study, a one-way analysis of variance revealed that self-ratings did not significantly differ from peer ratings or manager ratings. Furthermore, self-ratings were actually slightly lower (although not significantly) than peer ratings. Consequently, the lack of significant findings for an interaction effect between self-ratings and peer ratings may be in part due to the unusually high amount of agreement between these two sources. It should be noted that although most studies report that self-ratings are higher than other ratings, the findings of the current study (self-ratings similar to other ratings) are not without precedent (cf. Atwater & Yammarino, 1992).

A third possible explanation revolves around the use of self-ratings to represent feedback recipients' performance standard. Goal setting and control theories both agree that feedback-standard comparisons play a critical role in determining behavioral reactions. Hypotheses 5, 6, and 7 regarding intentions to improve work performance were formulated on the premise that individuals may compare feedback from others to the standard of high performance, as well as to the standard of their own self-evaluation. Although a comparison between self-ratings and other ratings does have theoretical support, it is possible that feedback recipients did not use self-ratings as a standard for comparison. For example, it is has been suggested that feedback recipients may compare their feedback to normative information such as the mean ratings of their coworkers (Kluger & DeNisi, 1996; Reilly et al., 1996). In that most individuals believe their performance is better than average (Meyer, 1980), feedback recipients may use the

average rating of their coworkers as the standard for feedback comparison. Feedback recipients may be motivated to improve their work performance if they receive ratings below such normative ratings.

The current study was able to address this potential explanation regarding normative feedback. Feedback recipients participated in a company wide culture change initiative and MSF program with colleagues from their work units. Within their MSF feedback reports, they were provided with normative data regarding their work group's MSF ratings. A supplemental regression analysis was run to examine the possibility of this information serving as a feedback-standard comparison. The results of the hierarchical regression analysis are presented in Table 21. The analysis revealed that the normative peer information was not related to intentions to improve work performance, nor was the interaction between the normative ratings and peer ratings related to intentions to improve work performance. Consequently, it appears that normative information regarding peers' performance was not related to intentions to improve work performance.

Another possible explanation for the lack of significant interaction between self-ratings and peer ratings is that we do not know what relationship feedback recipients were considering when making self-ratings (Facteau et al., 1997). Self-ratings could be in relation to a specific type of work relationship (e.g., managers, direct reports, peers) or the ratings could represent a global view of average performance across work relationships (Facteau et al., 1997). To further complicate this prospect, it is possible that the relationship considered when making ratings differed depending upon the feedback

Table 21. Results of Supplemental Analysis: Regressions of Behavioral Reactions on Peer Ratings and Normative Ratings

Dependent Variable	Model	Independent Variables	β	t	Significance
Intentions to Improve Work Performance					
	1	Peer Ratings	-.22	-2.86	.005
		Normative Peer Ratings	.01	.17	.866
	2	Peer Ratings	-.22	-2.71	.008
		Normative Peer Ratings	1.01	.78	.437
		Peer Ratings X Normative Peer Ratings	-.01	-.11	.914
		Peer Ratings X Peer Ratings	.04	.51	.613
		Normative Peer Ratings X Normative Peer Ratings	-1.00	-.76	.446

Note. N=175. β is the standardized regression coefficient. All predictor variables were centered prior to analyses.
Model 1: $F(2,172)=4.38$, $R^2=.048$, $\Delta R^2=.048$, $p=.014$
Model 2: $F(5,169)=1.90$, $R^2=.053$, $\Delta R^2=.005$, $p=.837$

recipient. That is, some feedback recipients may have made self-ratings while considering their performance in regards to managers, while others may have made self-ratings based on their global work performance across feedback giver sources. Consequently, comparison of self-ratings to peer ratings in Hypothesis 7 may have been meaningless if the feedback recipient had been referring specifically to another work relationship (e.g., managers) when making self-ratings. Given that the interaction between managers' ratings and self-ratings was significantly related to acceptance of manager feedback (Hypothesis 2a), this explanation seems plausible. As discussed earlier, individuals may form their self-evaluations in part from the feedback that they have previously received from their managers. Therefore, although self-ratings had a significant main effect on intentions to improve work performance, an interaction effect between self-ratings and peer ratings may not have been present because feedback recipients did not view them as ratings that should necessarily be congruent. Consequently, the presence of a discrepancy may not have created a sense of discomfort that is predicted by self-regulation theories. Future research should consider these possibilities and others when investigating the feedback-standard comparison process.

In summary, peer ratings were negatively related, and self-ratings were positively related, to intentions to improve work performance. There is little empirical evidence in the literature to suggest which source of feedback is viewed as most valuable to feedback recipients. However, in the current study it appears that self-perceptions and peer feedback were more related to intentions than were other sources of feedback. This conclusion is based on the lack of significant relationships between manager ratings and direct report ratings with intentions, coupled with the significant relationship between

peer ratings (marginally significant) and self-ratings with intentions. It is important to note however, that the relationship between peer ratings and self-ratings with intentions to improve work performance were relatively small, and thus the relationship of MSF ratings to intentions to improve work performance appears to be limited.

The marginal significance of peer ratings and the non-significance of other sources is a novel finding, and begs the question of why feedback recipients may pay attention to one source but not to others. Fedor (1991) suggested that feedback sources with high power might receive greater attention; thus, in the current organization the opinions of peers may have been perceived as more valuable than the opinion of other raters. The correlations between both peer ratings and acceptance of peer feedback and level of peer rating agreement and acceptance of peer feedback were small. Taken together it appears that there are likely unmeasured variables (e.g., perceptions of credibility, expertise, trustworthiness) which may have influenced acceptance of peer feedback. These variables may have also influenced feedback recipients' behavioral reactions to peer feedback (i.e., intentions to improve work performance). Interestingly, there is little evidence apparent in this company's work environment that explains the influence given to peer ratings. For example, the company is not characterized by the presence of formal work teams. Although some feedback participants may work on project teams, in general, employees are not formally assigned to work teams. Additionally, managers make most administrative decisions, and peers typically do not have access over formal rewards. Future research should seek to understand why feedback recipients seem to place greater emphasis on the ratings from their peers.

Perhaps qualitative studies could provide much needed insight into the factors that are related to recipients' reactions to feedback from each source.

An alternative explanation for the greater relationship of peer ratings with intentions could be due to the increased number of raters in the peer category. For example, ratings from 3-5 people (e.g., peers) may carry more weight than ratings from one person (e.g., manager). If this explanation were true, one would expect that ratings from direct reports would also be given consideration in forming intentions for performance improvement. As mentioned previously, it is difficult to speculate regarding the relationship of direct report ratings with intentions in the current study because of the greatly limited power for detecting effects. Thus, future studies that include more individuals with direct report raters are necessary to fully explore this potential explanation.

A final word of caution in interpretation is warranted. Few studies have investigated which source feedback recipients are most likely to favor. Additional studies are clearly needed to more fully investigate these findings before inferences can be made regarding the relationship and value of MSF to subsequent behavioral intentions. Second, the relationship of different feedback sources to choice of behavioral activity and future performance should be assessed in addition to intentions to improve work performance. For example, although MSF ratings may have shown only a small relationship with recipients' intentions to engage in developmental activities, the selection of areas to target for improvement (e.g., leadership or flexibility) may result from self-awareness of strengths and weaknesses engendered by MSF. Longitudinal research is

needed to fully assess the relationship between ratings, intentions, and actual behavior changes.

Behavioral Reactions and Efficacy to Improve Work Performance

The current study proposed a significant positive relationship between efficacy to improve work performance and intentions to improve work performance (Hypothesis 8a), and proposed that the interaction between efficacy to improve work performance and MSF ratings would significantly influence intentions to improve work performance (Hypotheses 8b-8d). Efficacy to improve work performance was significantly related to intentions to improve work performance. Additionally, efficacy did not serve as a significant moderator of the relationship between MSF ratings from managers, direct reports, or peers and intentions to improve work performance.

A supplemental analysis revealed a non-hypothesized significant interaction between self-ratings and efficacy to improve work performance that was related to feedback recipients' intentions to improve work performance. Examination of the interaction revealed a positive relationship between self-ratings and intentions to improve work performance for individuals reporting above average efficacy to improve work performance. The relationship between self-ratings and intentions to improve work performance was negative for individuals reporting below average efficacy to improve work performance. For example, intentions to improve work performance were highest when both efficacy to improve work performance and self-ratings were high. However, intentions to improve work performance were lowest when efficacy to improve work performance was low and self-ratings were high. Additionally, when self-ratings were

low, intentions to improve work performance were moderate regardless of efficacy to improve work performance.

From the analyses in the current study, it appears that of the variables examined, efficacy to improve work performance had the strongest relationship with intentions to improve work performance. The strong role of efficacy is not surprising given previous research which suggests that individuals with high self-efficacy are more likely to take responsibility for their personal development (Bandura, 1982; Bandura & Schunk, 1981). In the current study, the MSF process was part of a large-scale culture change initiative within the company. Given the high mean rating for efficacy to improve work performance ($\underline{M}$= 4.24, $\underline{SD}$=.47) it may be that involvement in the MSF process and culture change initiative strongly influenced the participants' perceptions of their ability to improve their work performance.

Indeed, participation in relevant training may have increased employees' self-efficacy for improvement. Smither, London, Vasilopoulos, Reilly, Millsap, and Salvemini (1995) and Dominick, Reilly, and McGourty (1997) reported that individuals who completed MSF instruments but did not receive MSF feedback reports, exhibited as much behavior improvement as those who received feedback reports, and both of these groups improved more than a control group (Dominick et al., 1997). It is believed that the prescriptive nature of the MSF items cue participants as to what behaviors are viewed as favorable by the organization (Locke & Latham, 1990). Consequently, it may be that although MSF ratings were significantly related to intentions to improve work performance, the primary driver of intentions to improve work performance may have

been participation in the MSF process and exposure to the culture change ideology and training.

Harris and Rosenthal (1985) in their meta-analytic review reported that although feedback influenced performance, the effect of organizational climate had a stronger impact on performance. It does seem however, that in such a situation, the value of the MSF ratings would be not only in engendering motivation to improve, but also in providing self-awareness as to what performance areas are in most need of improvement. Thus, the current author suggests that although efficacy to improve work performance displayed a stronger relationship with motivation to improve, MSF ratings may be essential to guiding and directing that motivation into *appropriate* targeted behavior change.

Limitations of the Present Study

There are several potential limitations of the study that should be mentioned. First, although the current study utilized a sample that is considered large, of the 401 participants only 108 had received direct report feedback. The sample size was limited primarily because few participants in the study had managerial responsibilities. A priori power analysis indicated that 92 subjects were necessary to achieve acceptable levels of power. However, due to missing data for various variables, the effective sample size for direct report hypotheses ranged from 30 to 90 feedback recipients. Consequently, some of the insignificant findings regarding direct report analyses may have been a result of low power (Cohen & Cohen, 1983). For example, the hierarchical regression equation for Hypothesis 6a investigating the relationship between direct report ratings and intentions to improve work performance had a power level of only .29. Thus, it is

difficult to determine whether the lack of significance is due to low power or to the absence of the hypothesized relationship.

Another potential limitation of the current study is that the identification method used for the reaction questionnaire limited the total sample involved in the study. Feedback recipients were asked to provide their social security numbers on the feedback reaction questionnaire. This was a standard procedure the company used to link evaluation materials with appropriate demographic data. The social security numbers were also used to match their responses to the MSF data. No names were associated with these numbers. Although participants were assured that their individual responses would remain confidential, approximately 48% of the feedback recipients still choose not to provide their social security numbers, resulting in a number of unusable questionnaires.

The lack of participation results in two potential limitations. First, as previously discussed it reduced the sample size, which limited the power of some analyses. Second, it raises the issue of whether there are differences among feedback recipients who provided their social security numbers and those who did not. Comparisons between the average MSF ratings of the study's feedback recipients to the average MSF ratings for the company's employees revealed that the sample did not significantly differ from the company in terms of MSF ratings. The average MSF ratings are as follows (the mean ratings of all feedback recipients in the company are presented first, the mean ratings of feedback recipients in the study are presented second): manager ratings-3.62 vs. 3.64, direct report ratings-3.68 vs. 3.65, peer ratings- 3.80 vs. 3.76, and self-ratings-3.66 vs. 3.69. T-tests comparing the sample mean to the population mean revealed that the sample MSF ratings did not significantly differ from the population MSF ratings for all

four rating sources. Thus, the identification method does not appear to have resulted in a sample that differed from the population in regards to performance as measured by the MSF instrument.

The identification method may have however resulted in a sample that differed from the population in regards to other factors (e.g., organizational trust). Unfortunately, there is no way to assess this issue in the current study. However, future research should consider data collection strategies that would increase the response rate of participation in program evaluation.

A third limitation concerns the generalizability of the current study's findings. Although it appears, based on the comparison of mean MSF ratings and participant demographics, that the study included a representative sample from the company, the findings may not be generalizable to other companies. The current study was conducted in a large quasi-government public utility. Furthermore, the MSF program was included as part of a large culture change initiative within the company. The study's results may be influenced by components of the culture change initiative that go beyond the MSF program. It is also possible that norms and history unique to the company influenced the results of this study. For example, the company is characterized in particular by an older work force ($\underline{M}$=48 years) with long organizational tenure ($\underline{M}$=18 years). Additionally, the company has undergone several reductions in force during the last decade. All of these factors threaten the generalizability of the study's results to other organizations. The validity however is strengthened in that the study's participants represented a wide variety of functional areas and organizational levels within the company. Furthermore, the study utilized an actual MSF program in a field setting. Thus, the study provides

valuable information regarding participants' reactions to feedback received in a natural work setting. Future research should test whether the current patterns of results are present in other organizations as well.

A fourth limitation of the current study is the correlational nature of the analyses. The focus of this study was to identify the relationships between MSF ratings and different reactions to the feedback. The use of regression analyses helped establish some variables as potential correlates of cognitive and behavioral reactions, and this information is valuable for better understanding how individuals may react to MSF. Causality can not however be determined based on these analyses. Thus, future research that includes quasi-experimental designs and control groups in field settings would benefit this area of research greatly.

Another potential limitation of the current study, as well as of many MSF research studies investigating feedback reactions, concerns the use of composite ratings to represent MSF ratings and within-source rating agreement (Facteau et al, 1997). Feedback recipients did not receive such global indices in their individual feedback reports, but rather received dimensional and item level information. Although the construction of a composite index is consistent with previous research, and statistical analyses provided support for the construction of a single index to represent MSF ratings per feedback source, the measures used may not have adequately captured feedback recipients' actual perceptions. Given that several of the hypotheses using the composite indices were supported however, it is believed that the indices were at least partially accurate in assessing feedback recipients' perceptions of their feedback.

A sixth potential limitation of the current study concerns the measurement of the independent and dependent variables. All of the study's variables were measured on a five-point scale. Across the variables, there was limited variance in the ratings and use of the rating scale appears to be truncated to 3 points (rather than the full 5 points), with few ratings falling below the middle rating of 3. This holds true for both the MSF ratings provided by managers, direct reports, peers, and self, as well as for the reaction ratings provided by the feedback recipients. The limited variance in the study's variables may have placed a ceiling on the observed R^2 in the regression equations. Future studies may wish to consider the value of longer rating scales (e.g., seven-points or nine-points) for potentially engendering greater discrimination among ratings. However, it should be noted the limited variance in ratings may actually reflect "true" variance in performance, rather than an artifact of the measurement system.

Another potential limit of this study was the use of intentions as a surrogate for behavioral reactions. Although research has clearly demonstrated that intentions are reliable predictors of subsequent volitional behavior (Ajzen, 1991; Ajzen & Fishbein, 1980; Ajzen et al., 1982; Fishbein & Ajzen, 1975; Ilgen et al., 1979; Mobley et al., 1979), they do have limitations in predicting behavior. Intentions are likely to result in specified behavior to the extent that they are under the recipient's volitional control (Ajzen & Fishbein, 1980; Fedor, 1991). Furthermore, intentions can be changed over time by the presence of external constraints (Fedor, 1991). Future research should employ research designs that allow for the measurement of attitude change over time and should include measures of actual behaviors that result from intentions. For example, it may be

appropriate to assess feedback reactions shortly after feedback recipients received their MSF feedback and again approximately 6 months after they have received their feedback.

Despite limitations, several strengths of the current study should be highlighted. First, the current study utilized a "real" MSF program and "real" employees in an organization, both of which strengthened its external validity. Much of the previous research has relied on laboratory designs, student samples, or class project-teams that limit the external validity of results. Second, the current study utilized a relatively large sample in comparison to previous research regarding reactions to MSF. Although studies focusing on psychometric properties of MSF are typically quite large, most studies that include reactions to, or outcomes of, MSF have been quite limited in sample size. Thus, the current study had the benefit of higher levels of power than many of the previous MSF studies have employed. With the exception of the hypothesis regarding the relationship between direct report ratings and intentions to improve performance, all hypotheses had adequate power to detect medium sized effects. Another strength of the current study is the inclusion of MSF ratings from four sources (managers, direct reports, peers, and self). In that MSF programs provide considerably more performance feedback to participants than traditional performance appraisal systems, the field of research greatly needs studies which include multiple sources of ratings to fully evaluate these systems.

Implications for Research and Practice

The results of this study provide a number of valuable insights regarding theoretical and practical implications. The current research extends previous research by investigating the relationship between MSF ratings and multiple types of feedback

reactions (affective, cognitive, and behavioral reactions). The research revealed different relationships between the MSF ratings and each type of reaction.

The lack of significant relationship between satisfaction with the MSF program and MSF ratings is somewhat surprising. However, it is a positive finding for practitioners. Previous research had suggested that individuals who received low ratings would likely attempt to derogate the entire feedback program in effort to deny their feedback. In the current study, satisfaction with the program was unrelated to MSF ratings received. It appears that satisfaction with MSF process was related to factors other than the ratings received. Some examples of potential influences may include the program's processes such as the timeliness of feedback, the responsiveness of feedback givers who were requested to complete the MSF instruments, and the facilitators who presented and discussed the MSF process. Future research should attempt to identify the correlates of affective reactions to the MSF program.

The study's finding of self-enhancement effects in explaining cognitive reactions is consistent with previous research. It appears that the positive relationship between MSF ratings and acceptance of feedback is a robust effect. Interestingly, in addition to self-enhancement effects, self-consistency effects were also revealed for acceptance of manager feedback. These findings were not present for acceptance of direct report feedback or acceptance of peer feedback. It appears that feedback recipients may have expected congruence between their self-ratings and manager's ratings, but not necessarily between their self-ratings and other ratings. As discussed, it may be that individuals' self-assessments were influenced by feedback they had received in the past. For example, in the current organization feedback recipients likely received feedback from their managers

previously during traditional performance appraisal assessments. Consequently, feedback recipients may have expected similarity in the self-ratings and manager ratings, and may have reacted negatively (low acceptance) when the ratings differed.

Although this was the first large-scale implementation of the MSF program in the current company, the MSF program had been in place for several years. Consequently, it is likely that some individuals had previously been through the program. However, the current roll-out was open to all employees in the company, whereas previous roll-outs had been targeted only to management. Given that 59% of the current study's participants did not have managerial responsibilities, it is believed that the majority of participants had not previously been through the company's MSF program. Unfortunately, the current study did not control for this information. Future research should focus on the self-assessment process, examine the type of feedback previously received by feedback participants, and attempt to identify the factors that influence or change self-assessments. Understanding this process is essential in that many MSF programs are repeated (e.g., annually), and in such programs feedback recipients typically receive significantly more performance feedback than they have previously. For example, research should address questions such as "Are self-assessments influenced by feedback from managers in particular, or from previous feedback from any source?" and "How will self-assessments be influenced when multiple sources of feedback are received?"

From a practical standpoint, the finding of self-consistency effects also has implications. If self-ratings are affected by previous feedback, organizations that conduct frequent MSF programs (e.g., annually) will need to consider the effect of other rating

sources (e.g., direct reports, peers) on self-perceptions. It may be that self-consistency will also be related to acceptance of direct report and peer feedback if feedback recipients use the information provided in previous MSF reports to form their self-ratings. Organizations that implement MSF frequently will need to monitor the system's effectiveness. The effects of these programs may differ from "one-time roll outs," where feedback from peers and direct reports is likely to be considered quite novel. Additionally, if self-ratings are related to previous feedback, this further highlights the need to strive for high quality, accurate feedback from feedback givers. Practitioners can implement processes aimed at educating feedback givers about making accurate ratings and about the value of feedback, as well as introduce interventions to increase response rates of feedback givers.

Probably the most notable findings of the current study are the different patterns of relationships between MSF ratings and cognitive and behavioral reactions. These findings have both theoretical and practical implications. Much of previous feedback research has been based on the assumption that feedback acceptance is a precursor to performance improvement behaviors (cf. Ilgen et al., 1979); and that favorable ratings are necessary for feedback acceptance and consequently necessary for positive behavioral reactions. The current study hypothesized that MSF ratings would be positively associated with acceptance, and negatively associated with intentions to improve work performance. It was suggested that acceptance of feedback was not a mediator of the relationship between feedback and intentions to improve work performance. In the current study, peer ratings were the only MSF rating source to be significantly related to intentions to improve work performance. As hypothesized, peer ratings were positively

associated with acceptance of peer feedback and negatively associated with intentions to improve work performance. However, the relationship of peer ratings with acceptance of peer feedback, and with intentions to improve work performance, was relatively small. Thus, is appears that there are unmeasured variables which are significantly related to cognitive and behavioral reactions to feedback from peers. Furthermore, a supplemental analysis was conducted to investigate the possibility of acceptance of peer feedback mediating the relationship between ratings and intentions to improve work performance. The results are presented in Table 22. As can be seen, the addition of the proposed mediator (acceptance of peer feedback) did not diminish the relationship between MSF ratings and the dependent variable (intentions). The first step of the regression was marginally significant (ΔR^2=.013, p=.091). The addition of acceptance of peer feedback in step two of the model accounted for a significant increment in variance (ΔR^2=.118, p<.001), and peer ratings (β=-.20, p=.002) and acceptance of peer feedback (β=.36, p<.001) were both significant. As such, feedback recipients' acceptance of peer feedback does not appear to mediate the relationship between MSF ratings and intentions to improve work performance.

Additionally, the lack of influence exerted by manager ratings is puzzling and clearly needs additional investigation by future studies. As discussed previously, the number of MSF studies focusing on the attention given to different feedback sources has been limited. Future research should continue to search for correlates of cognitive and behavioral reactions to feedback, and further investigate the differing role of feedback sources on behavioral reactions.

Table 22. Results of Supplemental Analysis: Regressions of Behavioral Reactions on Peer Ratings and Acceptance of Peer Feedback

Dependent Variable	Model	Independent Variables	β	t	Significance
Intentions to Improve Work Performance					
	1	Peer Ratings	-.11	-1.70	.091
	2	Peer Ratings	-.20	-3.10	.002
		Acceptance of Peer Feedback	.36	5.47	<.001

Note. N=223. β is the standardized regression coefficient.
Model 1: $F(1,221)=2.88$, $R^2=.013$, $\Delta R^2=.013$, $p=.091$
Model 2: $F(2,220)=16.60$, $R^2=.131$, $\Delta R^2=.118$, $p<.001$

From an employee development perspective, the finding regarding behavioral reactions suggests that individuals who received low ratings from their peers were more motivated to improve their performance than individuals who received high ratings from their peers. Previous studies have suggested that because MSF ratings were positively associated with acceptance (e.g., high MSF ratings were met with high feedback acceptance and low MSF ratings were met with low feedback acceptance), employees in most need of improvement may not benefit from MSF programs (Facteau 1995; Kudisch, 1996). Most of these studies, however, only investigated cognitive reactions (e.g., feedback acceptance), and therefore were unable to observe the relationship between MSF ratings and intentions. The current study provides evidence that self-enhancement effects may not influence behavioral reactions, and further suggests that for peer feedback, feedback recipients may be most motivated to improve performance when feedback received is less favorable. It is important to note, however, that given the small relationship between peer ratings and behavioral reactions, practitioners should not set unrealistic expectations regarding the behaviors of feedback recipients in response to the MSF.

The current study also revealed that self-ratings were positively related to several outcome variables (acceptance of manager feedback, acceptance of peer feedback, and intentions to improve work performance). Although not hypothesized, the significant influence of self-ratings is consistent with the notion that self-assessment is a highly valued feedback source (Herold, Liden, & Leatherwood, 1987). As previously discussed, researchers should continue to investigate the process by which employees form their self-assessments. Research has shown that self-evaluation is influenced by feedback

received previously (Ashford, 1989). Thus, from an applied viewpoint, the positive relationship between self-ratings and both cognitive and behavioral reactions underscores the need to promote positive self-perceptions among employees. For example, practitioners should encourage employees in the practice of giving positive, as well as constructive feedback. Additionally, practitioners should consider ways of developing positive work experiences (e.g., job enrichment) that would allow individuals the opportunity to demonstrate successful mastery of skills valued by the organization.

The finding of a strong relationship between efficacy to improve work performance and intentions to improve work performance, as well as the significant interaction between efficacy and self-ratings, suggests the need to carefully consider feedback recipients' confidence in their ability to use the feedback to make performance improvements. Researchers should seek to understand how individual difference variables and environmental factors might play a role in feedback recipients' efficacy to improve work performance. Given that most MSF programs are developmental and the feedback is confidential, feedback recipients' decision to use, or not to use, the feedback is completely volitional. Consequently, in order to promote positive behavior changes as a result of MSF, practitioners should strive to create support mechanisms in their MSF processes that will help build feedback recipients' confidence in their ability to make performance improvements. For example, the current study's MSF process was administered as part of a culture change initiative. Although the feedback recipients were not held accountable for their feedback, they participated in exercises and training designed to highlight the importance of taking responsibility for their own work performance, and were encouraged to outline professional development plans based on

the MSF. Parker (1998) suggested that other support mechanisms which may increase efficacy include coaching programs (e.g., skill acquisition may increase self-assurance), job enrichment (e.g., accountability may engender confidence), increased communication (e.g., knowledge may increase feelings of control), and top management support. Researchers and practitioners should consider these and other mechanisms to assist employees in developing greater efficacy to improve their work performance.

Directions for Future Research

This study adds to the growing body of literature examining the correlates of feedback recipients' reactions to MSF. In addition to the suggestions for future research that were identified throughout the paper, this section outlines several areas for future research that extend beyond the current study. The current study utilized a MSF program that was conducted as part of a large-scale culture change initiative. The MSF program was not implemented for research purposes, consequently the ability to collect certain kinds of data was limited due to time and questionnaire space constraints. The current study focused on the relationship between MSF ratings and recipients' reactions to the feedback. However, in addition to the ratings themselves, other factors are likely to play a role in feedback recipients' reactions. Indeed, the study of any feedback intervention is quite complex, and the complexity is multiplied in MSF programs given the increased amount and diversity of information provided. Below are several areas that the current author feels are particularly salient in the realm of MSF and employee development.

Personal factors and environmental factors should be explored to better understand feedback recipients' reactions to MSF feedback. Efficacy to improve work performance was the only individual difference variable assessed in the current study. It

was found to be significantly related to feedback recipients' intentions to engage in development behaviors. Future research should include additional individual difference variables such as the need for achievement, job involvement, learning motivation, and work ethic. Additionally, individual differences in perceptions of rewards to be obtained from performance improvement should be assessed. Although the current MSF program was not tied to any formal administrative decision making procedures, individuals may have believed that other types of rewards were linked to positive behavior change based on the MSF. Nordhaug (1989) proposed that the perceived benefits of voluntary development activities may include the satisfaction of learning motivations, career development (e.g., promotions not based on the MSF ratings, but on visible performance improvements from utilizing the MSF for development), and psychosocial development (e.g., self-actualization). The influence of these informal rewards is especially interesting given that feedback recipients likely believe that different feedback sources have control over varying types of rewards. For example, managers may be perceived to have control over formal rewards (e.g., pay, promotions), whereas peers may be valued for their control over social rewards (e.g., social standing, esteem among peer group). A better understanding of these perceptions would allow for greater prediction regarding feedback recipients' processing and use of feedback from multiple sources.

In addition to individual difference variables, research should also closely examine environmental factors that influence the outcomes of MSF programs. The amount of social support (e.g., support from managers, coworkers, family) and situational support (e.g., quality learning opportunities, structured development activities) is likely to influence not only feedback recipients' immediate reactions to MSF, but also their

commitment to performance improvement goals over time (Maurer & Tarulli, 1994; Noe & Wilke, 1993). Environmental constraints (e.g., perceptions of budgetary constraints and time constraints) related to engagement in developmental activities should also be assessed. Environmental factors may be of particular interest to practitioners, since interventions can be established to reduce constraints and promote social and situational support for engagement in developmental activities.

In addition to considering additional factors that are related to reactions to feedback, researchers should consider other measures of feedback recipients' reactions. In that the primary focus of most MSF programs is employee development and performance improvement, particular attention should be given to behavioral reactions and outcomes of MSF programs. London and Smither (1995) suggested that the most critical outcomes of feedback recipients' reactions include goal setting, skill development, behavior change, and performance improvement. The current study's assessment of specific intentions regarding behavior improvement taps London and Smither's goal setting outcome. However, given the sequential nature of the four outcomes, longitudinal studies that assess feedback recipients' engagement in each of the different behavioral outcomes is critical.

Another related area for future research focuses on the specific areas targeted for performance improvement. Goal setting theory has suggested that setting specific challenging goals is conducive for performance improvement (cf. Locke & Latham, 1990). The current study assessed intentions regarding the specific types of developmental activities the feedback recipient planned to engage in (e.g., reading books, seeking additional feedback from others). However, future research would benefit from

also assessing the specific behaviors/performance dimension (e.g., leadership, flexibility) being targeted for improvement, in addition to the specific activity feedback recipients plan to engage in (e.g., reading books, seeking additional feedback from others).

Along these same lines, the general trend in MSF literature has been to conduct research utilizing a composite measure of performance rather than multiple dimensions of performance. Although psychometric evaluation of items from MSF instruments provide statistical justification for a composite measure, investigation of the relationship between individual dimensions and feedback recipients' reactions may be beneficial. Given that individuals typically receive dimension level ratings in their MSF feedback reports, examination of dimension level ratings would more closely mirror the information that feedback recipients actually receive.

Investigation of the influence of individual dimensions seems warranted given research in related fields. Dipboye and dePontbriand (1981) found that feedback recipients' reactions to performance appraisal ratings were influenced by the degree to which they perceived that the dimensions being rated were job relevant. Additionally, reports by Harvey (1991) suggest that managers, direct reports, and peers do not necessarily agree in the identification of important job dimensions. Consequently, investigating the differing relationships between dimensions and outcomes may be a fruitful area for researchers. However, researchers should be aware of the increased complexity of such a research endeavor. For example, in the current study there were four MSF rating sources (i.e., manager ratings, direct report ratings, peer ratings, and self-ratings). If this study had been broken down to the dimensional level, it would have resulted in 44 MSF rating variables (11 dimensions x 4 sources).

As a final suggestion, researchers and practitioners are encouraged to carefully consider the differing effects of MSF programs implemented for administrative purposes and those implemented for developmental purposes only. Although meta-analytic research has demonstrated that ratings made for administrative purposes (e.g., pay, promotions) are typically higher than ratings made for developmental purposes only (e.g., employee development) (Fedor & Bettenhausen, 1989; Jawahar & Williams, 1997), relatively little is known regarding employees' reactions to feedback received for differing purposes. One study that directly compared rating purposes found that rating purpose strongly affected employees' reactions (cf. Bettenhausen and Fedor, 1997). Appraisals used for administrative purposes were believed more likely to produce negative outcomes and less likely to produce positive outcomes than appraisals used for developmental purposes only. Furthermore, Bettenhausen and Fedor found that employees had more negative attitudes for the administrative use of peer ratings than for the administrative use of direct report ratings.

Although scholarly work is limited and few studies directly compare rating purpose to employees' reactions, some practitioners are beginning to use MSF for administrative decision making. As evidence of this trend, a set of guidelines for the administrative implementation of MSF programs was recently published (cf. Bracken & Timmreck, 1999). Given the findings of Bettenhausen and Fedor (1997) and Jawahar and Williams (1997), research is clearly warranted to more fully examine the use of MSF for administrative purposes. Although several studies have demonstrated the positive benefits of developmental MSF programs (cf. Atwater et al., 1995; Hazuch et al., 1993; Reilly et al., 1996) practitioners should not assume these same benefits will result from

administrative implementations. Empirical evidence is needed to verify such an inference.

Concluding Comments

In conclusion, the current study extends previous MSF research and provides several suggestions for future avenues of research. Additionally, it provides practical implications that can assist organizations in designing and implementing multisource feedback systems that promote favorable reactions and encourage positive behavior changes. Although the MSF ratings appeared to have only a small relationship with recipients' intentions to improve their work performance, even the smallest changes may result in useful improvements for the individual and the company. Furthermore, in comparison to many organizational interventions, the cost per participant in MSF programs is relatively inexpensive. Therefore, organizations such as the one in the current study should continue to use MSF programs to enhance employees self-awareness and to guide them in making appropriate behavior changes.

Future research should use the distinction between affective, cognitive, and behavioral reactions as a platform to build upon. Each of the reactions should be more fully examined and additional types of reactions should also be considered. Additionally, longitudinal research designs are needed to better understand the relationship between MSF and reactions over time. Since the ultimate goal of MSF programs is positive behavior change, a better understanding of employees' immediate and long-term reactions to performance feedback is critical.

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APPENDICES

APPENDIX A

SAMPLE STUDY MATERIALS



Instructions

1. Carefully read the enclosed booklet, ***Overview for Feedback Givers.***

2. Read each question carefully. ***Rate the effectiveness of the employee named above over the past three to six months*** based on ***your*** observations of the person.

3. ***If you have not had an adequate opportunity to observe the behavior, or if a question is not relevant, fill in the ⓧ (No Basis to Rate) circle.***

4. ***Provide specific examples in the Comments section.*** These comments should describe what behaviors you would like to see the employee ***start*** doing, ***continue*** doing, and ***stop*** doing.

5. ***Use a #2 pencil or black/blue pen*** to complete the questionnaire. Completely fill in the circles. ***Print legibly in the Comments section.***

6. ***Return this questionnaire by the date listed on the top of this page.*** A postage-paid return envelope has been included for your convenience.

7. Answer the questionnaire in a professional, open, and honest manner. ***Responses from direct reports, second-level reports, and peers are anonymous and confidential. Responses from managers are confidential, but not anonymous*** since most feedback recipients have only one manager. Questionnaires are returned directly to the external vendor in order to maintain anonymity and confidentiality throughout the process.

Contact the 360-Degree Feedback coordinator
if you have any questions.

Use a #2 pencil or black/blue pen.
Make heavy black marks that fill the circle completely.
Correct Mark ● Incorrect Marks ⊘ ✓ ⓪ ◐

No Basis to Rate

Extremely Effective
Very Effective
Effective
Somewhat Effective
Not at all Effective

How effective is this employee at . . .

Integrity

1. Following through on work commitments. ..... ① ② ③ ④ ⑤ ⑦
2. Conducting work activities according to the highest ethical standards. ..... ① ② ③ ④ ⑤ ⑦
3. Acting fairly toward all employees. ..... ① ② ③ ④ ⑤ ⑦
4. Taking responsibility for his/her actions. ..... ① ② ③ ④ ⑤ ⑦

Respect for the Individual

5. Supporting a work environment which values a broad range of experiences, backgrounds, and points of view. ..... ① ② ③ ④ ⑤ ⑦
6. Recognizing the importance of everyone's work. ..... ① ② ③ ④ ⑤ ⑦
7. Treating every employee with dignity and respect. ..... ① ② ③ ④ ⑤ ⑦
8. Realizing the benefits of diverse opinions. ..... ① ② ③ ④ ⑤ ⑦

Teamwork

9. Cooperating with others to achieve goals. ..... ① ② ③ ④ ⑤ ⑦
10. Developing positive working relationships with other employees. ..... ① ② ③ ④ ⑤ ⑦
11. Working to turn conflict into "win-win" situations. ..... ① ② ③ ④ ⑤ ⑦
12. Contributing actively to group projects. ..... ① ② ③ ④ ⑤ ⑦

Innovation and Continuous Improvement

13. Developing original, creative, innovative approaches to work situations. ..... ① ② ③ ④ ⑤ ⑦
14. Taking calculated risks to improve work processes. ..... ① ② ③ ④ ⑤ ⑦
15. Using mistakes as opportunities for learning. ..... ① ② ③ ④ ⑤ ⑦
16. Monitoring progress toward high-quality outcomes. ..... ① ② ③ ④ ⑤ ⑦

Honest Communication

17. Communicating honestly with everyone, regardless of level or functional area. ..... ① ② ③ ④ ⑤ ⑦
18. Sharing appropriate information with other employees in a timely manner. ..... ① ② ③ ④ ⑤ ⑦
19. Listening attentively to others' concerns or ideas. ..... ① ② ③ ④ ⑤ ⑦
20. Accurately sharing relevant information with individuals external to ..... ① ② ③ ④ ⑤ ⑦

Leadership

21. Communicating a clear direction and vision to others. ..... ① ② ③ ④ ⑤ ⑦
22. Inspiring others to achieve their full potential. ..... ① ② ③ ④ ⑤ ⑦
23. Recognizing others for their contributions. ..... ① ② ③ ④ ⑤ ⑦
24. Leading by example. ..... ① ② ③ ④ ⑤ ⑦

Flexibility

25. Seeing change and uncertainty as new opportunities for improvement. ..... ① ② ③ ④ ⑤ ⑦
26. Adapting quickly to meet changing organizational needs. ..... ① ② ③ ④ ⑤ ⑦
27. Remaining open to new ideas. ..... ① ② ③ ④ ⑤ ⑦

How effective is this employee at . . .	① Extremely Effective ② Very Effective ③ Effective ④ Somewhat Effective ⑤ Not at all Effective	⑦ No Basis to Rate
Judgment and Decision Making		
28. Making decisions in a timely manner.	①②③④⑤	⑦
29. Using factual information when making decisions.	①②③④⑤	⑦
30. Considering alternative courses of action for challenging problems.	①②③④⑤	⑦
31. Thinking in a logical manner.	①②③④⑤	⑦
Interpersonal Skills		
32. Developing trust and openness with coworkers.	①②③④⑤	⑦
33. Interacting effectively with all types of individuals.	①②③④⑤	⑦
34. Focusing objectively on the facts in conflict situations.	①②③④⑤	⑦
35. Expressing opposing viewpoints in a tactful manner.	①②③④⑤	⑦
Giving Feedback		
36. Giving other employees an appropriate amount of feedback about their work performance.	①②③④⑤	⑦
37. Motivating others through the use of feedback.	①②③④⑤	⑦
38. Providing specific work-oriented feedback.	①②③④⑤	⑦
Receiving Feedback		
39. Encouraging other employees to give him/her work-related feedback.	①②③④⑤	⑦
40. Accepting feedback from all types of employees.	①②③④⑤	⑦
41. Making appropriate changes based on input from others.	①②③④⑤	⑦

The person to whom I am providing feedback on this questionnaire is my ***(choose one)***

① Manager's manager ② Manager ③ Direct report ④ Second-level report ⑤ Peer/Team member ⑥ Self ⑦ Other

Please continue on the next page ➤

Comments

Your comments are a very important aspect of the feedback process. Please provide 2 - 3 specific comments for each of the three categories listed below. Your comments will be typed exactly as they are written. If you are concerned that the feedback recipient will be able to determine who wrote the comments, word them in such a way that your identity will not be discovered.

Helpful Hints

- Be specific
- Provide examples
- Focus on work behaviors
- Address issues within the person's control

Please print legibly.

This employee should ***start*** doing . . . because . . .

_____

_____

_____

_____

This employee should ***continue*** doing . . . because . . .

_____

_____

_____

_____

This employee should ***stop*** doing . . . because . . .

_____

_____

_____

_____

360-DEGREE FEEDBACK QUESTIONNAIRE

Directions: Please take a few minutes to provide feedback on this Follow-up Workshop. Your individual responses are confidential. Only group-level -- not individual -- results will be reported. We use and appreciate your comments.

OPTIONAL: Please provide your Social Security number. It will allow analysis for different organizations, job functions, tenure, etc. Again, no individual's answers will ever be reported.

Your SSN: _____

Organization/Group_____ City/Room_____ Date_____

ABOUT 360-DEGREE FEEDBACK . . .	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. 360-Degree Feedback is a useful aspect of the workshops.	1	2	3	4	5
2. The 360-Degree Feedback process provides valuable information about work performance.	1	2	3	4	5
3. The 360-Degree Feedback program helps employees improve their work performance.	1	2	3	4	5
4. I would recommend the 360-Degree Feedback process to others.	1	2	3	4	5
5. The facilitators . . .					
a. explained the 360-Degree Feedback process and materials well.	1	2	3	4	5
b. encouraged participants to meet with their feedback givers.	1	2	3	4	5
c. were enthusiastic about 360-Degree Feedback.	1	2	3	4	5

6. Did you participate as a feedback recipient in the 360-Degree Feedback process? O Yes O No

a. If your answer is "NO," what was your reason for not participating? _____

_____

b. If you answered "YES" to the question above please continue. If you answered "NO," stop here and return your questionnaire to the facilitators. Thank you.

IF YOU RECEIVED FEEDBACK . . .	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Not Applicable
7. I looked forward to participating in the 360-Degree Feedback program.	1	2	3	4	5	
8. I received accurate feedback from my . . .						
a. manager/supervisor	1	2	3	4	5	NA
b. direct reports	1	2	3	4	5	NA
c. peers/team members	1	2	3	4	5	NA
9. I agree with the feedback I received from my . . .						
a. manager/supervisor	1	2	3	4	5	NA
b. direct reports	1	2	3	4	5	NA
c. peers/team members	1	2	3	4	5	NA
10. If I apply myself, I can use my 360 Feedback to develop professionally.	1	2	3	4	5	
11. If I work hard, I can improve in those areas I was rated least effective.	1	2	3	4	5	

12. Based on my 360-Degree Feedback, I plan to . . .

a. informally discuss my feedback with my feedback givers.	1	2	3	4	5	
b. conduct a feedback discussion meeting with my feedback givers.	1	2	3	4	5	
c. ask my feedback givers for specific examples of how I can improve.	1	2	3	4	5	
d. request/volunteer for developmental work assignments.	1	2	3	4	5	
e. attend workshops/training related to my professional development.	1	2	3	4	5	
f. review materials (magazines, books, tapes, etc.) that will help me improve my work performance.	1	2	3	4	5	
g. revise/develop goals or an action plan based on my feedback.	1	2	3	4	5	
h. make behavior changes in the way I do my work.	1	2	3	4	5	
i. other _____.	1	2	3	4	5	

13. The feedback from my _____ was a good reflection of my work performance.

a. manager/supervisor	1	2	3	4	5	NA
b. direct reports	1	2	3	4	5	NA
c. peers/team members	1	2	3	4	5	NA

14. I am confident in my ability to improve my work performance.	1	2	3	4	5	
15. Overall, I am satisfied with the 360-Degree Feedback process.	1	2	3	4	5	

16. How satisfied are you with the ratings you received in the 360 process?

Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied
○	○	○	○	○

COMMENTS ON 360-DEGREE FEEDBACK . . .

17. The *best part* of the 360-Degree Feedback process was _____

_____

_____

_____

_____

18. The 360-Degree Feedback process would be *better if* _____

_____

_____

_____

_____

Thank you for your feedback!

APPENDIX B

POWER ANALYSIS

Power Analysis

Significance criterion	α=.05
Desired power	.80 .85 .90
k_b (number of independent variables)	5[a]
L[b]	12.83 for power of .80 14.39 for power of .85 16.47 for power of .90
f^2; effect size	f^2=.15[c]
n^*; number of subjects[d]	92 for power of .80 102 for power of .85 116 for power of .90

[a] based on largest equation
[b] from Table E.2 in Cohen and Cohen (1983)
[c] based on a medium effect size as defined by Cohen (1988)
[d] based on the following equation from Cohen and Cohen (1983):

$$n^* = L/f^2 + k + 1$$

VITA

Danielle McCray Adams was born in Greenville, North Carolina. She lived there with her parents, Allen and Nikki, and her sisters, Michelle and Nicole, during her childhood years. She attended J.H. Rose High School where she was a member of the National Honor Society, student government association, and the cheerleading team. She entered The University of North Carolina at Chapel Hill in August 1988. During her college years, she was a representative in the student government association and president of her residence hall. She was also a member of Phi Beta Kappa, Psi Chi, and Delta Zeta Sorority. Danielle graduated with Honors in Psychology during May 1992.

In August 1992, Danielle entered East Carolina University where she obtained a Master of Arts Degree in Psychology. In 1994, she entered the doctoral program for Industrial and Organizational Psychology at The University of Tennessee. While completing her doctoral studies, Danielle was involved with research and applied projects. She worked as a consultant for The University of Tennessee's Management Development Center, the Columbia Health Care Association, the Tennessee Assessment Center, and Right Associates. She held assistantships with L.M. Berry and Company, Telecom Data Services, and The Institute of Public Service. During the last three years of her doctoral studies, Danielle worked as an intern for the Tennessee Valley Authority. She received her doctoral degree in May 1999.