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**A MODEL OF THE RELATIONSHIP BETWEEN  
PERFORMANCE FEEDBACK AND GOAL  
SETTING: A CONSIDERATION OF,  
AFFECTIVE COGNITIVE, AND  
PSYCHOLOGICAL STATE  
EFFECTS**

by

Ann-Marie Rabalais Castille, B.S., M.A.

A Dissertation Presented in Partial Fulfillment  
of the Requirements for the Degree  
Doctor of Philosophy

COLLEGE OF EDUCATION  
LOUISIANA TECH UNIVERSITY

August 2018

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THE GRADUATE SCHOOL

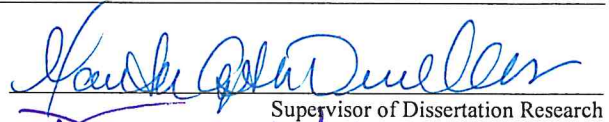
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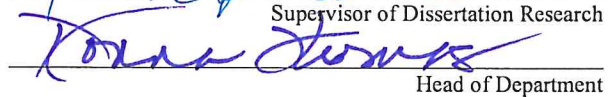
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We hereby recommend that the dissertation prepared under our supervision  
by Ann-Marie Castille

entitled A Model of the Relationship Between Performance Feedback and Goal  
Setting: A Consideration of Affective, Cognitive, and Psychological State  
Effects

be accepted in partial fulfillment of the requirements for the Degree of  
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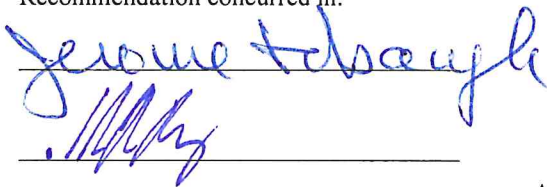
  
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Approved:

  
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## **ABSTRACT**

Performance feedback meetings are often dreaded, perceived to be worthless, and de-motivating for employees (Culbertson, Henning, & Payne, 2013; Rock, 2008).

Although they are intended to enhance motivation and performance (Erez, 1977; Kim & Hamner, 1976), over a third of feedback interventions backfire, resulting in lower rather than higher performance (Kluger & DeNisi, 1996). Motivational theories (i.e., behavioral motivation theory, organizational justice theory, reversal theory, goal setting theory, and theory of planned behavior) provide complementary explanations for the impact of feedback on performance. However, these explanations have not been subjected to comprehensive empirical scrutiny. The purpose of this dissertation was to examine how feedback characteristics (i.e., valence, accuracy, and information type) influence perceptions of justice, affect, motivation, and performance. Specifically, this research tested a process model suggesting that positive (rather than negative), accurate (rather than inaccurate), and nominal (rather than relative) feedback positively affects recipients' perceptions of justice, affect, and motivation, resulting in higher goal setting and, subsequently, higher performance. Additionally, this model suggests that the effects of feedback characteristics are stronger for participants in a telic meta-motivational state (rather than paratelic, or playful state). A 2x2x2 factorial experiment was conducted to test this process model. The participants, who were told they would be performing an information-gathering task for a university website, were recruited via Amazon's

Mechanical Turk. Participants were asked to set a goal for performing this task and also told that they will receive feedback regarding their performance. After their first performance episode, participants were randomly assigned to receive one of six feedback messages (positive or negative; accurate or inaccurate; nominal or relative) and asked to set a new performance goal. Afterward completing a second performance episode, participants were asked to complete a short survey. All hypothesized relationships were tested using structural equation modeling. It was found that feedback valence influences recipients' positive and negative affect. Recipients' positive affect was associated with a stronger desire to respond to the feedback; however, there was no effect of recipients' negative affect on their desire to respond. Feedback valence also positively affected recipients' perceptions of feedback accuracy, such that positive feedback indicating success was more likely to be perceived as accurate by the participants than negative feedback indicating failure. Feedback accuracy was positively related to recipients' perceptions of feedback accuracy; however the relationship weakened when feedback was relative. Recipients' perceptions of feedback accuracy was positively related to their perceptions of distributive justice, and their perceptions of distributive justice were positively related to their desire to respond to the feedback as well as their levels of positive and negative affect. Participants' desire to respond was positively related to the goal level set for Task 2, which was positively related to their performance on Task 2. Motivational state was not found to have an effect on reactions to feedback. The results of this experiment advance research on goal setting and performance feedback by examining the complementary aspects of differing motivational theories. Additionally, the results provide guidance to practitioners delivering feedback.

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Date \_\_\_\_\_

## **DEDICATION**

This dissertation is dedicated to my greatest supporter and source of inspiration,  
my husband, Dr. Christopher M. Castille.



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## **CHAPTER ONE**

### **INTRODUCTION**

Many leaders, managers, and employees across multiple organizations, including human resource professionals, have developed an aversion to performance appraisal (Mueller-Hanson & Pulakos, 2015). A 2012 study found that over 75% of organizational members across levels believe that performance appraisal is in many cases inaccurate and ineffective (CEB Corporate Leadership Council, 2012). The consulting firm, Deloitte (Nabaum, Barry, Garr, & Liakopoulos, 2014) recently found that 58% of executives did not believe that their performance management (PM) system promoted employee engagement or high performance. Often, performance feedback meetings are dreaded and perceived to be worthless and de-motivating for employees (Culbertson et al., 2013; Rock, 2008), whereas they should be a tool for enhancing work motivation (Erez, 1977; Kim & Hamner, 1976). Organizations, such as Adobe and Microsoft, have made recent decisions to eliminate performance ratings altogether, because the practice has been deemed detrimental to motivation (Mueller-Hanson & Pulakos, 2015). Such widespread aversion to performance appraisal is problematic, because feedback regarding one's performance has the potential to be highly beneficial under certain circumstances (Kluger & DeNisi, 1996).

More information is needed for both researchers and practitioners regarding the appropriate implementation of PM practices, which include performance appraisal, goal setting, and performance feedback. While PM refers to the broader process of identifying, measuring, and developing performance as well as aligning performance with an organization's strategic goals, performance appraisal refers to the description of an employee's successes and/or failures (Aguinis, 2009). Performance appraisal is an important and necessary component of an effective PM system (Aguinis, 2009), because the performance appraisal process informs employees and managers of the employee's performance level. In this paper, feedback refers to a message that contains information regarding a comparison of the recipient's performance level to a set goal (Ilies & Judge, 2005).<sup>1</sup> Through this study, I examined the process through which performance feedback affects subsequent motivation and performance in order to enhance the desired and expected results of PM systems.

### **Statement of the Problem**

Why has performance appraisal in many organizations been ineffective at promoting high levels of motivation and performance? According to Mueller-Hanson and Pulakos (2015), performance management does not always have the beneficial effect that is expected because (1) the goal setting inherent in PM is time consuming, too infrequent to be motivational, not challenging enough, and not meaningful; (2) mid-year check-ins are simply mechanical, too infrequent to affect daily performance, and result in the subordinate feeling judged; and (3) evaluations are arduous, burdensome, and provoke

---

<sup>1</sup>It is important to note that for the purposes of the present paper, feedback does not refer to a cyclical loop within a dynamical system, which is the control theory perspective (Bellman, 1964).

defensive reactions among recipients. Taylor, Tracy, Renard, Harrison, and Carroll (1995) contend that performance evaluations are ineffective because they are viewed as invalid by recipients and thus not taken seriously. They may be seen as (and actually be) invalid because objective results are often unavailable, raters are biased and apply different standards, and performance is difficult to measure (Taylor et al., 1995). Mueller-Hanson and Pulakos (2015) advise managers to take into account the motivational consequences of providing feedback that lacks validity and that provokes negative reactions, such as defensiveness and indolence and to focus on taking the appropriate steps to prevent decreased motivation and performance levels.

What information do researchers and practitioners need in order to enhance the effectiveness of PM and to prevent lowered employee motivation and performance? The current literature does indeed provide an extensive amount of valuable information about when and how managers may use performance feedback so that it is beneficial; however, certain components in the process through which feedback affects performance could be clarified. A greater understanding is needed regarding the variables that allow feedback to have optimal effects on motivation and performance, so that employers can alter their PM systems appropriately.

First, a comprehensive understanding of the impact of feedback on motivation is needed so that negative motivational and performance-related outcomes may potentially be prevented. Much research exists on outcomes of feedback (Ilgen, Fisher, & Taylor, 1979; Ilies & Judge, 2005; Kinicki, Prussia, Wu, & McKee-Ryan, 2004; Kluger & DeNisi, 1996; Landy, Barnes, & Murphy, 1978); however, the findings have been inconsistent and cognitive reactions to feedback including perceptions of feedback



accuracy and organizational justice have been largely ignored. Understanding recipient perceptions of feedback accuracy and organizational justice may instruct managers in altering PM practices so that they are seen as valid and fair and therefore not rejected.

Second, a deeper understanding is needed of the components of feedback that drive recipient reactions. The vast majority of studies in the performance-feedback literature have focused on feedback valence and not on how the accuracy and content of feedback affects recipients' reactions. One notable exception to this is provided in research by Ilies and Judge (2005). These researchers examined the effects of accuracy in a context in which the actual accuracy of the feedback was unknown to the participants, since it was *relative* feedback, and the participants did not observe the performance of their fellow participants. Relative feedback is feedback of one's performance in comparison to others' performance, whereas *nominal* feedback concerns one's own performance in comparison to a goal or set standard unrelated to the performance of others (Ilies & Judge, 2005). The type of feedback as relative or nominal may be a component of feedback that influences recipient reactions, because participants can gauge the accuracy of nominal feedback but are unaware of the accuracy of relative feedback without witnessing others' performance. Thus, this dissertation explored whether type of feedback message (i.e., nominal, relative) influences perceptions of feedback.

Lastly, variables that moderate reactions to feedback should be further explored in order to understand the scenarios in which feedback provokes beneficial versus detrimental reactions. A potential moderator that should be considered is recipients' present desire to achieve a goal. The desire to achieve a goal has not been considered as a potential moderator in the feedback – goal setting relationship. In this paper, I propose

the idea that if employees do not care about reaching a goal, they will not have as strong of reactions to feedback regarding whether the goal was met compared to employees who do strongly care about reaching the goal.

In sum, in order to facilitate the process of modifying performance feedback so that it positively affects employee motivation and performance, further research is needed on: (1) how components of the feedback message (valence, accuracy, information type) influence employee reactions, (2) the variables that moderate the relationship between feedback and employees' reactions to feedback, and (3) the direct consequences of reactions to feedback. Enhanced knowledge of feedback components, moderators, and consequences can weaken negative attitudes and strengthen positive attitudes toward PM if it results in managers changing feedback to be motivating as intended. Not only could this enhanced knowledge improve attitudes about performance appraisal, but it could improve performance as well.

### **Purpose of the Present Study**

Performance feedback involves the supervisor and subordinate coming together to discuss the subordinate's performance. This critical component of PM has the potential to be highly motivating for employees, since feedback assists the recipient to track performance goals. Unfortunately, for many employees in our contemporary workplace, feedback sessions are dreaded, de-motivating, and perceived as meaningless (Culbertson et al., 2013; Rock, 2008). Thus, the present dissertation focuses on factors that may improve the feedback experience. My broad goal is to provide researchers and practitioners with useful knowledge regarding how to design and implement a performance-feedback session that enhances the motivation and performance of the

feedback recipient. In order to accomplish this goal, I examined reactions to different types of feedback messages that affect recipients' motivation and performance through this research study. Deeper knowledge of designing and implementing feedback sessions has the potential to guide organizational leaders in altering their performance-feedback practices to be beneficial and motivating.

In the present study, a process model (see Figure 1) was tested to examine the complex relationship between feedback and performance. Feedback valence and feedback accuracy are independent variables in the model and were expected to directly influence recipients' positive affect (PA) and negative affect (NA) as well as their perceptions of feedback accuracy. Recipient motivational state was expected to moderate the relationships between feedback valence and affect, feedback valence and perceptions of accuracy, feedback accuracy and affect, and feedback accuracy and perceptions of accuracy. An additional moderator variable included in the model is feedback information type (FIT), which represents the feedback message providing relative information (comparing the recipient's performance to the performance of others) or nominal information (comparing the recipient's performance to an objective standard unrelated to the performance of others). FIT was expected to moderate the relationship between feedback accuracy and recipients' perceptions of feedback accuracy. The variable, perceptions of feedback accuracy was hypothesized to have a direct influence on recipients' perceptions of distributive justice, which is expected to further influence PA and NA. Affect as well as distributive justice perceptions are expected to have an influence on the recipients' desire to respond to the feedback, and their desire to respond should affect their goal revision for and performance on a subsequent task. This section

will provide a rationale for including each of these variables in the model. The Model and Hypotheses section, presented later in this paper, provides greater detail about the theoretical reasoning behind each relationship hypothesized in the model.

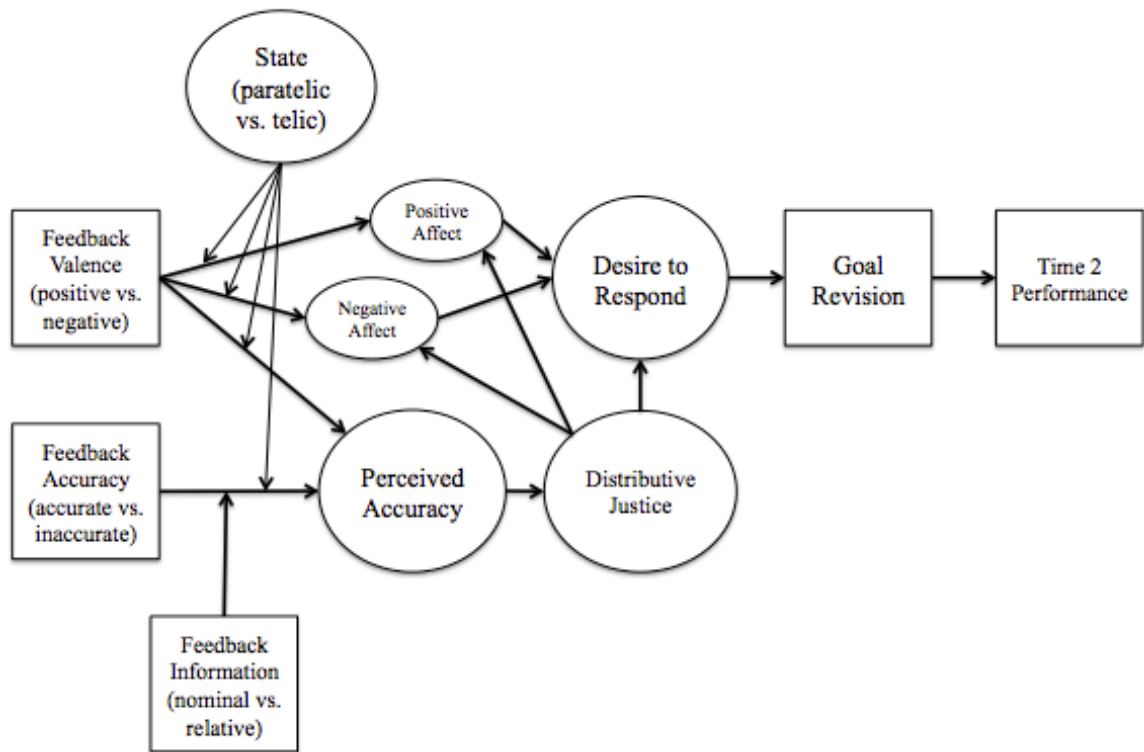


Figure 1. *Model Proposed for the Present Study*

Further research is needed on how certain components of feedback influence employee reactions. Specifically, feedback valence (positive/success or negative/failure) and accuracy may directly affect recipient reactions to feedback, including their affect and perceptions of feedback fairness. Feedback valence refers to the characterization of feedback as positive or negative. In the present paper, positive feedback is defined as feedback indicating that the recipient's performance level has reached or exceeded a set standard, whereas negative feedback refers to feedback indicating that the recipient has

failed to reach a goal. While the present study investigates feedback that is binary, indicating success or failure, real-world feedback may be partially positive and partially negative. Reactions to mixed-valence feedback was not examined in the present study but may be a fruitful area for future research.

This study provides insight into the process of feedback valence affecting employee motivation by altering recipients' affect and perceptions of feedback fairness and accuracy. The feedback valence-motivation relationship is important to understand, because certain types of feedback may do more damage than good. If negative feedback is found to lead to downward goal revision and to lower levels of performance, this suggests that managers should be circumspect about using negative feedback and focus on the positive aspects of performance. Deloitte (Nabaum et al., 2014) implemented a performance-appraisal system that involves withholding all negative feedback from employees. While some research (Ilies & Judge, 2005) supports this practice, other researchers (Podsakoff & Farh, 1989; Sitkin, 1992) have found that failure encourages correcting problems, challenging assumptions, and innovation. In other words, people learn from and are even inspired by their mistakes. Thus, more research is needed on the relationship between feedback valence and performance, since there are mixed research findings (Ilies & Judge, 2005; Podsakoff & Farh, 1989) on whether negative feedback may help or harm organizations. If researchers identify the contexts in which negative feedback damages or improves motivation, managers may understand how to alter environments so that those environments result in perseverance rather than discouragement.

This study examined how feedback accuracy is linked to feedback recipients' motivation through their cognitive and affective reactions to the feedback. For instance, managers may be able to prevent detrimental motivational reactions to feedback by providing feedback that is not only accurate, but also perceived as accurate by the recipient. Feedback accuracy and valence may interact such that negative feedback is only harmful when it is perceived as inaccurate. In other words, if recipients perceive negative feedback as inaccurate, they may not be motivated to improve their performance due to the feedback being deemed as untrue. If negative feedback is perceived as accurate, recipients may realize that improvements in performance are needed. If this is the case, managers should take certain steps to ensure that recipients perceive the feedback to be accurate. The present study investigated whether providing participants with certain types of feedback (e.g. nominal accurate) results in participants viewing feedback as accurate; however, additional methods for effectively manipulating participants' perceptions of accuracy may exist (i.e., engaging in a thorough discussion rather than a brief, one-sided statement of performance). Future research on additional methods for effectively enhancing perceptions of feedback accuracy could be useful.

This study clarifies the affective and cognitive processes that recipients go through that turn negative feedback into low goals and performance. There may be a step in the process that could be managed to reduce the destructive outcomes of negative feedback. Negative feedback may boost NA because of recipients learning that they failed and experiencing negative emotions due to the failure. Negative emotions promote an avoidance response (Gray, 1990), resulting in the recipients decreasing intentions to reach a goal (Ilies & Judge, 2005; Venables & Fairclough, 2009). Support of this study's

hypotheses would suggest that negative feedback harms motivation and would call for future research on methods for preventing decreased motivation following negative feedback. For instance, managers may be able to prevent negative feedback harming motivation by communicating the feedback in a certain way (e.g., “Think of this as an opportunity to improve,” or “These aren’t anything to be ashamed of or upset about.”). Alternately, managers might allow employees time to “cool down” between receiving negative feedback and revising their goals. The present study did not examine the effectiveness of such interventions; however, this is a fruitful topic for future research on performance feedback.

This study investigated variables that moderate the relationship between feedback and motivation, including the recipient’s metamotivational state (Apter, 2005) and the type of information (relative or nominal) provided in the feedback message. Moderating variables indicate under what conditions a certain effect can be expected (Meuller, Judd, & Yzerbyt, 2005); therefore, a moderator analysis may provide insights into when feedback has a positive or negative effect on motivation. Through this study, I clarified whether an employee should be in a certain motivational state when provided with performance feedback. The recipient’s motivational state was considered in terms of the recipient’s current desire to reach a goal and was expected to moderate reactions to feedback. Reversal theory (Apter, 2005) provides a promising framework to conceptualize and assess recipients’ motivational state while receiving performance feedback. According to reversal theory (Apter, 2005), at any point in time, a person desires either to accomplish a future goal that has broader significance (and thus is in the *telic* state) or to simply enjoy present circumstances focusing on the moment and not on

the future (while in the *paratelic* state; Apter, 2005). In this paper, I propose that recipients in the *telic* state, who are focused on achieving a goal, may have stronger cognitive and affective reactions to feedback than those in the *paratelic* state, since feedback consists of knowledge about whether an individual reached a goal (i.e., a future state). Recipients in the *paratelic* state, at the time of receiving feedback, may have weaker reactions to feedback, because they want to live in the moment and are unconcerned about future goals. If detrimental affective (high NA, low PA) and cognitive (perceptions of low feedback accuracy, perceptions of low distributive justice) reactions occur following negative feedback while the recipient is in the *telic* state, managers might consider only providing negative feedback when recipients are in the *paratelic* state. When recipients are in the *telic* state, positive feedback about goal attainment should make them even more likely to experience high levels of motivation, PA, and perceptions of feedback justice, and, ultimately, to set higher goals and meet these goals. If this is the case, recipients may benefit from receiving positive feedback while in the *telic* state. The present study incorporated the recipients' motivational state as a moderating variable and examined whether state explains the circumstances during which feedback is helpful versus harmful.

A second moderator of reactions to feedback investigated in this study is FIT as relative or nominal. Specifically, I examined whether feedback accuracy has a stronger effect on perceptions of feedback accuracy when feedback is nominal rather than relative. When participants do not witness (and are not informed of) the performance of other participants, their judgments of how they performed relative to others will be a guess. As long as participants witness their own performance, they are able to gauge how well they



performed against a nominal goal, thus they should form strong judgments of feedback accuracy. The type of information (relative or nominal) in the feedback message should moderate the relationship between feedback accuracy and recipients' perceptions of feedback accuracy, or belief that the feedback is accurate, since judgments of accuracy can confidently be made when the recipient witnesses performance and cannot confidently be made when the recipient does not have performance-related information. Motivational outcomes may be more strongly affected by nominal rather than relative feedback if perceptions of accuracy are indeed stronger following nominal (versus relative) feedback. Understanding the importance of feedback content in the feedback-goal setting process will demonstrate whether certain types of feedback messages are more effective in motivating employees.

Ultimately, the goal of feedback is to enhance motivation and performance; thus, this dissertation explored how recipient reactions to feedback affect their motivation and performance levels. If we understand recipient reactions to feedback and how those reactions lead to detrimental versus beneficial outcomes (motivation and performance), we can work towards learning how to influence those reactions for the better. As discussed, certain components of feedback (i.e., valence, accuracy, information type) as well as state of mind may affect recipients' cognitive reactions (i.e., perceived accuracy, perceived organizational justice) and affective reactions (i.e., PA, NA). How are these reactions linked to performance? The reactions mentioned have motivational and performance-related consequences. Specifically, cognitive and affective reactions to feedback may affect the recipient's desire to respond to feedback, which may further influence motivation and performance.

In sum, the purpose of this study was to provide evidence for the influence of feedback on recipient motivation and performance through a chain of affective and cognitive reactions. Feedback valence was expected to influence recipients' affect by triggering a biopsychological system that instigates approach or avoidance tendencies (Gray, 1990). These tendencies further influence whether the recipients develop a strong or weak desire to respond. Recipients' desire to respond to the feedback should provoke them to alter their goals based on the feedback. Feedback valence should also affect recipient perceptions of feedback accuracy, since research (Halperin, Snyder, Shenkel, & Houston, 1976; Jacobs, Jacobs, Feldman, & Cavior, 1973; Johnson & Nawrocki, 1967) has shown that recipients have a self-serving attributional bias. In other words, they are more likely to see positive feedback as accurate and negative feedback as inaccurate due to a likelihood of a positive self-concept. Not only should feedback valence influence feedback accuracy perceptions, but actual feedback accuracy should be related to perceptions of feedback accuracy when the participants have evidence of their performance. Recipients' perceptions of whether the feedback accurately reflects their effort should inform justice perceptions, since perceptions of distributive justice are formed by an effort-outcome analysis (Greenberg, 1987). Recipients should experience PA if they feel that the feedback they received aligns with their efforts and NA if they believe the feedback to be unjust (Colquitt et al., 2013). Justice perceptions should also affect the recipient's desire to respond to the feedback, and as mentioned, their desire to respond should influence their goals. The strength of all reactions to feedback are expected to be moderated by the psychological state of the recipient, defined as the recipient's current desire to reach a goal or simply experience enjoyment (Apter, 2005),

because those who want to reach a goal should be more in tune with feedback informing them of their status with reaching the goal. Those who are less concerned with reaching a performance goal should also be less concerned about performance feedback. Based on goal setting theory (Locke & Latham, 1990), performance goals should be positively related to actual performance. A more detailed explanation of this process is provided in the *Proposed Model and Hypotheses* section of this paper.

By using their knowledge of the relationships between variables linking feedback to performance, feedback providers could examine the feedback scenario and make evidence-based assumptions of the recipient's likely response, including their motivation and subsequent performance. These assumptions or expectations could provide direction on how to prevent or promote certain reactions. For instance, if negative feedback negatively influences motivation by enhancing perceptions of inaccuracy and distributive injustice, managers should focus on convincing the recipients that their actual performance level is consistent with the feedback and that the feedback is just. Methods for enhancing recipients' perceptions of feedback accuracy and distributive justice are beyond the scope of the present study; however, these methods may be a beneficial area of future research.

The long-term goal of this study is to improve the conduction of feedback meetings and subsequent motivation of recipients through providing a deep understanding of the feedback – performance process. The findings from this study accomplished that goal in several ways. First, they provided knowledge of whether an employee should be in a certain psychological state during feedback sessions to respond most optimally. Second, this study's findings clarified the type of relationship that

feedback valence has with employee motivation. This study also investigated the importance of providing accurate feedback by demonstrating how this aspect of feedback has an impact on recipient motivation. Fourth, this dissertation provided information as to whether the type of information in a feedback message affects the strength of employees' reactions to feedback accuracy. Fifth, the findings showed how perceptions of organizational justice and accuracy develop following feedback and how these perceptions further affect motivation. Finally, this study intended to provide direction on enhancing employee performance by focusing on characteristics and consequences of feedback.

Performance is the ultimate criterion in the model that was tested through this study. This emphasis on performance signifies the foremost reason why this dissertation is important: Its findings may provide guidance on enhancing employee performance through the use of appropriate feedback. By understanding the relationships between various types of feedback; affective, cognitive, and behavioral reactions; and ultimately performance; managers should know what step(s) in the feedback-performance process to change for the best result.

This dissertation proposed a comprehensive, process-oriented model (see Figure 1) that explains how and when components of feedback affect motivation and performance. This model can provide managers with direction across a variety of types of performance-feedback meetings. These meeting types include those in which positive or negative feedback is delivered, nominal or relative feedback is delivered, and the recipient is in the telic or paratelic state. An explanation of the variables included in the model and of the relationships between them will follow in the next section.

## **Literature Review**

### **Beginning of Research on Work Motivation**

Work motivation is a topic that has been of great interest to industrial and organizational psychologists for many decades. As far back as the 1930s, it was discovered that situational factors can affect the productivity of workers, and that ability does not solely account for workers' performance levels (Mayo, 1933). The Hawthorne Studies were conducted between 1924 and 1932 at an electric factory, Hawthorne Works, and demonstrated that managerial attention and social factors motivate employees more than financial incentives and work conditions. The illumination and bank wiring room studies are two of the Hawthorne studies that yielded valuable insights into work motivation. The illumination study was conducted with the intention of examining how light intensity affected worker productivity. The researchers found that when the light intensity was increased, productivity also increased; however, when light intensity was decreased, productivity continued to increase. The bank wiring room experiment was conducted to examine how incentives influence productivity. Two groups of men who assembled telephone-switching equipment were observed for several weeks. It was found that group norms developed in each of the groups, and those norms, rather than pay incentives, influence the productivity of the men. The general conclusion of the Hawthorne studies was that ability is not the sole determinant of performance, but that motivation influences performance as well.

In the 1950s, the interest in and emphasis on employee motivation and morale grew. Viteles (1953) published a book summarizing research on the determinants of work motivation and satisfaction. In his book, he explained three needs in industry: to increase

production, to promote employee satisfaction and adjustment at work, and to reduce conflict at work. In 1955, Maier conveyed the importance of motivation in the workplace by defining job performance as an interaction between ability and motivation. In the 1960s, motivation became a hot topic following the publication of Locke's (1968) work on goal setting in which he laid out a number of testable hypotheses. Practitioners and researchers have spent decades furthering their understanding of how to enhance the motivation of employees.

### **Early Research on Goal Setting Theory in Organizations**

In the quest for understanding how to enhance employee motivation and performance, *goal setting theory* (Latham & Locke, 1991) has been heavily researched and has shown to have much merit in both laboratory and field settings (Locke & Latham, 2006; Mento, Steel, & Karren, 1987). Goal setting theory was developed in the 1960s after research consistently showed that (1) difficult goals result in higher performance levels, (2) specific (rather than "do your best") goals produce a higher amount of effort put forth, and (3) intentions to behave regulate actual behavior (Latham & Locke, 1991; Locke, 1968). Goal setting theory's great contribution to the motivation literature is evident from the extensive amount of research that has confirmed the theory's predictions. The overarching conclusion of this research vein is that setting difficult, specific goals enhances employee motivation and performance.

While Locke and Latham have made the greatest strides in goal setting research, this topic of inquiry began with previous researchers. In 1960, Siegel and Fouraker conducted a study to examine whether hard, assigned goals resulted in higher performance, defined as negotiation success, than did easy, assigned goals. Two groups

of participants took part in an experimental bargaining task. Group 1 was given a quantitatively high goal, and Group 2 was assigned a quantitatively low profit goal. They found that the first group negotiated higher profits than did the second group.

Research on the goal setting – performance relationship increased following Siegel and Fouraker's (1960) study. In 1965, Dey and Kaur also examined whether hard goals that were assigned resulted in higher levels of performance than easy, assigned goals. These researchers asked their participants to complete a letter cancellation task and found that hard goals produced a higher level of performance than did easy goals. Other goal setting researchers examined the effects of the level of goals set in field studies. Zander and Newcomb (1967) investigated whether goal setting influences the amount of funds raised by various United Fund campaigns over four years. They found that those who set goals that were higher than the amount of money they raised in the previous year raised more money than the campaign groups who did not set a higher goal than what they earned in the previous year. Again, goal setting theory was supported.

Locke (1968) conducted a large number of studies testing goal setting theory and found overwhelming support for its basic propositions: Difficult and specific goals lead to higher performance levels than do easy, general goals. After goal setting theory was widely supported and accepted, researchers (Erez, 1977; Kim & Hamner, 1976) began exploring how other factors, such as performance feedback, fit into the goal setting – performance relationship.

### **Role of Feedback in the Goal Setting – Performance Relationship**

In the 1970s, a popular interest among goal setting researchers was whether feedback was necessary in order for goal setting to enhance performance (Erez, 1977; Kim & Hamner, 1976). Kim and Hamner conducted a quasi-experiment with the purpose of discovering whether intrinsic (self-generated) feedback and/or extrinsic feedback enhanced performance beyond the effects of goal setting alone. In this study, the extrinsic feedback was always positive. Participants included employees in service-type jobs at a telephone company who were divided into four groups. Performance was measured with three objective indicators (cost performance, safety, and absenteeism) and one subjective indicator (service). Management set goals for all participants on a weekly basis for a total of 90 days. At the end of the week, Group 1 received extrinsic feedback only, Group 2 received intrinsic feedback only, Group 3 received both intrinsic and extrinsic feedback, and Group 4 received no formal feedback. Participants provided themselves with self-generated, or intrinsic feedback by rating themselves on the four performance criteria and calculating an overall performance score. Group 3, which received both praise and self-generated feedback, had significantly higher scores for cost performance and safety (i.e., two of the three objective performance measures) than Groups 1, 2, or 4. Kim and Hamner concluded that feedback in combination with goal setting is generally better for performance than goal setting alone. These findings point out the importance of a combination of both intrinsic and extrinsic feedback for enhancing performance.

Erez (1977) conducted another study that demonstrated the importance of performance feedback in the goal setting-performance relationship. Erez sought out to answer the question of whether feedback is necessary in order for goal setting to affect



performance. Locke (1968) had claimed that goals mediate the effect of feedback on performance and that feedback is not sufficient for goal setting to affect motivation. Erez believed that feedback is a necessary component in the goal setting-performance relationship. He hypothesized that self-set goals will be more strongly related to performance when participants are given feedback as compared to when they are not given feedback. Undergraduate students served as participants and were randomly assigned into an experimental condition or a control condition. Those in the experimental condition received feedback, and those in the control condition did not. First, all participants completed a task that involved checking two lists of numbers for discrepancies. Then, only the experimental group was given feedback. Both groups set goals for the second, similar task and then completed the second task. Performance on the second task was significantly higher for the experimental group than for the control group. Erez's results suggest that feedback is a necessary condition for goal setting to positively influence performance, because when individuals are given no feedback on a novel task, they have no clear standard against which to compare their efforts. The model to be tested in the present investigation is built upon Erez's findings. Feedback is expected to have an impact on the goals set by the participants as well as their performance.

After many studies investigated the moderating role of performance feedback on the goal setting-performance relationship, Mento et al. (1987) conducted a meta-analysis summarizing this literature. Mento et al.'s meta-analysis supported certain underlying assumptions of goal setting theory; namely that specific and difficult goals enhanced performance compared to broad, easy goals. Additionally, and more crucially, they found

that including performance feedback resulted in a stronger, positive effect on performance than using specific, difficult goals alone. In other words, performance feedback independently and incrementally affects performance. Unfortunately, a review of the literature failed to explain how these factors drove performance, leading Mento et al. (1987) to call for more research into the mechanisms linking goal setting to performance.

To explain the feedback mechanisms linking goal setting to performance, Kluger and DeNisi (1996) proposed feedback intervention theory (FIT), which posited a performance appraisal feedback mechanism to explain how goal setting factors can contribute to performance. According to FIT, performance feedback makes recipients aware of a gap that defines the distance between a desired performance standard and their actual performance level. These recipients then cognitively appraise this gap by considering the available resources they have for resolving this disparity. When recipients see themselves as being able to utilize resources for resolving these gaps, they feel challenged, resulting in higher performance; however, when they see themselves as lacking the resources for resolving these gaps, they feel threatened by possible harms or losses (e.g., losing their job or failing to get a promotion). After appraising feedback, recipients experience affective reactions that influence how they use their available resources.

In developing FIT, Kluger and DeNisi (1996) conducted a meta-analysis of the feedback intervention effects. Their results showed that the effect of feedback on performance is complex and has much variability. As is commonly noted by those who cite Kluger and DeNisi, over 33% of the studies included in Kluger and DeNisi's analysis

suggest that feedback interventions lower performance levels. In other studies, feedback had no effect on performance. While on average feedback did improve performance by approximately 0.4 of a standard deviation, the negative null and negative findings proved alarming by suggesting that providing feedback may be somewhat risky. To identify when feedback interventions positively affected performance, Kluger and DeNisi conducted a moderator analysis. In extracting themes from their exhaustive literature review, they described three broad classes of variables that determine the effect a feedback intervention has on performance: (1) the cues of the feedback message (these determine which performance gap a recipient will pay attention to), (2) the nature of the task performed (e.g., if the task is interesting, recipients are unlikely to become distracted), and (3) situational and personality variables determine how a recipient eliminates a gap (e.g., industrious individuals working in a situation where they can work harder to resolve a gap will likely exert greater effort). The present study further builds on insights from Kluger and DeNisi (1996) by exploring the cognitive, affective, and motivational processes through which feedback affects performance.

FIT proposes an explanation of both affective and cognitive reactions to performance feedback; however, much of the research on performance feedback only focuses on one of these two types of reactions. After discussing how feedback has been operationalized, the following two sections of this paper will summarize the affect-focused and cognition-focused feedback research that provides further foundational support for the present study.

## Research into the Multi-Faceted Nature of Performance Feedback

Performance feedback is a multi-faceted concept that researchers (e.g., Albright & Levy, 1995; Anderson & Rodin, 1989; Cianci, Klein, & Seijts, 2010; Ilies, DePater, & Judge, 2007) have operationally defined and manipulated in inconsistent ways. Feedback can be described according to its various characteristics, including but not limited to valence, specificity, frequency, accuracy, and information type. Table 1 provides a summary of the multiple ways feedback has been operationalized in past research.

Table 1

### *Operationalizations of Feedback*

Citation	Characteristics of Feedback Manipulated	Feedback Message Content
<b>Albright &amp; Levy (1995)</b>	Positive/negative	Performance rating of 0-100 Positive: a number higher than self-rating Negative: a number lower than self-rating
<b>Anderson &amp; Rodin (1989)</b>	Positive/negative Relative only	Positive: nine out of 10 correct and 95 <sup>th</sup> percentile Negative: six out of 10 correct and 55 <sup>th</sup> percentile
<b>Anshel (1987)</b>	Positive/negative	Positive: "Excellent" "Great" Negative: "Poor" "Bad"
<b>Chong &amp; Park (2013, April)</b>	Positive/negative	Positive: (86-88.9)% of solutions found for the task Negative: (32-34.9)% of solutions found for the task
<b>Cianci et al. (2010)</b>	Specific or general Negative only	General: "You performed very poorly on this task." Specific: "The average score on this task for [name of university] students is 95%. Your individual score on this task, rounded to the nearest 5%, is 60%."

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<b>DeGregorio &amp; Fisher (1988)</b>	Top-down/simple participative feedback discussion/private self-appraisal with participative discussion/joint rating discussion	Not specified
<b>Donovan &amp; Williams (2003)</b>	Goal-performance discrepancy	Not specified
<b>Erez (1977)</b>	Relative only	“Your performance was among the highest 10%/25%/50%/75%/90%.”
<b>Ilgen, Mitchell, &amp; Fredrickson (1981)</b>	Specific in quantity, specific in quality, and general	“This is not very good performance.” They received an explanation that was general, specific in terms of quantity, or specific in terms of quality on how they performed compared to others.
<b>Ilies et al. (2007)</b>	Positive/negative	“You performed better than 35-80% of participants.”
<b>Ilies &amp; Judge (2005)</b>	Positive/negative Nominal/relative Accurate/random	Relative: “You have performed better than (35-80%) of the participants.” Nominal: Information about difference between the number of words they thought they could generate and the number that they actually did generate.
<b>Kim &amp; Hamner (1976)</b>	Evaluative extrinsic (supervisory) feedback/nonevaluative intrinsic (self-generated)	Extrinsic: “X number of workers in the work group met the previously determined weekly goals.” Intrinsic: Self-ratings on safety, absenteeism, service, quality, money spent
<b>Nease, Mudgett, &amp; Quinones (1999)</b>	Positive/negative	Positive: “You performed at a level that was 20% above the goal.” Negative: “You performed at a level that was 20% below the goal.”

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<b>Podsakoff &amp; Farh (1989)</b>	Positive/negative Credible or incredible	Positive: "You performed very well. Your performance was two above average." Negative: "You did not perform well. Your performance was three below average." Credible: "The evaluation is based on a comparison of your performance with the performance of 300+ college students on the same test." Incredible: "The evaluation is based on the experimenter's experience."
<b>Tolli &amp; Schmidt (2008)</b>	Positive/negative	Positive: "You found 70% of the possible solutions." Negative: "You found 30% of the possible solutions."
<b>Venables &amp; Fairclough (2009)</b>	Positive/negative	Positive: "You had a 10% progressive increase of performance accuracy." Negative: "You had a 10% progressive decrease of performance accuracy."

Most frequently, researchers have examined feedback valence (Albright & Levy, 1995; Anderson & Rodin, 1989; Anshel, 1987; Chong & Park, 2013; Derryberry, 1991; Ilies et al., 2007; Nease et al., 1999; Tolli & Schmidt, 2008; Venables & Fairclough, 2009); however, valence is not the only critical characteristic of feedback that has an effect on important outcomes, such as recipients' fairness perceptions or goal revision. The studies on feedback valence vary in whether the feedback was relative or nominal, specific or general, accurate or inaccurate, or frequent or seldom. For instance, like the present study, Ilies and Judge (2005) examined feedback in terms of its accuracy, valence, and information type (relative or nominal). In their first study, participants were randomly assigned to receive relative feedback that was either accurate or random (e.g., "You have performed better than 35% of the participants."). In their second study, the

participants were randomly assigned to set either nominal or relative goals. Those assigned nominal goals estimated the number of words they would be able to generate, and those with relative goals estimated the percentage of participants they would be able to outperform. The feedback that participants received was goal-performance discrepancy feedback (which informs individuals of their performance relative to their goal) and relative feedback respectively.

Other researchers have chosen to study different aspects of feedback. Kinicki et al. (2004) examined the frequency, specificity, and valence of feedback received by employees at a bank two weeks after their most recent performance appraisal. Feedback frequency was assessed by asking, “How often does your supervisor tell you how well you are doing overall?” (p. 1061). Feedback specificity was measured by asking, “How specific was the feedback?” (p. 1061). Feedback valence was assessed by asking about the proportion of positive versus negative feedback they had received.

The studies of Ilies and Judge (2005) and Kinicki et al. (2004) demonstrate how feedback can take different forms. These and other feedback researchers (Chory & Westerman, 2009; DeGregorio & Fisher, 1988; Geddes, 1993; Geddes & Linnehan, 1996) have studied the different components of feedback and have utilized various operationalizations of the construct (Donovan & Williams, 2003; Erez, 1977; Ilgen et al., 1981; Kim & Hamner, 1976). The problem is that this inconsistency makes drawing comparisons across these studies difficult. Clarity is needed around the components of feedback that exist and the various ways feedback can be manipulated. Geddes (1993) examined the dimensionality of performance feedback by studying the types of information that recipients take from feedback. First, Geddes had participants describe an

example of a performance-feedback message that they had received at work. Afterwards, an additional group of participants were asked to sort these messages into groups based on message similarity. Geddes found that participants tended to group these messages into two major categories indicating two dimensions of feedback. The primary dimension of feedback was valence (positive or negative) and the secondary dimension was sensitivity (respectful or disrespectful, threatening or nonthreatening).

Geddes and Linnehan (1996) expanded on Geddes's (1993) research on the dimensionality of feedback, focusing on the components of positive and negative feedback separately. These researchers replicated the methodology of Geddes by having the first groups of subjects describe feedback messages that they had received, and a second group of participants sort the messages based on similarity of themes. This method differed from that of Geddes (1993) by having two conditions, one in which only positive feedback messages were described and the second in which only negative feedback messages were described. Using multidimensional-scaling techniques, Geddes and Linnehan found that positive feedback had two dimensions and negative feedback had four dimensions. The first dimension of positive feedback was no instruction/praise versus instruction/guidance (if you need improvement you get instruction, if not, you get praise). The second dimension captured whether the message was process or product focused. A process-focused message refers to feedback that is received while the task is being performed, and a product-focused message refers to feedback that is received after the task is completed and thus captures performance outcomes. The four dimensions of negative feedback that emerged were clarity, constructiveness, cognizance, and consistency. Feedback *clarity* refers to the extent to which the feedback information is



explicit or ambiguous. The *constructiveness* is the extent to which the feedback is useful for improving one's performance. The *cognizance* reflects the extent to which the individual providing the feedback is knowledgeable about the circumstances under which the individual performed the job. The fourth dimension, *consistency*, refers to whether the standards of evaluation are clear or inconsistent. Geddes's research shows that feedback has multiple dimensions that are arranged hierarchically. Feedback tends to be classified according to its valence and sensitivity initially, but its lower-level dimensions (e.g., process- or product-focus, cognizance) allow for describing feedback in greater detail.

While feedback valence has been widely studied, some researchers have disregarded feedback valence altogether. Instead, feedback has been described in terms of being top-down or participative (DeGregorio & Fisher, 1988), quality- or quantity-focused (Ilgen et al., 1981), relative or nominal (Erez, 1977), or supervisory or self-generated (Kim & Hamner, 1976). It has also been operationalized as the extent to which performance differs from the goal (goal-performance discrepancy; Donovan & Williams, 2003). The next section of this paper describes several ways that feedback has been defined and manipulated other than according to its valence.

DeGregorio and Fisher (1988) did not manipulate feedback according to valence but instead randomly assigned their participants into one of five feedback conditions including (1) no feedback, (2) top-down feedback (no participation and were simply told how well or poorly they had performed on each dimension), (3) simple participative feedback (participants received feedback and were encouraged to participate in the feedback section), (4) private self-appraisal with participative discussion (same as three but the self-appraisal was not discussed) and (5) joint rating discussion (self-appraisal

was conducted, the self and supervisory appraisals were compared, discrepancies were reconciled via discussion, and the rating form was completed that combined both sets of ratings). This feedback provided to participants in conditions two through five consisted of four performance dimensions (social flexibility, organization and planning, decision-making, and problem analysis). The researchers measured the perceived accuracy of the feedback and found that the participative approaches resulted in more positive recipient perceptions than the non-participative methods.

As opposed to DeGregorio and Fisher's (1988) four-dimension classification of feedback, Ilgen et al. (1981) classified feedback according to two dimensions. In their study, Ilgen et al. manipulated the content of the feedback message according to its quantity or quality and specificity. All participants received feedback that indicated the same level of performance. The feedback messages varied in that some were general whereas others were specific, and some messages informed participants of the quality of their performance while other messages referred to performance quantity. In each condition, participants received a paragraph that began with the statement, "This is not very good performance." The remainder of the feedback message explained performance in either general or specific terms and regarded either its quantity or quality, depending on the condition. They found that specific, rather than general feedback tended to result in more positive evaluations of the supervisor.

Kim and Hamner (1976) examined yet another characteristic of feedback not addressed by Ilgen et al. (1981) or DeGregorio and Fisher (1988): its classification as supervisory or self-generated. Kim and Hamner randomly assigned participants into four groups, each of which received either supervisory or self-generated feedback. Participants

across all four groups were asked to set goals, however, only three groups received feedback on goal attainment. Group 1 received supervisory feedback, which was operationally defined as having work groups receive information from their supervisor weekly about how many workers in the groups had previously met the determined weekly goals. Group 2 received self-generated feedback, which involved self-ratings on safety, absenteeism, service quality, and budget adherence, and weekly meetings during which the supervisors would meet with them to set goals, or reemphasize goals, for the current workweek. Group 3 received both supervisory and self-generated feedback, and Group 4 received no feedback. They found that when either supervisory or self-generated feedback is provided, performance is highest.

In conclusion, feedback researchers have operationalized feedback in a variety of ways. While valence has been the most frequent component of feedback studied, feedback credibility, information type, specificity, frequency, and other characteristics have been considered (Ilgen et al., 1981; Ilies & Judge, 2005; Kinicki et al., 2004). The present study focused on three feedback components: valence, accuracy, and information type. The next two sections summarize existing research on the cognitive and affective reactions to performance feedback and thus provide support for the design of the present study.

### **Cognitive Reactions to Feedback**

Following the reception of performance feedback, recipients tend to engage in a thought process that consists of comprehending and judging the information and deciding how to move forward considering those judgments. Several researchers (Ilgen et al., 1979; Kinicki et al., 2004; Landy et al., 1978) have developed models of the cognitive

reactions to feedback, which include perceptions of feedback accuracy and fairness. In the following section of this paper, research conducted on perceptions of feedback accuracy, fairness, and organizational justice will be summarized.

### **Perceptions of Feedback Accuracy**

Research (Kinicki et al., 2004) suggests that after receiving feedback, recipients cognitively appraise the extent to which the feedback reflects their performance level thus forming a perception of the feedback's accuracy. That perception of feedback accuracy then informs the recipient about whether the feedback is fair or just. Ilgen et al. (1979) conducted a process-oriented review and developed a model to fill in the gaps in the literature regarding: (1) the effects of feedback on performance-related behaviors, (2) the links between the characteristics of feedback and recipients' psychological processes, and (3) the multi-dimensional nature of feedback. The purpose of their paper was to explain how the recipient perceives, accepts or denies, and responds to performance-appraisal feedback. According to their proposed model, feedback is a couplet consisting of the actual feedback message and the source. That feedback couplet effects the recipients' perceptions of the feedback. Ilgen et al. distinguished between four stages in recipients' processing of feedback. First, recipients perceive the feedback. Then, they develop a level of acceptance of the feedback. Third, recipients form a desire to (or not to) respond to the feedback. And lastly, they develop an intended response (e.g., set goals). The characteristics of the feedback, the source, and the recipient each have an impact on the outcome of each of the first three stages (the recipients' responses to and perceptions of the feedback). See Figure 2 for Ilgen et al.'s model.

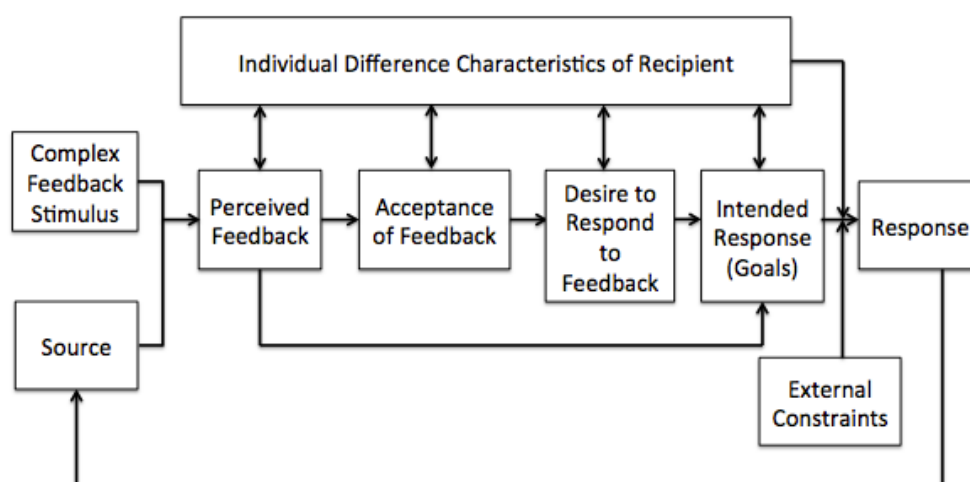


Figure 2. *Ilgen et al. (1979)*

Ilgen et al. (1979) make several points in the description of their model that are particularly interesting and relevant for the present investigation on the consequences of feedback. Feedback recipients form an *acceptance* of feedback, defined as a belief that the feedback is an accurate portrayal of their performance. This construct is conceptually the same as perceptions of feedback accuracy, which was considered in the present study. According to the model, feedback acceptance directs the recipients' desire to respond to feedback; therefore, feedback acceptance should influence their intentions and goals for future performance. As described in Ilgen et al.'s (1979) model, characteristics of feedback affect recipients' acceptance of the feedback. Research (Halperin et al., 1976; Jacobs et al., 1973; Johnson & Nawrocki, 1967) has shown that feedback valence affects recipients' feedback acceptance and desire to respond to the feedback. This research has revealed that positive feedback is nearly always perceived as accurate, and negative feedback is more likely to be deemed inaccurate and rejected than positive feedback. Another characteristic of the feedback message that should influence the recipient's

acceptance of feedback, desire to respond, and intended response (goal) is the actual accuracy of the feedback message. When recipients have evidence of their performance and accurate feedback, their acceptance of the feedback should be higher than it would be in situations when feedback is inaccurate due to the accurate feedback matching the evidence they have of their performance. Therefore, not only should recipients be more likely to accept accurate feedback, but they should also have greater desires to respond to the feedback and higher behavioral intentions or goals. The present study examined the valence and accuracy of the feedback message as an antecedent of feedback acceptance. It is important to note that feedback accuracy should not be strongly related to perceptions of accuracy, or acceptance, when the recipients have no evidence of their performance level. This issue will be discussed in more detail later in this paper.

Kinicki et al. (2004) conducted a study that tested the model proposed by Ilgen et al. (1979). These researchers examined cognitive variables that were hypothesized to act as mediators of the relationship between feedback and subsequent performance. According to their model, a feedback-rich environment (where employees receive frequent, positive, and specific feedback) and source credibility (recipient's perception of the supervisor as a credible source of feedback) each affect the recipient's perceived accuracy of feedback, desire to respond to feedback, and intended response. Those three variables are then hypothesized to affect the recipients' actual behavioral response to the feedback. The hypothesis that perceived accuracy would affect the desire to respond is based on self-consistency theory (Korman, 1970), which suggests that recipients should respond in a manner that is consistent with their acceptance of feedback. Kinicki et al. (2004) hypothesized that feedback accepted as accurately representing performance will

result in a high desire to respond to the feedback, and feedback perceived as inaccurate will result in a low desire to respond. The notion that the desire to respond influences the intended response, and the intended response is associated with the behavioral outcome is based on Ajzen's (1991) theory of planned behavior. The basic notion of Ajzen's theory is that attitudes toward a behavior, subjective norms, and perceived behavioral control each affect intention to perform the behavior, and intention directly affects whether the behavior actually occurs. A more comprehensive description of this theory is included in a later theoretical overview section of this paper.

In Kinicki et al.'s (2004) study, participants included loan officers across multiple branches of a bank. Surveys were administered two weeks after the most recent performance appraisal, and performance ratings were collected one year later at the end of the performance cycle. Actual feedback was not manipulated in this study. The recipients' judgments of the frequency, specificity, and valence of the feedback were assessed and considered to be the *feedback-rich environment*. The proposed relationships in the model were supported. Recipients perceived the feedback to be more accurate when it was positive, specific, and frequent and when the source was trustworthy and competent (credible). See Figure 3 for their model.

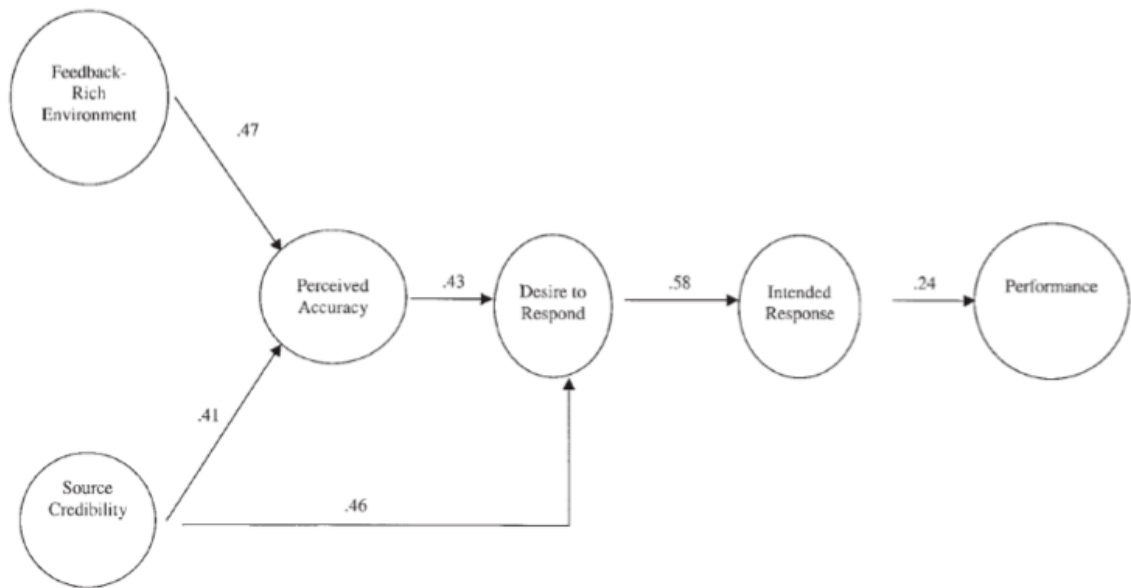


Figure 3. *Kinicki et al. (2004)*

Kinicki and colleagues (2004) emphasize the importance of managers providing feedback in a way that is perceived as accurate in the eyes of the recipient, because perceived feedback accuracy is the first cognitive variable of several that mediate the recipients' responses toward the feedback. They suggest future research on the predictors of perceived feedback accuracy other than feedback-rich environments and source credibility. Kinicki and colleagues also suggest future research on how perceptions of organizational justice are related to perceived feedback accuracy and the desire to respond. They propose the idea that perceptions of interactional justice (i.e., managers communicating truthfully and treating subordinates with respect) may positively influence recipients' desire to respond to feedback. The present study addresses these requests for research by examining the effect qualities of performance feedback have on recipient perceptions of feedback accuracy and organizational justice. The focus on organizational justice will be explored in the subsequent section of this paper.



Judgments of feedback accuracy that form following feedback have significant consequences, including influences on the desire to respond, goal setting, and performance (Ilgen et al., 1979; Kinicki et al., 2004; Podsakoff & Farh, 1989). Podsakoff and Farh investigated the effects of feedback valence and soundness on subsequent goal setting, performance, and satisfaction with performance. They based their hypotheses on the notions of social learning theory (Bandura & Cervone, 1983) and control theory (Carver & Scheier, 1981). Control theory suggests that reactions to performance feedback depend on a desire to minimize a goal-performance discrepancy. Thus, recipients of positive feedback should have no goal revision and no change in performance level. Those who receive negative feedback should have increased levels of effort and performance or downward goal revision. Feedback valence was expected to positively affect the recipients' satisfaction with their performance. They hypothesized that feedback soundness would strengthen the effects of feedback valence on goal setting, performance, and satisfaction. Satisfaction with performance and self-set goals were expected to act as mediators in the relationship between feedback valence and performance. Participants included college students who were randomly assigned to one of five groups: (1) positive sound feedback, (2) negative sound feedback, (3) positive unsound feedback, (4) negative unsound feedback, and (5) no feedback. They underwent seven trials of a task that involved listing as many objects as possible in one minute that can be described by a specified adjective. Then, they were provided with their average number of objects across the seven trials and feedback. The feedback they were given was bogus, normative feedback explaining that their performance level was either two points above (positive) or three points below (negative) the average. Those in the sound

conditions were told that their performance was compared to 300 students, and those in the unsound condition were told that the feedback information was simply based on the experimenter's experience. Then, they completed the questionnaire, set goals for the next session, and completed the task seven additional times.

Podsakoff and Farh (1989) found that negative feedback resulted in recipients becoming dissatisfied with their performance and performing at a higher level on a later task compared to those who received positive feedback or no feedback. This finding supports the assumptions of control theory. Feedback soundness augmented the effects of feedback valence. Sound feedback had a stronger effect on subsequent goal setting, performance satisfaction, and actual performance than unsound feedback. Again, research shows that it is crucial for the recipients to believe that the feedback is accurate, because their perceptions of feedback accuracy affect goal setting and performance. While Podsakoff and Farh examined feedback accuracy perceptions as a moderator of the relationship between feedback valence and goal setting, the present study examined the recipients' perceptions of feedback accuracy as a mediator in the feedback-goal setting and performance relationship, because I am interested in the role of actual feedback accuracy as a direct influencer of perceptions of feedback accuracy, which were expected to directly influence the development of distributive justice perceptions.

In short, existing research suggests that the credibility of feedback, judged from the source or the message characteristics, affects the recipients' perceptions of feedback accuracy, goal setting behaviors, and performance (Kinicki et al., 2004; Podsakoff & Farh, 1989). Researchers have called for a focus on additional predictors of feedback accuracy perceptions, other than the feedback valence, frequency, specificity, and source

credibility (Kinicki et al., 2004). The true accuracy of the feedback accuracy has been ignored as a predictor of recipient perceptions of feedback accuracy in much of the research. The present study examined the effects of feedback accuracy and feedback valence on the recipients' perceptions of feedback accuracy.

### **Perceptions of Fairness and Organizational Justice**

According to organizational justice theory (Greenberg, 1986), individuals judge the outcomes they receive according to whether that outcome reflects the efforts they put forth. If the outcomes and efforts do not compare, the recipients consider the outcome unjust. In this paper, I propose that recipients form perceptions of justice following the reception of feedback based on whether their performance level matches the feedback they receive. While there is a gap in the feedback literature on perceptions of justice as a cognitive reaction to feedback, several researchers have suggested that perceptions of feedback fairness might influence goal acceptance, motivation to improve performance, and task performance (Chory & Westerman, 2009; Erdogan, 2002; Landy et al., 1978; Locke, 1968). Because of the crucial outcomes of perceptions of feedback fairness, the variables that form fairness perceptions are an important area of study. Researchers have demonstrated that components of feedback, such as valence and accuracy, affect fairness perceptions (Evans & McShane, 1988; Greenberg, 1986). While limited, research (Stoffey & Reilly, 1997) has also shown that feedback components affect distributive justice perceptions; however, more additional research is needed on the feedback-justice relationship. This section of the paper will explore the research on recipients' fairness and justice perceptions that develop in response to performance appraisal feedback.

Landy et al. (1978) claimed that individuals will accept goals set for them depending upon their perceptions of the fairness of the performance appraisal system. Therefore, they conducted a study to identify factors that influence perceptions of the fairness and accuracy of performance evaluation information. They based their hypotheses on Lawler's (1967) model of performance appraisal, which implied that the entire system (not only the evaluation tool) affects the validity of performance ratings. Lawler included fairness and acceptability of the performance appraisal system as factors in his model. Landy and colleagues administered questionnaires to employees in the production division of a manufacturing company. The survey included items regarding the frequency, quality, and outcomes of performance appraisals. They found that appraisal frequency, goal identification, and supervisor knowledge of the recipient's level of performance and job duties were significantly related to recipient perceptions of fairness and accuracy. The present study examined whether components of feedback and goals not investigated by Landy et al., including valence, accuracy, and information type are related to recipient perceptions of fairness and accuracy as well.

While Landy et al. (1978) studied the effect of feedback characteristics on perceptions of feedback accuracy, Chory and Westerman (2009) examined whether components of feedback affects organizational-justice perceptions focusing on negative feedback specifically. Chory and Westerman asked participants to describe a time when they received negative feedback at work. The participants were asked to describe the feedback message using the four dimensions of negative feedback identified by Geddes and Linnehan (1996; clarity, constructiveness, cognizance, and consistency). Chory and Westerman assessed the participants' perceptions of each feedback dimension using

7-point semantic-differential scales. Their findings suggested that all four negative feedback dimensions predict distributive justice, procedural justice, and interactional justice (which includes informational justice and interpersonal justice; Greenberg, 2011). While Chory and Westerman provide evidence that components of negative feedback affect perceptions of organizational justice, further research is needed to clarify the relationship and extend the model. The present study examined not only the effect of negative feedback on justice perceptions, but the effect of positive feedback as well. If recipients are more likely to perceive negative feedback as unjust, then positive feedback may enhance their justice perceptions. This hypothesis is consistent with the “credibility gap” research (Halperin et al., 1976; Jacobs et al., 1973; Johnson & Nawrocki, 1967), which suggests that recipients are more likely to believe positive feedback to be true and negative feedback to be untrue, since self-perceptions tend to be in line with positive feedback. Not only might feedback valence enhance the believability or acceptance of feedback, but it may influence the perceived fairness or justice of the feedback as well.

Erdogan (2002) also studied the role of organization justice in the performance appraisal process. He developed a model of the antecedents and consequences of justice perceptions in performance appraisals. For distributive justice specifically, he proposed the following antecedents: favorability of ratings, perceived basis of leader-member exchange (LMX), and raters’ use of information. According to Erdogan, the relationship between performance ratings and distributive justice should be moderated by LMX quality, since LMX quality increases the employees’ expectations of supervisors. The perceived basis of LMX is another proposed antecedent of distributive justice perceptions. When employees do not have access to the performance ratings of their

coworkers, they judge the quality of the relationship they have with their leader, or LMX, in comparison to that of their coworkers to guess their relative performance ratings.

Erdogan (2002) proposed that the type of information employees perceive is used by managers in appraising performance is an antecedent of distributive justice perceptions. Specifically, he hypothesized that the use of consistency (behavior in the same setting across occasions) information should be positively related to distributive justice perceptions, because consistent information suggests that the rater considered multiple performance episodes across a period of time and did not base the rating on one episode which may not be a typical representation of performance. He hypothesized that distinctiveness (behavior in different settings) information should be positively related to distributive justice perceptions because, similar to the use of consistency, considering behaviors across different settings when deciding on a rating allows the rater to access information about typical performance and not performance in an isolated or unique setting. Erdogan also proposed that use of consensus (how others behave in same setting) information should be negatively related to distributive justice perceptions, because consensus information involves comparing the performance of various individuals in the same setting. Recipients may view a comparison rating as an inaccurate representation of their true performance, since it is a comparison of their performance with the performance of others, which the recipients cannot control. Consistency and distinctiveness information are both nominal, with comparisons of behavior being made according to personal standards or past behavior, and consensus information is relative.

Two antecedents of justice perceptions considered by Erdogan (2002) are relevant for the present study: feedback valence and FIT. In this study, feedback valence is

expected to influence distributive justice perceptions through perceptions of feedback accuracy, because individuals tend to overestimate their contributions thus forming positive self-concepts that are consistent with positive feedback and inconsistent with negative feedback, and when feedback is consistent with beliefs, it is judged as true and just (Ashford, 1989; Harris & Schaubroeck, 1988). In opposition to Erdogan's hypotheses, I hypothesize that feedback information as nominal or relative will indirectly influence distributive justice. Recipients are expected to have stronger judgments of feedback accuracy following nominal feedback than relative feedback, because recipients have evidence as to whether nominal feedback is accurate and lack evidence of the accuracy of relative feedback assuming they do not witness competitors' performance. Recipients will likely consider their perceptions of feedback accuracy when forming perceptions of distributive justice, as mentioned previously. LMX variables were not considered in the present study, since the experimental situation does not allow for the participants to form relationships with a leader. Erdogan also discussed consequences of distributive justice perceptions, which include motivation and task performance, the two focal outcome variables in the present study.

In sum, research suggests that recipients form fairness and organizational justice perceptions based on feedback characteristics (Chory & Westerman, 2009; Evans & McShane, 1988; Greenberg, 1986; Landy et al., 1978; Stoffey & Reilly, 1997), and those perceptions have crucial motivation- and performance-related outcomes (Chory & Westerman, 2009; Erdogan, 2002; Landy et al., 1978; Locke, 1968). Researchers have called for more studies examining the link between feedback and organizational justice (Chory & Westerman, 2009) and the outcomes of justice, such as the desire to respond to

feedback. The focus of the present study was on distributive-justice perceptions, which are defined as recipients' judgments of the fairness of the performance rating they received based on a comparison of the rating with their efforts (Erdogan, 2002). In other words, individuals compare their efforts with the reward or outcome they received, and that comparison is the basis on which distributive justice perceptions are built (Greenberg, 1987). Erdogan (2002) stated, "In the performance appraisal context, distributive justice refers to perceived fairness of performance ratings" (p. 566). Since feedback is information about a performance rating, and feedback recipients form perceptions of distributive justice by comparing performance ratings with effort levels (Erdogan, 2002), distributive justice perceptions are relevant and critical to assess when studying reactions to performance feedback.

After a review of the relevant extant literature, the cognitive variables that seem to play an important role in explaining how feedback affects motivation are recipient perceptions of feedback accuracy and organizational justice. The proposed model tested the role of these cognitive reactions to feedback by investigating the direct effects of feedback valence and accuracy and the moderating effects of FIT and recipient psychological state on feedback accuracy perceptions. Feedback accuracy perceptions were expected to lead to the development of distributive-justice perceptions, which were expected to further relate to goal setting through influencing the recipients' desire to respond.

### **Affective Reactions to Feedback**

In recent years, a stream of research has been growing, examining the role of affect in the feedback – goal setting – performance relationship. Researchers (Ilies &



Judge, 2005) have studied affect as a mediator. Specifically, they have shown that affect changes in response to feedback and influences motivation and performance. Affect has also been studied as a moderator, or situational variable, and has been shown to change the direction of the feedback-goal setting relationship (Chong & Park, April 2013). The next section of this paper reviews the literature that examines the effect of feedback on positive and NA.

Kluger, Lewinsohn, and Aiello (1994) investigated the effect of feedback valence (midterm grades) on mood (pleasantness and arousal) through a study involving undergraduate students. They hypothesized that feedback valence would have a linear relationship with pleasantness, because after receiving feedback, recipients engage in a cognitive appraisal of the feedback judging it as either progress toward an important goal and thus a benefit or a lack of progress and thus harmful (Parkinson & Manstead, 1992). When feedback is judged as harmful, negative emotions occur as a coping mechanism, and when it is judged as a benefit, positive emotions occur from a perception of reward or success (Lazarus, 1991). Kluger et al. (1994) also hypothesized that feedback valence would have a curvilinear, U-shaped relationship with arousal such that extremely negative or positive feedback would lead to high arousal, whereas moderate feedback would lead to low arousal. Their reasoning behind the non-linear hypothesis is that extreme feedback signals a deviation from internal performance standards, which are typically moderate. Thus, extreme feedback provokes high levels of arousal from the feeling that the recipient exceeded or failed to reach an internal standard, whereas moderate feedback does not enhance arousal due to the indicated performance level being expected and in line with an internal standard. Participants completed a mood

questionnaire immediately after receiving their midterm exam results. In the control condition, students were given the mood questionnaire at the beginning of class or before the break. The results supported both hypotheses. Feedback valence was positively and linearly related to pleasantness and curvilinearly related to arousal. Kluger et al.'s study provides evidence of the direct effect that feedback valence has on mood. The present study's hypothesis is consistent with these researchers' findings: feedback valence will have a positive influence on affect. Specifically, positive feedback was expected to lead to high levels of PA and low levels of NA, and negative feedback was expected to lead to high levels of NA and low levels of PA.

Ilies et al. (2007) conducted research to explain individuals' affective reactions to feedback. They sought out to answer three questions. First, does feedback influence positive and NA within individuals over time? Second, is the relationship between positive feedback and PA different in intensity and direction than the relationship between negative feedback and NA? And third, does self-esteem moderate the relationship between feedback and affective responses? They based their hypotheses on social cognitive theory (Bandura, 1986) and behavioral motivation theory (Gray, 1990). Social cognitive theory suggests that individuals upwardly revise their goals after receiving positive feedback, because feedback of success enhances the recipient's self-efficacy, or their belief that they have the necessary ability to perform a certain task at a certain level. Social cognitive theory also suggests that individuals downwardly revise their goals after receiving negative feedback, because feedback of failure prompts the belief that the goal is too difficult to attain (Bandura, 1986). Behavioral motivation theory suggests that there are two distinct, psycho-neurological systems that regulate behavioral

motivation through both emotional and cognitive components. The behavioral activation system (BAS) regulates the experience of positive emotions and appetitive motivation and is activated by rewards or relief from punishment. The behavioral inhibition system (BIS) regulates the experience of negative emotions or aversive motivation and is activated by punishments or loss of rewards. According to Gray's theory, positive performance feedback will result in the recipient experiencing PA, because rewards or reinforcements (e.g., positive feedback) activate the BAS, which regulates PA and provokes approach behaviors such as reaching for higher goals. Behavioral motivation theory suggests that negative performance feedback, a punishment, will activate the BIS, which regulates negative emotions and avoidance behaviors such as downward goal setting.

In Ilies et al.'s (2007) study, participants, who were all undergraduate students, completed a self-esteem measure and a week later began an 8-trial experiment. Each trial involved performing a task, receiving feedback, and reporting their affective state. The task was a brainstorming activity that asked participants to list as many uses as possible for specific objects (i.e., rubber tire, coat hanger, ice). Their results provided support for the notion that performance feedback predicts both positive and NA within individuals. Positive and negative feedback had differential effects on PA and NA. Negative affective reactions to feedback were found to be stronger when feedback was negative rather than positive. After receiving positive feedback, those with low self-esteem had stronger affective reactions than those who scored high on self-esteem. Those with high and low self-esteem reacted similarly to negative feedback. When considering future research suggestions, Ilies and his colleagues assert that the feedback-affect relationship may be

influenced by the credibility and acceptance of the feedback. The present study investigated these assertions by further examining the relationship between feedback valence and affect as well as the role of the recipients' perceptions of the feedback accuracy (credibility) and desire to respond (acceptance). These two variables (perceptions of feedback accuracy and desire to respond) will be discussed in the subsequent section of this paper.

A related stream of research has been conducted building upon the feedback-affect relationship by examining the outcomes of feedback-induced affect (Ilies & Judge, 2005; Venables & Fairclough, 2009). Venables and Fairclough investigated how feedback valence influences goal setting. Drawing on motivational intensity theory (Wright & Brehm, 1989), Venables and Fairclough examined the role of emotional and cognitive processes that influence effort investment and goal setting. In regard to the emotional process, they hypothesized that positive feedback induces feelings of success, which promote greater investment of effort, resulting in upward goal revision. In regard to the cognitive process, they hypothesized that both cognitive appraisals of task demands and task-specific self-efficacy beliefs independently influence investment of effort, which affects goal revision. Conversely, Venables and Fairclough hypothesized that negative feedback would lead individuals to believe that they failed to perform well, resulting in a negative emotional reaction that harms effort investment. They also hypothesized that negative feedback would reduce the recipients' beliefs that they had the necessary ability level to achieve success and increase their perceptions of task demands. Ability and task demand perceptions would result in recipients reducing their levels of effort and lead to goal abandonment. Participants included university students who were randomly divided

into two groups: success and failure. They completed a cognitively demanding task, which requires multi-tasking and is therefore difficult for students to form subjective self-appraisals of their performance. They went through five trials of the task and received feedback after each trial. Feedback included false information about the total percentage correct. Before the trials, they completed a measure of self-efficacy, perceptions of capabilities to perform and succeed, mood, motivation, control, confidence, and personality. Psycho-physiological variables were used to measure mental effort investment and emotion. The results suggested that positive feedback led to PA and less decline in subjective motivation in response to perceived success. Negative feedback resulted in adverse changes in mood and motivation, but not absolute withdrawal of effort (although psychophysiological data suggested that they almost abandoned the task). These findings are consistent with Bandura's (1986) social cognitive theory, which form the present study's hypotheses regarding the feedback valence-affect-goal setting relationship.

Ilies and Judge (2005) conducted two studies to understand the role of feedback in the motivation self-regulation process within individuals across time. The investigation sought out to examine the affective psychological processes that link feedback to future work goals. They operationalized motivation according to goal setting theory (Locke & Latham, 1990). In forming their first hypothesis, they considered the assumptions of two theories, control theory and social cognitive theory. Control theory (Carver & Scheier, 1981) suggests that the relationship between feedback valence and affect is in the opposite direction of that suggested by social cognitive theory (Bandura, 1977). According to control theory, individuals should decrease their level of effort after

receiving positive feedback and increase their effort following negative feedback in attempt to decrease any goal-performance discrepancies. Consistent with social-cognitive theory, Ilies and Judge hypothesized that positive performance feedback (as compared to negative feedback) will be associated with upward goal revision. Ilies and Judge's second hypothesis was consistent with Gray's (1990) behavioral motivation theory. Thus, they expected that positive performance feedback would lead to PA, and PA would activate the BAS promoting higher goal setting. Negative performance feedback was expected to lead to NA, which would activate the BIS and thus downward goal setting.

In their (Ilies & Judge, 2005) first study, participants reported their affect and then choose one of nine goals stated as "I want to perform better than [e.g., 50]% of the participants in this experiment" with the percentages ranging from 10 to 90. After setting an initial goal, the participants completed a five-minute brainstorming task, which required them to list as many uses as possible for a common object (e.g., absorbent towel, wood, coat hanger). After completing the task, they were provided with feedback that was either accurate or random (accurate or inaccurate) and relative. They reported their affect immediately after receiving feedback and went on to complete the next trial of eight total. Study two involved a similar method except there were two task conditions and two goal type conditions. One task was the same brainstorming task used in study one, and the second task involved generating as many words as possible that contained a certain letter. Participants set either relative goals (as in study one) or nominal goals (the amount of numbers/words they could generate). Relative goal setting allows for relative feedback, whereas nominal goal setting allows for feedback about the discrepancy between the goal and performance level. All participants received accurate feedback;

thus, there was no comparison between accurate and random feedback conditions as in study one. These researchers found that feedback valence was positively related to goal revision, such that positive feedback lead to upward goal revision and negative feedback led to downward goal revision. Affect mediated the relationship between feedback valence and goal revision. Interestingly, when feedback was negative, they found that nominal and relative feedback predicted subsequent goal revision, but when feedback was positive, only nominal feedback predicted goal revision.

Ilies and Judge (2005) point out that since nominal feedback predicted goal setting for both positive and negative feedback while relative feedback predicted goal setting for only negative feedback, the effect of feedback on goal setting is stronger when feedback is nominal rather than relative. Nominal feedback may have a greater influence on feedback than relative feedback because participants are able to track their performance thus forming clear opinions about whether the feedback is accurate (Ilies & Judge, 2005) and those judgments of feedback accuracy may affect whether participants feel they should respond to the feedback (Kinicki et al., 2004) due to their analysis of the feedback being a fair or unfair representation of their performance. Unless the participants witness the performance of the other participants, they have no first-hand knowledge of whether the feedback they receive is accurate. Ilies and Judge encourage future research on these issues. They also suggest that research be conducted on moderators of the feedback-affect-goal setting relationship, such as causal attributions for the level of performance, feedback credibility, and feedback acceptance. The present study builds upon the work of Ilies and Judge by examining FIT (nominal or relative) as a

moderating variable of the relationship between feedback accuracy and perceptions of feedback accuracy.

Ilies and Judge (2005) note that the effects of accurate feedback versus random feedback had not yet been investigated. They expected that feedback would have a stronger effect on subsequent goals when it is accurate rather than random because, as past research (Ilgen et al., 1979) has demonstrated, when feedback is accurate, it is more credible, and feedback credibility affects goal setting. However, Ilies and Judge only investigated this relationship in study one and found that the feedback-goal setting effect was supported when the feedback was both accurate and random. However, there are two problems that put this finding into question. First, in study one, feedback was relative and participants did not witness one another's performance, therefore the participants were unable to know if the feedback was truly accurate or not. If they were able to form a realistic opinion as to whether the feedback was accurate, then the effect of feedback on goals might have been stronger for accurate feedback over random feedback. The second problem is that Ilies and Judge's (2005) random feedback condition was not truly random as opposed to accurate, since a portion of the participants likely received accurate feedback. The present study investigated whether feedback accuracy has an effect on goal setting by placing participants into an accurate feedback condition and an inaccurate feedback condition rather than a random feedback condition. The present study also investigated whether judgments of feedback accuracy are influenced by feedback being nominal or relative feedback. The following section of this paper further explores feedback credibility as a cognitive reaction to feedback.



In sum, much research has demonstrated a strong relationship between feedback and affect (Ilies et al., 2007; Ilies & Judge, 2005; Kluger et al., 1994; Venables & Fairclough, 2009). Findings suggest that positive feedback results in high levels of PA, and negative feedback leads to high levels of NA. Further, PA has been shown to have a consistent positive relationship with goal setting, and NA has demonstrated a negative relationship with goal setting. The findings of this stream of research overwhelmingly support behavioral motivation theory (Gray, 1990) and social cognitive theory (Bandura, 1986), and do not support control theory (Carver & Scheier, 1981). The present study's hypotheses are thus based on Gray's and Bandura's theories. These (Ilies et al., 2007; Ilies & Judge, 2005) researchers suggest that recipients' perceptions of feedback credibility may have an impact on the feedback-affect relationship; therefore, the present study investigated the possible antecedents and consequences of feedback credibility in the feedback-goal setting process.

### **Psychological State as a Moderator of Feedback Reactions**

A deep understanding of the relationships that performance feedback has with affective, cognitive, motivation, and performance outcomes would not be obtained without considering moderators of these relationships. As previously mentioned, Kluger and DeNisi (1996) conducted a meta-analysis on the feedback-performance relationship and found that this relationship was sometimes negative, positive, weak, and strong. These results suggest that moderators exist which change the direction and strength of the feedback-performance relationship. The present study examined goal-oriented psychological states as moderators of responses to feedback. This study explored the importance of considering enjoyment- versus achievement-directed motives, defined in

reversal theory terms as paratelic and telic states (Apter, 2001), in the feedback-performance relationship. Specifically, this research examined the impact of these transient psychological states on an individual's affective and cognitive reactions to feedback.

Research (Ilies & Judge, 2002; Judge & Ilies, 2004; Weiss, Nicholas, & Daus, 1999) suggests that a person's momentary psychological state has an effect on important work-related outcomes. Weiss et al. (1999) provided evidence for the significance of transient mood states rather than aggregated reports of mood. Ilies and Judge (2002) found that traditional research designs that examine between-subjects, trait-like variables (i.e., overall job satisfaction, trait affect) do not account for more than one third of the variance in similar variables measured within-subjects as momentary states or moods. Judge and Ilies (2004, p. 668) note that there has not been much research linking "transient measures of mood at work" with work-related outcomes. There has been very minimal research linking momentary state to feedback and its effects including cognitions, motivation, and performance. A large gap exists within the goal-setting literature, specifically, in examining how recipients' momentary, dynamic states influence feedback's effect on motivation. Goal setting theory does not discuss the various motives that influence engagement in a task (Kanfer, 1990). In the present study, reversal theory is used to explain what factors motivate individuals to respond to feedback regarding goal-attainment. Current state of mind may affect the way feedback recipients react cognitively, affectively, and behaviorally to a feedback message. Furthermore, reversal theory research has yet to examine the role of state in the feedback and goal-setting process. Therefore, this research bridges these gaps by considering the

moderating influence of psychological state (defined in reversal theory terms) when explaining motivational processes.

Reversal theory is a theory of motivation, emotion, and personality that specifies four pairs of motives or psychological states constantly experienced by everyone at varying levels of saliency (Apter, 2001). The pair of states of interest in the present study captures those aspects of experience relevant to goals and is referred to as the means-ends domain. This pair includes the telic, serious-minded state, and the paratelic, playful-minded state. At times, an individual's motivation is directed toward the end or goal, and the means by which the goal is achieved has little importance beyond that. In this telic state, the individual is motivated to reach a goal. The end is the focus, and the means is just a way to get there. However, humans are not always goal or end focused. Other times, individuals may be focused on the means, or journey, rather than the end. They want to enjoy the activity they are performing and are not concerned about reaching any goal or end state. The goal may be just a way of organizing the activity and is given no significant importance. In this paratelic state, the goal's value is in the background, and the activity's value is in the foreground. At any moment, an individual's actions are motivated by either goal achievement (when in the telic state) or enjoyment of the current activity (when in the paratelic state; Apter, 2001).

As mentioned, according to reversal theory, individuals' states of mind affects where they direct their attention (Apter, 2001). Svebak and Murgatroyd (1985) conducted a study to examine the physiological arousal of individuals in the paratelic state compared to those in the telic state during goal-directed behavior. The participants' state dominance was assessed, which is their tendency to experience a particular state over its

opposite throughout the day. They were then asked to complete a task that involved a simulated car race. These researchers found that telic dominant individuals (those who were most frequently in the telic state) had stronger physiological reactions while engaging in the task compared to paratelic dominant individuals (most frequently in the paratelic state). Svebak and Murgatroyd verified the notion that individuals in the telic state react more strongly in goal-achievement situations than those in the paratelic state. Although the present study considers state rather than state dominance, these findings are relevant for the proposed ideas. The participants in Svebak and Murgatroyd's study were likely in the state consistent with their dominance during their performance of the task, since dominance indicates a tendency to be in one state rather than the other. Thus, it is likely that those in the telic state reacted more strongly in the goal-achievement scenario than those in the paratelic state. The present study digs a little deeper into the areas explored by Svebak and Murgatroyd by examining whether individuals in the telic state will have stronger reactions during a goal-oriented task and thus act in a more goal-directed manner compared to those in the paratelic state.

Research related to achievement orientation examined outside the reversal theory domain is highly relevant for performance management and consistent with the assumptions of reversal theory. Achievement motivation explains various motives that an individual can take on when completing a task. Achievement orientation is defined as "a perceptual-cognitive framework that influences how individuals approach, interpret, and respond to achievement activities (Kozlowski & Bell, 2006). According to Dweck (1986, 1989), there are two types of achievement orientation. The first is *learning* orientation, which refers to a focus on achieving mastery and competence. The second type is

*performance* orientation, which is a focus on demonstrating mastery and competence above and beyond that of the competition. Research suggests that those with a learning orientation are challenge seeking, intrinsically motivated, and persistent, while those with a performance orientation avoid challenges, have low intrinsic motivation, and tend to withdraw from tasks (Ames, 1992; Church, Elliot, & Gable, 2001; Dweck, 1986). Both of these types of achievement orientation are related to the self-mastery state described in reversal theory; however, the findings regarding the learning orientation are consistent with those of the paratelic state, and the findings of the performance orientation are consistent with those of the telic state. Similar to the reversal theory state pairs, only one type of achievement orientation is adopted in an achievement situation. One's orientation can change depending on the situation (Kozlowski & Bell, 2006).

Kozlowski and Bell (2006) emphasized the importance of a deeper understanding of studying achievement orientation and goal setting. They conducted a study with the purpose of disentangling the effects of achievement orientation and goal setting on the self-regulatory activity of trainees during skill acquisition. However, these researchers did not consider how achievement orientation might facilitate goal-setting behavior by moderating responses to feedback regarding goal achievement, which the present study does.

Elliot and Harackiewicz (1996) examined the moderating influence of achievement orientation on the relationship between mastery-focused goals and intrinsic motivation. Mastery-focused goals led to an increase in intrinsic motivation when individuals were high in achievement orientation, but mastery-focused goals were detrimental to intrinsic motivation when the individuals were low in achievement

orientation. These findings support the present study's hypothesis that those who have telic, goal-achievement motives will have a different level of motivation in a goal attainment scenario than those who are not focused on goal-attainment but have paratelic motives. What the present study addressed that Elliot and Harackiewicz (1996) did not, is how individuals with varying motivational states will respond to feedback on goal-attainment.

Donovan and Hafsteinsson (2006) examined the moderating role of achievement orientation (learning or performance focus) on the relationship between goal-performance discrepancy and goal revision. Goal-performance discrepancy is essentially feedback information regarding whether a goal has been reached. Thus, these researchers examined how goal achievement motives influence the feedback-goal revision relationship. They found support for their hypotheses that feedback has differential effects on goal revision depending on whether the individual is focused on learning or performing. The present study was designed in consideration of the relationships supported by Donovan and Hafsteinsson, but examined achievement motives in terms of the telic and paratelic reversal theory states. In addition, the present study included additional mediating variables (i.e., affect, perceived accuracy, organizational justice) to explain the process through which motives moderate the effects of feedback on goal revision.

A major difference between the present study and the research of Donovan and Hafsteinsson (2006), Elliot and Harackiewicz (1996), and Kozlowski and Bell (2006) is the consideration of goal achievement motives as purely a state rather than a disposition or tendency. Although, Kozlowski and Bell clearly state that an individual can adopt a different achievement orientation depending on situational factors, they also highlight

that individuals have a tendency to be either learning or performance focused. The present study considers goal achievement motives as a dynamic state that can change at any given moment. The challenge in the design of the present study was that feedback itself may provoke a reversal of one's state. Thus, state was examined before and after feedback.

If experiencing the telic state means that an individual's motivation is directed toward reaching a goal, then that individual should give more attention to information regarding his/her status for attaining said goal. On the other hand, the motivation of an individual in the paratelic state is directed toward enjoying the moment. Therefore, an individual in the paratelic state is expected to be less attentive of messages regarding goal attainment. Following this logic, recipients' of feedback who are in the telic state should direct their attention to performance feedback information about goal attainment, and thus react strongly to the feedback information. They will form strong judgments of its accuracy and fairness (cognitive) and experience emotions in line with the feedback message. They would also likely alter subsequent goals based on their reactions to the feedback. Recipients in the paratelic state are expected to be focused on enjoying the present task rather than information about their goal attainment (thus ignoring it). Since these paratelic individuals are not paying much attention to feedback, they should not react strongly to it emotionally or cognitively, and feedback should not have much of an influence on their future goal-setting behaviors. This explanation forms the basis for the hypothesis regarding psychological state as a moderator of the relationship between feedback and the reactions to it. The present study clarifies this moderating role of the paratelic and telic states.

In sum, a major gap exists in the feedback and goal-setting literature regarding the moderating influence of achievement-focused state of mind. Reversal theory researchers have also not yet examined state's role in the feedback-goal setting relationship; however, it has provided an optimal foundation for building hypotheses on this topic. Achievement motivation research (Donovan & Hafsteinsson, 2006) has touched on the idea that the feedback recipient's achievement orientation may change the feedback-goal setting relationship, and thus provides a gateway for the notions investigated in the present study. The present study linked the concepts from reversal theory and achievement orientation research in attempt to bridge the gaps in the feedback, goal-setting, and reversal theory research and extend current findings (Donovan & Hafsteinsson, 2006) making them more meaning and useful for enhancing motivation in today's workplace.

### **Theoretical Overview**

The present study incorporated the assumptions, hypotheses, and evidence from several theories and used those to arrive at a detailed model of the processes through which feedback affects performance. This section provides a brief explanation of each of the theories used to develop the model. The present model itself will be described after the review of the relevant theoretical foundations.

#### **Behavioral Motivation Theory**

Behavioral motivation theory was proposed by Gray (1990) and suggests that personality is composed of two dimensions: anxiety and impulsivity. These two components of personality are the result of the sensitivity of two neurological systems to the environment, one, the BIS which regulates aversive motivation (anxiety) and the BAS



regulates appetitive motivation (impulsivity). The BIS is sensitive to punishment, non-reward, and the unfamiliar, whereas the BAS is sensitive to reward and non-punishment. When the BIS is activated, behavior that leads to detrimental outcomes is inhibited and thus movement toward goals is inhibited. On the other hand, activation of the BAS results in behavior that leads to the accomplishment of goals (Carver & White, 1994).

Behavioral motivation theory is relevant for the present study, because it is used to explain how positive feedback leads to approaching future goals by upwardly revising goals (because of BAS activation), whereas negative feedback leads to avoidance behavior and downwardly revising goals due to BIS activation. Other researchers (Carver & White, 1994; Ilies et al., 2007; Ilies & Judge, 2005) have used and found support for behavioral motivation theory as a framework to explain the link between feedback valence and goal achievement.

### **Reversal Theory**

Reversal theory is a theory of motivation, with significant implications for understanding both emotion and personality (Apter, 2005). According to reversal theory, motivation is a dynamic concept that may be described in terms of often-changing states of mind rather than fixed traits. The theory proposes that state of mind is organized into a coherent structure, consisting of four pairs of opposite states. Every individual is in one state from each pair at any given moment and may reverse into the opposing state at any time. The four pairs of states, or domains, are the rules, interaction, orientation, and means-and-ends domains (Apter, 2005). The rules domain includes the conformist and negativistic states. Someone in the conforming state is motivated by following rules or norms in order to have structure and meaning in life. In the negativistic state, one desires

to break the rules or go against the norm. The person may believe that the rules are unfair or confining. The mastery and sympathy states comprise of the interaction domain. In the mastery state, we desire being in control or helping someone else gain control. In the sympathy state, we desire being cared for or caring for others. While gains elicit feelings of power in the mastery state and feelings of affection in the sympathy state, losses elicit feelings of weakness in the mastery state and feelings of disappointment in the sympathy state. Finally, the orientation domain concerns whether an individual is motivated by the needs of him/herself or others. In the alloic state, we obtain personal pleasure from helping others, and we identify with others. In the autic state, we are focused on our own personal benefit. The paratelic and telic states make up the means-ends domain. In the telic state, one is motivated by achieving a goal; thus the focus is on the end and the means is simply a way to get there. When in the paratelic state, one is motivated by enjoying the present activity for its own sake. In this case, the means is the focus of attention.

A person's motivation at any moment may be described through the combination of these four pairs of states. In other words, an individual's motivation may take on any of 16 combinations of the four states ( $2 \times 2 \times 2 \times 2$ ). For example, an individual may be in the self, mastery, telic, and conforming combination of states at a particular moment. In that scenario, the individual would be motivated by a desire for personal power (self-mastery) to achieve a meaningful outcome (telic) while following rules or expectations (conforming). In contrast, an individual in the other, sympathy, paratelic, and rebellious states is motivated by a desire to ensure others feel cared for (other-sympathy) for its own sake, not because it has instrumental utility (paratelic), while challenging norms or

conventions (rebellious). It is important to note that the descriptions of the individual's motivation do not imply fixed traits. Motivation in reversal theory terms is seen as highly changeable, and intra-individual changes in states are viewed as evidence of motivational diversity and psychological well-being (Apter, 2001).

Reversal theory also provides a temporally-based, experiential framework for predicting when and why specific emotions are triggered and for describing individual differences in personality. In its simplest terms, the link between motivational state and emotion is as follows. Motivational states describe what one wants; emotions are triggered depending on whether one actually gets what one wants. In the self-mastery state, for example, an individual wants (is motivated by) personal power or control. If this motivation is satisfied, the resulting positive emotion is pride; if not, the individual will feel the negative emotion of humiliation (Apter, 2007). Each state (or combination of states) gives rise to a specific emotion, depending on whether the motivation is fulfilled. Personality, in reversal theory terms, is the pattern with which an individual experiences motivational states over time. While all individuals experience all eight states, people do vary in the amount of time they spend in each state. Apter (1989) described the concept of state dominance, which he describes as the relative balance between states within a domain. Individuals who spend more time in one state than its opposite are dominant on that state. For example, "telic dominant" individuals are those who spend more time in the telic and less time in the paratelic state. Individuals also differ in the relative frequency with which they reverse (switch) between states. Apter's concept of lability refers to the frequency with which an individual reverses between states (2001). Some people may remain in a given state longer before reversing to its opposite. Both lability

and dominance reflect a dynamic conceptualization of personality that is in sharp contrast to more fixed, trait-based depictions of personality. The present study incorporates reversal theory into the feedback and goal setting literature by focusing on the means-ends domain. Experiencing the paratelic or telic state explains why a person is focused on and motivated by their progress in reaching a goal or enjoyment of the activity at hand. Thus, the ideas from reversal theory provide the basis for the moderator of the relationship that feedback has with affect and perceived accuracy in the present study's model.

### **Organizational Justice Theory**

The theory of organizational justice is a cognitive theory that focuses on the fairness of work processes (Greenberg, 1987). The term organizational justice was coined by Greenberg (1987) and refers to people's perceptions of fairness in organizations along with their associated behavioral, cognitive, and emotional reactions. Organizational justice plays an important role in the motivation and performance appraisal literatures and thus has grown in popularity (Greenberg, 2011) and is highly relevant for the present study.

Organizational justice theory derived from equity theory (Adams, 1963), which suggests that people want to compare themselves to others who are in comparable roles and respond most optimally when they feel as if those others receive equitable pay. The perception of fairness of distributions of rewards and resources has become referred to as distributive justice. Leventhal (1980) defined a second type of justice, procedural justice, which is "perceived fairness of the manner in which outcomes are determined." Bies and Moag (1986) introduced a third type of organizational justice, interactional justice, which

they defined as perceived fairness of the manner in which outcomes and procedures are communicated. Greenberg (1993) broke interactional justice down into two types, interpersonal and informational. Interpersonal justice refers to the sensitivity and respect received from others, and informational justice is the accuracy and quality of explanations one receives from others.

The present study examined distributive justice as a mediator in the feedback-goal revision relationship. As mentioned, distributive justice is the perception of fairness of distributions of rewards and resources. Feedback indicating success or failure is a type of reward or punishment; therefore, distributive justice perceptions should develop following feedback. Perceptions of informational justice (fairness of the explanation of feedback received) is also relevant to explore as a reaction to feedback; however, the manipulation in the present study did not include an explanation of the reasoning behind the feedback message and thus focused on distributive justice perceptions rather than informational justice perceptions. Future research investigating informational justice as a reaction to feedback would be fruitful following this study. The relevance of distributive feedback in the proposed model is further discussed in the following section of this paper. Feedback given to the participants was expected to have an effect on distributive justice perceptions, which were hypothesized to influence whether the participants goal setting for a future task. Thus, organizational justice theory may explain how feedback affects goal setting.

### **Theory of Planned Behavior**

The theory of planned behavior derived from the theory of reasoned action (Fishbein & Ajzen, 1975). Both theories focus on individuals' intentions to perform a

behavior by suggesting that stronger behavioral intentions correspond to a stronger likelihood of actual behavior. Intentions reflect the motives of certain behaviors and indicate the level of effort people will put forth to engage in a behavior. Both theories posit that attitudes and subjective norms predict behavioral intentions. However, the theory of reasoned action was limited as it did not account for individuals' beliefs regarding the control they have over their own behaviors. Therefore, the construct of perceived behavioral control was added as a third predictor of intention resulting in the theory of planned behavior, which explains that when behavior is not under volitional control, the intention may not lead to the behavior (Ajzen, 1991).

As mentioned, the theory of planned behavior suggests that three factors affect intention: attitudes toward the behavior, subjective norm, and perceived behavioral control. Perceived behavioral control refers to people's perceptions of the difficulty of performing the behavior. Perceived behavioral control reflects past experiences and anticipated obstacles. Attitude towards the behavior refers to the extent which the person has a favorable opinion of the behavior. The subjective norm refers to perceived social pressure to perform the behavior. These three factors each uniquely influence a person's intention to perform a behavior, and intention directly influences behavior (Ajzen, 1991).

The notions behind behavioral attitudes and intentions from the theory of planned behavior are incorporated into the present model. This study hypothesized that desire to respond to feedback has a direct effect on goals, which are essentially intentions to perform. Thus, behavioral attitudes (desire to respond to feedback) should affect intentions to behave (goals). This idea is expanded upon in the model and hypotheses section.

## **Goal Setting Theory**

Goal setting theory has become the most dominant, widely researched, and well-supported theory in the motivation literature (Locke & Latham, 2002). Locke proposed this theory in 1968 after finding that difficult goals result in greater performance, specific goals produce more effort than broad goals, and intentions to behave regulate actual behavior (Latham & Locke, 1991; Locke, 1968). After over 25 years of research and 400 studies, both in the laboratory and field, Locke and Latham concluded that if an individual “is committed to the goal, has the requisite ability to attain it, and does not have conflicting goals, there is a positive, linear relationship between goal difficulty and task performance” (Locke & Latham, 2006). The effect sizes that goal difficulty, specificity, and acceptance have with performance range from .42 to .80 (Locke & Latham, 2002). Goal specificity leads to enhanced performance, because it decreases the ambiguity the individuals have regarding the performance level expected of them. Goal difficulty leads to enhanced performance levels, because it motivates individuals to dedicate more resources toward completion of the task, such as greater effort levels or persistence (Locke & Latham, 2002).

Research suggests that goal setting must pair with feedback in order to have maximal beneficial effects (Erez, 1977; Locke & Latham, 1990). Individuals must know how they are performing relative to their goal, so that they can make adjustments to their behavior to achieve the goal. However, feedback does not simply affect goal setting by only providing information on behavioral adjustments needed. Feedback also provokes emotional and cognitive reactions that change motivation levels (i.e., goal setting). The present study investigated the affective and cognitive ways in which feedback affects

goal setting. Goal-setting theory explains the end of the proposed model, which shows that goal setting affect performance for Task 2.

The model of the feedback – performance relationship tested by the present study was derived from the ideas put forth by goal-setting theory, reversal theory, the theory of planned behavior, organizational justice theory, and behavioral motivation theory. Each of these theories has been supported by extensive research and provides strong bases for the hypothesized model. The present study sought out to further our understanding of the feedback-performance relationship by examining the relationships between the variables supported by these theories. This model is a unique and comprehensive process model that combines relationships supported in past research in a way that has never been examined before. The next section of this paper states the hypotheses and explains the relationships posited in further detail.

### **Proposed Model and Hypotheses**

The proposed model (see Figure 1) provides a process-oriented view of the relationship between performance feedback and subsequent performance. As described in the previous section, the assumptions of this model are based on the claims of several theories used in the motivation literature (viz., behavioral motivation theory, organizational justice theory, reversal theory, goal setting theory, and theory of planned behavior). In this section, the proposed process through which feedback affects performance is explained based on its theoretical rationale. The hypotheses follow the detailed explanation of the model.

When considering reactions to feedback, first the characteristics of feedback should be specified. Feedback can be classified according to valence, accuracy, and



information type. It may be positive, signaling success in reaching a goal, or negative, signaling failure (valence). The feedback information may be either an accurate representation of the recipient's actual performance or an inaccurate representation. And finally, the feedback will be either nominal or relative in content. Nominal feedback contains information about how the recipient performed in comparison to their own goals and expectations, while relative feedback contains information about how the recipient performed in comparison to the performance of other recipients. Goals can be set for oneself only, not in comparison to others, or goals can be set against the performance levels of competitors. There are additional ways to describe the nature of performance feedback; however, the present study focused on feedback's valence, accuracy, and information type.

According to the model tested in this study, recipients experience both affective and cognitive reactions after receiving performance feedback. They may experience positive and/or negative emotions (affective), and they accept or reject the feedback based on their perceptions of its credibility and fairness. Behavioral motivation theory (Gray, 1990) suggests that in circumstances when individuals receive rewards, their BAS is activated, which regulates their positive emotions thus promoting appetitive motivation or approach behaviors. When individuals receive punishments, their BIS regulates their negative emotions and promotes aversive motivation. Thus, rewarding (positive) or punishing (negative) feedback influences the recipients' affective states, and the resulting affective states will affect recipients' desire to respond by approaching or avoiding the task. According to this study's model, recipients experience PA or NA after receiving feedback of their success or failure (Hypothesis 1). Depending on the emotions recipients

experience in response to feedback, they develop a certain level of desire to respond to the feedback (Hypothesis 2).

Feedback valence influences affect as well as the recipients' perceptions of feedback accuracy (Hypothesis 3) according to the proposed model. Several studies (Halperin et al., 1976; Jacobs et al., 1973; Johnson & Nawrocki, 1967) have found support for the "credibility gap," which is a phenomenon that tends to occur where positive feedback is rated as more credible by the recipient and negative feedback is rated as less credible. Recipients likely see positive feedback as more credible than negative feedback, because positive feedback is aligned with their self-image (Ilies et al., 2007). Therefore, in the present study, recipients were expected to perceive positive feedback as accurate and negative feedback as inaccurate.

The second characteristic of feedback that I explained previously is feedback accuracy. While feedback valence was expected to have an effect on the participants' judgments of feedback accuracy, participants were expected to form their judgments of feedback accuracy largely based on the true accuracy of the feedback content in situations where they have evidence of their performance. Therefore, Hypothesis 4 suggests that feedback accuracy will directly affect perceptions of feedback accuracy. However, if participants have no evidence supporting the accuracy of the feedback, the relationship between feedback accuracy and participants' perceptions of feedback accuracy should weaken. Therefore, a third characteristic of feedback, FIT as relative or nominal, was examined. This variable was expected to moderate the relationship between feedback accuracy and perceived accuracy (Hypothesis 5) because of differences in the availability of information regarding one's own past performance or other participants'

performance. Since participants had not witnessed the performance of other participants, they had no information available about how their own performance compared with that of the others. Thus, they did not have accurate knowledge as to whether the feedback is accurate. When the feedback is nominal, they should have strong, more accurate opinions of whether the feedback is accurate, since they would have knowledge of their previous goals and performance. According to this reasoning, when feedback is nominal, participants have the knowledge necessary to form accurate perceptions of the feedback credibility; therefore, feedback accuracy will be strongly related to perceptions of feedback accuracy. When the feedback is relative, participants will lack the information needed to form accurate perceptions of feedback credibility, and feedback accuracy will not be strongly related to perceptions of feedback accuracy.

As mentioned, feedback valence and accuracy are expected to influence affect and perceptions of feedback accuracy. The proposed model suggests that the recipients' psychological state (desire for achievement or enjoyment) during the reception of feedback will moderate those three relationships (i.e., valence and affect, valence and accuracy perceptions, and accuracy and accuracy perceptions; Hypothesis 6). According to reversal theory (Apter, 2005), someone in the telic state has a desire to reach a goal, while someone in the paratelic state is not concerned about reaching goals but has a desire to enjoy the activity for its own sake. Therefore, individuals in the telic state will focus their attention on the feedback message and react more strongly to goal-attainment information than recipients in the paratelic state. Both cognitive and affective reactions were expected to be more strongly affected by all aspects of the feedback when the recipient is in the telic state rather than the paratelic state.

Once the recipients evaluate whether the feedback is accurate, they may form judgments about whether the feedback is a fair or unfair representation of their performance. The proposed model implies that perceived accuracy will be related to the recipients' perceptions of distributive justice (Hypothesis 7), because according to organizational justice theory (Greenberg, 1987), individuals judge the fairness of the outcomes they receive (e.g., praise, payment for a task) by comparing those outcomes to the effort they put into the performance episode. This suggests when individuals have met a criterion (e.g., solve a problem accurately) but are not given an expected reward (e.g., praise or payment for accurate problem-solving), they will view the outcome as a violation of distributive justice. Erdogan (2002) stated, "In the performance appraisal context, distributive justice refers to perceived fairness of performance ratings" (p. 566). If feedback is defined as information about the performance appraisal rating, then feedback should influence perceptions of distributive justice. Erdogan also stated "...distributive justice perceptions will be a function of characteristics of performance ratings" (p. 569). This notion is reflected in the present model since the three characteristics of feedback (valence, accuracy, information type) were expected to indirectly affect distributive-justice perceptions.

Hypothesis 7 is based on the expectation that judgments of whether performance and performance feedback are aligned (feedback accuracy perceptions) will be related to their perceptions of their feedback information as fair (distributive justice). Following perceptions of distributive justice, the model suggests that recipients' perceptions of distributive justice will be related to their desire to respond to the feedback (Hypothesis 8). According to organizational justice theory (Greenberg, 1987), employees' perceptions

of the fairness of work-related resource allocations/rewards and punishments affect their motivation because recipients attempt to equalize any injustices or support just outcomes. In other words, if recipients perceive an injustice, they will respond in a manner that would make their input match the outcome they received. If justice perceptions were high, recipients will respond in a manner deserving of the outcome received. Therefore, recipients' perceptions of distributive justice should influence their motivation to respond to feedback with an approach or avoidance orientation.

As Greenberg (1979) explained, recipients react to unfair distributions of outcomes by experiencing negative emotions and then attempting to rectify the inequity. Thus, the recipients' perceptions of distributive justice were expected to have a direct influence on PA and NA. As previously described, after receiving feedback, recipients will cognitively evaluate the information forming perceptions of justice (Chory & Westerman, 2009; Erdogan, 2002). Following the formation of justice perceptions, affective reactions will occur (Colquitt et al., 2013). If the feedback is judged to be unjust, recipients will experience negative emotions due to the perceived injustice. If the feedback is judged as just, the recipient will experience positive emotions and a lack of negative emotions. Therefore, distributive justice perceptions should be positively related to PA and negatively related to NA (Hypothesis 9).

If the recipients want to respond to feedback, they form intentions to behave when performing the task again. The present model indicates a relationship between desire to respond and goal revision, which is essentially an intention to behave in a certain way (Hypothesis 10). The theory of planned behavior (Ajzen, 1991) explains that individuals develop attitudes toward certain behaviors, and those attitudes affect their intentions to

behave. Recipients' desires to respond are simply attitudes toward behaving in a manner that is responsive to feedback, and their goals are intentions to behave in certain way when performing the task. Therefore, the relationship between desire to respond and goal setting reflects the attitudes-intentions relationship proposed by Ajzen.

The last link in the proposed model is that between goal setting and performance at Time 2. According to goal setting theory, goals, or intentions to perform at a certain level, affect actual performance levels (Locke & Latham, 1990). In the present study, after recipients set a goal for the second task, they performed the task again. Their second goal was expected to affect their performance at Time 2 (Hypothesis 11).

Here is a list of the hypotheses that this study will test:

- Hypothesis 1: Feedback valence influences affect, such that (A) recipients of positive feedback will experience stronger PA compared to recipients of negative feedback, and (B) recipients of negative feedback will experience stronger NA compared to recipients of positive feedback.
- Hypothesis 2: (A) PA will be positively related to desire to respond to feedback, and (B) NA will be negatively related to desire to respond to feedback.
- Hypothesis 3: Feedback valence will be positively related to perceptions of feedback accuracy.
- Hypothesis 4: Feedback accuracy will be positively related to perceptions of feedback accuracy.
- Hypothesis 5: FIT (nominal or relative) will moderate the relationship between feedback accuracy and perceptions of feedback accuracy. Actual feedback accuracy will be more strongly related to perceptions of feedback accuracy when the feedback is nominal rather than relative.

- Hypothesis 6: Motivational state will moderate several of the relationships in the model. Specifically, the following relationships will be stronger when the participant is in the telic state compared to the paratelic state:
  - A) Feedback valence and PA.
  - B) Feedback valence and NA.
  - C) Feedback valence and perceived accuracy.
  - D) Feedback accuracy and perceived accuracy.
- Hypothesis 7: Perceived feedback accuracy will be positively related to perceptions of distributive justice.
- Hypothesis 8: Perceptions of distributive justice will be positively related to desire to respond to the feedback.
- Hypothesis 9: Distributive justice will be (A) positively related to PA and (B) negatively related to NA.
- Hypothesis 10: Desire to respond to feedback will be positively related to Task 2 goal.
- Hypothesis 11: Task 2 goal will be positively related to Task 2 performance.

## **CHAPTER TWO**

### **METHOD**

#### **Participants**

An invitation to participate in the study was posted on Amazon's Mechanical Turk (MTurk). MTurk is a crowdsourcing marketplace tool that involves "the paid recruitment of an online, independent global workforce for the objective of working on a specifically defined task or set of tasks" (Behrend, Sharek, Meade, & Wiebe, 2011, p. 801). Participation in this study was voluntary. Participants were screened to include only those who are 18 years of age and above, native English speakers, since the task directions and survey was in English, and currently live in the United States or Canada. Participation in the study was open to those of different professional backgrounds, races, gender, and ages. Participants were compensated \$1.60 for completion of the tasks and survey. This amount was derived based on the United States minimum wage of \$7.25 per hour and an estimated 12 to 15 minutes to complete the study.

For testing the hypotheses of the focal study, I sought out to gather responses from a minimum sample size of approximately 100 per condition. This sample size was chosen in drawing on advice offered by Hair, Black, Babin, and Anderson (2010), who noted that when a structural equation model (SEM) has five or fewer latent constructs, at least four items per construct, and items load strongly onto respective constructs, 100 individuals are sufficient. Since the model tested in this study includes five latent



constructs each measured with between four and 10 items using established measurement models, a sample size of approximately 800 should be sufficient. Hair et al. (2010) warn against the use of unnecessarily large sample sizes since the statistical method becomes highly sensitive and almost any difference will be detected even if non-significant, making goodness of fit measures suggest poor fit.

### **Measures**

All items, instructions, and feedback messages included in the survey may be found in the Appendix.

#### **Demographics**

The survey included a demographic questionnaire that captured gender, age, ethnicity, nationality, occupation, years of work experience, and education. The demographic questions was the final set of questions on the survey, because demographic data are less critical than data captured by the other measures due to the present study's hypotheses not involving demographic data. Since participants could drop out of the study at any point, the more critical questions preceded the demographic questions.

#### **Telic and Paratelic State**

The Reversal Theory State Measure – Bundled Version (RTSM; Desselles, Murphy, & Theys, 2014) was administered to assess respondents' psychological state. A single item on this measure reflects the participant's presence in the telic or paratelic state. The item asks respondents to choose one of two groups of statements ("bundles") that describe what is motivating them at a particular moment. For example, the participant would choose between the telic bundle containing "accomplish something for the future," "do something serious," and "do something crucial" and the paratelic bundle

containing “enjoy myself at the moment,” “do something playful,” and “do something of no great concern.” Longer versions of the state measure exist; however, the bundled version was used for the present study, since it may be less prone to test reactivity and thus less likely to interfere with the participant’s current state (Desselles et al., 2014). In a study that involved students completing both the Bundled RTSM and the longer, Branched RTSM, Desselles et al. (2014) found that the two measures classified 86.5% of respondents into the same state for the telic and paratelic pair ( $K = .681, p < .001$ ). This suggests that the Bundled RTSM may validly classify people into the appropriate state for the means-and-ends domain specifically.

### **Positive and Negative Affect**

The Positive and Negative Affect Schedule (PANAS) was administered to assess the PA and NA of participants after receiving performance feedback. This scale includes 10 positive adjectives (e.g., excited, alert, enthusiastic) and 10 negative adjectives (e.g., scared, upset, distressed; Watson, Clark, & Tellegen, 1988). The participants were asked to respond to each adjective indicating the extent to which they experienced these feelings immediately after receiving the feedback. Response options included *very slightly or not at all* to *extremely*, on a 5-point scale. Watson et al. (1988) has demonstrated high reliability and validity of the PANAS. Two factors (PA and NA) emerged from a principal factor analysis demonstrating construct validity. All items had strong primary loadings (at least 0.50) on the appropriate factor. The Cronbach’s  $\alpha$  reliabilities were acceptable ranging from 0.86 to 0.90 for the PA subscale and 0.84 to 0.87 for the NA subscale. The correlation between the PA and NA scales range from -0.12 to -0.23 indicating that these two scales assess distinct affective factors.

### **Perceptions of Feedback Accuracy**

Kinicki et al. (2004) defined perceptions of feedback accuracy as participants' acceptance of feedback as accurate portrayals of their performance. Kinicki et al.'s five-item measure of perceptions of feedback accuracy was slightly adapted for the items to be relevant and clear for the present study. For instance, the item "The information discussed in the appraisal session was accurate" was altered to "The information provided in the performance feedback message was accurate." The item "My record as it was introduced in the session contains no errors" was changed to "My performance record as it was introduced in the feedback message contains no errors." The item "The performance feedback I received in my last performance appraisal session is an accurate assessment or portrayal of my performance" was altered to "The performance feedback I received in my performance feedback message is an accurate assessment or portrayal of my performance." The item "I am upset due to the inaccuracy of my feedback" was changed to "I feel that my feedback was inaccurate" since the original item assessed an affective rather than cognitive reaction. Also, recipients could have felt that the feedback is inaccurate without being upset. Response options ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Kinicki et al. (2004) demonstrated acceptable composite construct reliability (an assessment of internal consistency) of the original five-item measure at .89.

### **Distributive Justice Perceptions**

The four-item measure of distributive justice by Leventhal (1976) was used in the present study. The items include questions such as "Does your feedback reflect the effort you have put into your work?" and "Is your feedback appropriate for the work you have completed?" Response options included a 5-point scale with anchors of 1 = *a small extent*

and 5 = *to a large extent*. Colquitt (2001) demonstrated high validity and reliability of Leventhal's organizational justice measure, which assesses distributive justice as well as informational justice, interpersonal justice, and procedural. A confirmatory factor analysis indicated that a four-factor structure was the best fit, which provided evidence of distributive justice being a unique component of organizational justice. Cronbach's  $\alpha$  for the distributive justice factor was high at 0.92.

### **Desire to Respond**

Desire to respond was measured with four items: "After reading the feedback, I am looking forward to improving on the next trial," "I think that the feedback I received will help me to do better next time," "After seeing my feedback, I have some ideas about how to improve," and "I have no intention of using the feedback to guide my performance on the next task." Response options were on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The forth item was reverse-coded. This measure has demonstrated satisfactory construct validity through confirmatory factor analysis as well as high reliability ( $\alpha = 0.84$ ; Waples, 2015).

### **Goal Setting**

Goal setting was operationalized as the level of goal set by participants for Task 2. The goals set by participants differed for those in the nominal and relative feedback conditions. Participants in the nominal feedback condition were asked to set a goal for the number of universities for which they would provide color RGB codes. RGB codes are numbers that represent the specific combination of red, green, and blue used to construct any color. Participants in the relative feedback condition were asked to set a goal for the

percentage of participants they wanted to outperform. In both cases, there were six goal level options; therefore, their set goal was recorded as one through six.

### **Performance**

The RGB codes the participants provided in the survey were examined for accuracy and that indication of accuracy was used to determine the participants' performance scores. The participants were given the option of providing RGB codes for a maximum of six universities. Their performance level reflected the number of universities for which they accurately provided RGB codes. For instance, if participants accurately provided RGB codes for two universities, they were given a performance level of two.

## **Procedure**

### **Focal Study**

Recruitment of participants commenced with a message placed on MTurk indicating a need for workers to participate in a short task that will involve conducting an Internet search and providing the RGB numbers for several specified universities' primary colors. In the MTurk invitation to participate, prospective participants were falsely told that this information was being used to assist in developing a college information website and that they were being paid a base rate of \$1.00 plus an additional \$0.60 depending on their performance. In reality, all participants were paid the maximum amount of \$1.60. The purpose of the miscommunication was to encourage participants to set high goals rather than a goal of one or zero just to complete the survey. In addition, the performance-based pay context simulates a real-life work scenario and thus enhances the generalizability of the results.

In the MTurk posting, participants were provided with an online link to the survey on the Qualtrics platform. After reading and electronically signing the informed consent, the participants read an explanation of the process of the study. The explanation described the goal setting requests, the two 3-minute tasks, the performance feedback, and the survey. The communications to the participants are included in the Appendix.

After reading the instructions and participating in a trial task, participants set a goal for the first task. In the nominal condition, participants were asked to set a goal for the number of universities for which they intended to provide primary-color RGB numbers. In the relative condition, participants set a goal for the percentage of participants they intended to outperform, in other words, the percentage of participants they expected would find fewer RGB numbers than they would. Participants had some discretion over the goal level they set, with the restriction that the goal set is above a pre-defined minimum. The minimum goal for the relative condition was 40%, and the minimum goal for the nominal condition was calculated based on how many university RGB codes were identified by the pilot participants at the 40<sup>th</sup> percentile. The participants set their goals by selecting a choice out of a set of options in the survey with the lowest option being the minimum goal. In the goal-setting instructions, participants were told that they must select at least a minimum goal in order to receive the baseline payment for participation in the study. The reasoning behind the minimum goal communicated to the respondents was that a minimum goal discourages participants from getting the baseline payment without effort.

After a goal was established, the participants were shown a list of six pairs of university primary colors and were asked to indicate the RGB codes for those colors. One

of two lists was randomly assigned to each participant to hinder the participants from sharing the list on the Amazon's Mechanical Turk platform. The participants were given three minutes to complete the task. A timer was included on the survey page where the task information on each code was to be entered. The purpose of the timer was to inform participants of how much time remains on the task. After completing the task, each participant received one of eight types of feedback (positive accurate nominal, positive accurate relative, positive inaccurate nominal, positive inaccurate relative, negative accurate nominal, negative accurate relative, negative inaccurate nominal, or negative inaccurate relative). Each participant was randomly assigned into one of the two valence conditions and one of the two information type conditions. Accuracy was not randomly assigned because it is dependent upon valence and performance. The construction of the accuracy variable is explained in the following Data Analysis section. The feedback message participants received in each condition is outlined in Table 2.

Table 2

*Feedback Messages Provided to Each Condition*

<b>Condition</b>	<b>Feedback Message Shown</b>
<b>Nominal-Positive</b>	“Good job. You have reached your goal. You correctly identified the primary color RGB numbers for (your set/#) universities.”
<b>Nominal-Negative</b>	“Unfortunately, you failed to reach your goal. You failed to identify the primary color RGB numbers for (your set/#) universities.”
<b>Relative-Positive</b>	“Good job. You have reached your goal. You performed better than X% of the participants.”
<b>Relative-Negative</b>	“Unfortunately, you failed to reach your goal. You failed to perform better than X% of the participants.”

After the performance-feedback message is shown, a survey was administered that included the measures of state, affect, perceived feedback accuracy, desire to respond, and distributive justice as well as demographic questions. The order of the five measures as well as the items within each measure was randomized. This survey included 41 items and took approximately five minutes to complete. The directions for the state and affect measure stated that the respondents should indicate what they wanted or how they felt immediately following feedback. After completing the survey, the participants were asked to set a new goal for their performance on Task 2. This time, no limitations were given on the goal set. They were then allotted three minutes to complete the second



task and were randomly assigned one of two lists of university primary color pairs. After completing the task, the participants were debriefed, fully informed about the purpose of the study, and thanked. The researcher's contact information was provided in the instance that any questions or concerns need resolution.

### **Pilot Study**

A pilot study was conducted for three reasons. First, the performance data gathered were used to determine the minimum goal participants in the focal study's nominal condition must set. This was accomplished by determining the distribution of performance on the task for a representative sample of respondents and using the number of university RGB numbers accurately indicated by participants at the 40<sup>th</sup> percentile (which was the minimum required goal for participants in the relative condition). The second purpose of the pilot study was to investigate whether the manipulation of feedback as positive or negative and relative or nominal was effective. And thirdly, the pilot study was conducted to provide evidence as to whether a bonus of \$0.60 is sufficient to motivate respondents to set goals above the minimum requirement and complete the task.

The pilot study involved 30 participants recruited through MTurk setting goals, completing two rounds of the RGB code-gathering task, receiving feedback, and completing the survey. A sample size of 30 was chosen because that is the number needed in order to achieve a bell-curved distribution, according to Central Limit Theorem (Field, 2009). Participants experienced the same protocol as outlined in the *Focal study* section.

The pilot study participants received two questions to assess whether they realized the valence of and information included in the feedback message. The question “Did the performance feedback you received indicate that you reached your goal or failed to reach your goal?” assessed whether the participants realized the positive or negative valence of the feedback. The question “Which of the following types of information did your feedback contain?” assessed whether the participants realized that the feedback provided information regarding the number of university RGB numbers provided (nominal feedback) or the percentage of participants outperformed (relative feedback). Details on the response options for these questions are provided in the following section on the manipulation check.

### **Manipulation Check**

In both the pilot and focal studies, a manipulation check was conducted to determine whether the feedback was seen as appropriately positive, negative, relative, nominal, accurate, or inaccurate by the respondents. At the end of the survey, the respondents were asked whether the performance feedback they received indicated success or failure. Also, they were asked to indicate the type of information contained in the feedback, with the choices including whether the respondent (1) accurately indicated a set number of RGB numbers, and (2) outperformed a certain percentage of participants. If a respondent was not able to accurately indicate these qualities of the feedback received, then the manipulation was considered ineffective, and the data from that respondent were discarded.

## **Veracity Check**

Three items were randomly placed throughout the survey as veracity checks for inattentive responders. The items used included “I am answering this questionnaire using an electronic device,” “I have been to every country in the world,” and “I do not understand a word of English.” Previous research has demonstrated that these items effectively flag inattentive participants (Meade & Craig, 2012). A bolded statement was included in the informed consent form to make participants aware that safeguards are embedded in the survey to detect those who make insufficient effort while responding, such as not paying attention to the instructions or not reading the questions. Respondents who incorrectly responded to any one of the three veracity checks received a message indicating that they will be exited from the survey without payment due to inattentive responding. This message was displayed immediately following their incorrect response and was followed by the final page of the survey.

## **Data Analyses**

### **Preliminary Analyses**

Feedback accuracy and valence cannot both be randomly assigned, since accuracy is dependent upon the participant’s actual performance and the level of the feedback valence manipulation to which they are assigned (see Table 2 for feedback statements). To illustrate, consider a participant receiving positive feedback. If a participant met or exceeded a previously stated goal, a positive feedback message (e.g., “Good job! You reached your goal...”) will be accurate. However, if the participant did not meet or exceed a previously stated goal, then this feedback message will be inaccurate. Conversely, for a participant given negative feedback (e.g., “Unfortunately, you failed to

meet your goal...”), the feedback will be accurate only if the participant did not meet the goal, but inaccurate if the participant did meet or exceed the goal. Thus, feedback accuracy is determined by both a participant’s performance and the valence of the message that has been randomly assigned (positive or negative). Feedback valence was the randomly assigned variable because in practice, evaluators do not always have clear evidence upon which to base their judgments, opting instead for global “good” or “bad” judgments of performance. There are also logistical challenges with manipulating feedback accuracy within a survey platform, as the platform would have to automatically evaluate the participant’s performance. If participants were randomly provided with positive or negative feedback, the accuracy of the feedback would also be random as it would not be linked to their actual performance. Thus, manipulating valence or accuracy would result in random feedback messages in either case. The feedback accuracy variable was constructed after the data were gathered by examining whether feedback valence for each participant aligned with actual performance. If it did align, the respondent was classified into the accurate feedback condition. If it did not align, the respondent was classified into the inaccurate feedback condition.

I calculated the means, standard deviations, and Pearson correlations of the variables. I also calculated Cronbach’s  $\alpha$  to determine the internal consistency of the instruments used. No missing data existed in the cleaned dataset.

### **Hypothesis Testing**

Prior to testing the hypothesized structural model, a confirmatory factor analysis (CFA) was conducted to assess the construct validity of the latent constructs in the measurement model, which include PA, NA, perceived accuracy, desire to respond, and

distributive justice. The fit of the CFA was determined based on five fit statistics (Hair et al., 2010; Kline, 2005): (1) the  $\chi^2$  goodness of fit was examined for a non-significant  $p$  value, which indicates good fit, (2) a Root Mean Square Error of Approximation (RMSEA; Steiger, 1989) value of less than .08 was an additional indication of good fit, (3) a Standardized Root Mean Residual (SRMR) of less than 0.1 indicated good fit, (4) the Tucker Lewis Index (TLI; Tucker & Lewis, 1973) was assessed for the extent to which the value approaches 1, which indicates good fit, and (5) a Comparative Fit Index (CFI; Bentler, 1990) value of 0.9 or higher was used as an indication of good fit. The pattern of findings for these five fit indices was examined to inform an overall judgment of goodness of fit. The relatively large sample size of the present study was expected to result in an inflated and significant Chi Square statistic; therefore, the other four indicators were more strongly considered in judging fit.

A structural equation model (SEM) was conducted to test the entire structural model of the present study. SEM is a comprehensive, multivariate technique combining factor analysis and multiple regression. SEM is appropriate for the present study, since it enables the simultaneous examination of a series of interrelated dependent relationships among measured variables and constructs as well as between several constructs (Hair et al., 2010). SEM is useful for testing an entire theory that is composed of interrelated questions that involve variables acting as both predictors and outcomes. Figure 1 depicts the hypothesized causal structure that will be tested. The model-data fit was assessed using the same five fit statistics that were used to assess the CFA's fit (i.e.,  $\chi^2$  goodness of fit, SRMR, RMSEA, TLI, CFI). I will examine the direct and moderating effects in

determining whether the hypotheses are supported. I will also conduct a path analysis by examining the linkages of indirect effects from feedback valence to Time 2 performance and from feedback accuracy to Time 2 performance.

## CHAPTER THREE

### RESULTS

#### Pilot Study

Thirty participants completed the pilot study. The pilot study provided evidence that the manipulation check worked, since 83.3% of participants accurately recalled the valence of the feedback message they received, and 93.3% of participants accurately recalled the FIT of the feedback message they received. The pilot study also provided evidence that \$0.60 did sufficiently motivate the participant to set goals higher than the minimum goal response option. For Goal 1, the mean was 3.67 (on a 6-point scale), the standard deviation was 1.84, and the range was 5. For Goal 2, the mean was 3.17, the standard deviation was 1.82, and the range was 5. See Table 3 and Table 4 for the percentage of participants who selected each goal level.

Table 3

*Percentage of Participants Who Selected Each Goal 1 Level*

Goal 1 Level	% Chosen
1	20.0
2	10.0
3	16.7
4	10.0
5	23.3
6	20.0

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Table 4

*Percentage of Participants Who Selected Each Goal 2 Level*

Goal 2 Level	% Chosen
1	23.3
2	20.0
3	20.0
4	6.7
5	13.3
6	16.7

The pilot study also informed the decision in the focal study regarding the minimum goal that would be allowed in Task 1 for those in the nominal condition in order to make this condition parallel to the minimum goal of 20% for participants in the relative condition. The minimum nominal goal was determined by examining the number of University primary color (pairs) RGB codes accurately reported by participants at the 20<sup>th</sup> percentile. Table 5 shows the number of RGB code pairs found by the participants in each percentile. If 20% was chosen as the minimum goal for the relative condition, then one would have been the appropriate minimum goal for the nominal condition. However, one was already the minimum goal, so 40% and two were decided upon as minimum goals for Task 1 in the focal study.

Table 5

*Number of RGB Code Pairs Found at Each Performance Percentile*

Percentiles	Number found
1%	0
20%	1
40%	2
60%	2
80%	3
100%	5



### Preliminary Analyses

The means, standard deviations, Cronbach's  $\alpha$ , and correlation coefficients of all variables are included in Table 6. The Cronbach's alpha was calculated for each measure to evaluate the internal consistency of the measure. Nunnally and Bernstein (1978) recommended a Cronbach's alpha of at least 0.70 to conclude that a measure has sufficient internal consistency. Since all Cronbach's alphas for instruments with interval-level scaling are above 0.70, I conclude that all measures in the model are internally reliable. Table 7 shows the percentage of participants who were in the paratelic versus telic state and who received each type of feedback. The SEM included the covariances between the dichotomous variables. Feedback valence and feedback accuracy were significantly related ( $-0.17, p < 0.01$ ), and feedback valence and state were significantly related ( $-0.04, p < 0.01$ ).

Table 6

*Descriptive Statistics of Variables Including Means, Standard Deviations, Cronbach's Alpha, and Correlation Coefficients*

Variables	Mean	SD	PA	NA	POFA	DJ	DTR	Goal1	Goal2	Perf1
PA	2.77	0.97	(0.93)							
NA	1.57	0.67	-0.09*	(0.89)						
POFA	3.35	1.12	0.23**	-0.13**	(0.93)					
DJ	3.46	1.13	0.35**	-0.15**	0.78**	(0.93)				
DTR	3.51	0.91	0.45**	-0.04	0.39**	0.44**	(0.82)			
Goal1	5.17	1.09	0.07	0.02	-0.03	-0.01	0.10**	-		
Goal2	4.20	1.54	0.19**	-0.12**	0.11**	0.17**	0.06	0.49**	-	
Perf1	2.07	1.25	-0.01	-0.03	0.03	0.03	-0.10**	0.13**	0.30**	-
Perf2	2.14	1.45	-0.04	-0.01	0.06	0.06	0.00	0.12**	0.27**	0.58**

*Note.* The Cronbach's alphas are shown in parentheses. POFA = perceptions of feedback accuracy, DJ = distributive justice, DTR = desire to respond, Goal1 = goal set for the first task, Goal 2 = goal set for the second task, Perf1 = performance on the first task, and Perf2 = performance on the second task.

Table 7

*Frequency of Categorical Variables*

Variables	Frequency
State	
Telic	64.38%
Paratelic	35.63%
Feedback Valence	
Positive	49.25%
Negative	50.75%
Feedback Accuracy	
Accurate	49.38%
Inaccurate	50.63%
Feedback Type	
Nominal	49.50%
Relative	50.50%

A multi-step process was followed to delete error outliers, which are data points that lie at a distance from other data points because of inaccurate recording (Aguinis, Gottfredson, & Joo, 2013). For instance, responses that were deemed the result of inattentive responding are a type of error outlier. I screened out error outliers that were due to inattentive responding using three approaches: (1) veracity-check items (e.g., “I do not speak a word of English;” Meade & Craig, 2012), (2) feedback-recall questions, and (3) consistent-response pattern plus failure to provide RGB codes. First, I designed the survey such that an incorrect response to any one of the three inattentive-responding questions automatically exited the participant from the survey; therefore, their results were never included in the current dataset. The survey link was opened 1,780 times; however, there were only a total of 903 participants who completed the survey and passed the inattentive responding checks and whose data were analyzed further. Second, I checked for additional inattentive responders by examining whether the participant could accurately state whether the feedback received was nominal versus ordinal or positive

versus negative. This process resulted in the elimination of 14 participants. Third, I examined the data from participants whose patterns of responding showed the same response option for every question (with the exception of the inattentive-responding checks) and who also failed to provide a single RGB code. Two responses met these criteria for removal from the analysis. An additional 87 responses were deleted for failure to complete the survey. In total, 103 responses were eliminated from the final dataset of submitted surveys leaving 800 remaining for analysis.

To check for multivariate normality, I ran Mardia's Multivariate Normality (MVN) test and Henze-Zirkler's MVN test and examined a Q-Q plot. Mardia's MVN test is a test of multivariate skewness and kurtosis (Mardia, 1970) and resulted in a significant ( $p < .001$ ) chi-square skewness value of 24,727.86 and a significant ( $p < .001$ )  $z$  kurtosis value of 99.50, indicating that the data are not multivariate normal. Henze-Zirkler's MVN test (Henze & Zirkler, 1990) resulted in a significant ( $p < .001$ ) HZ value of 1.01. This test also indicates that the data deviate from multivariate normality. The Q-Q plot shown in Figure 4 visually demonstrates that the data do indeed deviate from multivariate normality. In response to the findings that the data violated the assumption of multivariate normality, I used the Diagonally Weighted Least Squares (DWLS) estimator for the CFA and SEM, which is robust to violations of the assumptions of normality (Finch & French, 2015; Mindrila, 2010).

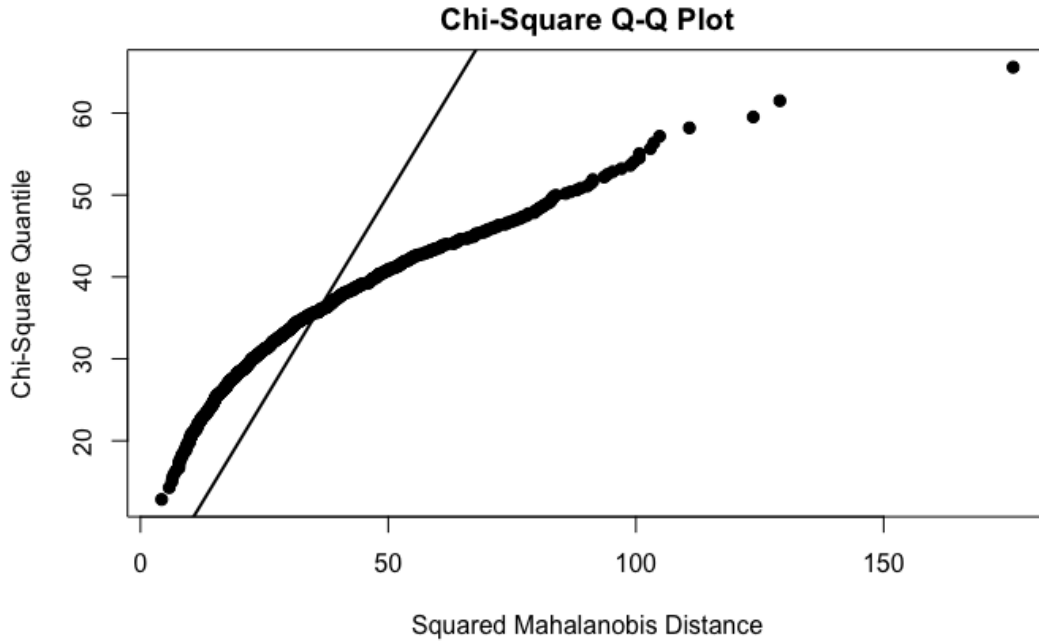


Figure 4. *Q-Q Plot Assessing Multivariate Normality*

A CFA was conducted to assess the convergent and discriminant validity of the latent constructs in the measurement model, which include PA, NA, perceived accuracy, desire to respond, and distributive justice. The fit of the CFA was determined based on fit statistics previously specified in the *data analytics* section of this paper (Bentler, 1990; Hair et al., 2010; Kline, 2005; Steiger, 1989; Tucker & Lewis, 1973) except for the RMSEA and SRMR. When using the DWLS estimator, a RMSEA of less than or equal to 0.06 and a SRMR of less than or equal to 0.08 indicate good fit (Finch & French, 2015; Mindrila, 2010). These two criteria are more conservative than the common criteria of less than or equal to 0.08 for RMSEA and less than 0.10 for SRMR. The resulting CFA had unacceptable fit ( $\chi^2 = 2307.99$ ,  $df = 485$ ,  $p < .001$ ; RMSEA = 0.07, SRMR = 0.081, TLI = 0.94, CFI = 0.95). While the RMSEA and CFI indicated acceptable fit, the  $\chi^2$ , SRMR, TLI indicated poor fit. This pattern of fit statistics is indicative of suboptimal fit of the measurement model.

To investigate potential causes of suboptimal fit of the measurement model, I examined model-fit outliers (i.e., influential outliers). Influential outliers refer to accurate responses that lie at a distance from other data points and influences the fit of the model or the parameter estimates of the model (Aguinis et al., 2013). Aguinis et al. suggest identifying these outliers using an index plot and generalized Cook's  $D$  ( $gCD$ ). The index plot of multivariate outliers shown in Figure 5 shows that the seven points deviate markedly from the average of the group. Therefore, I removed those seven multivariate outliers.

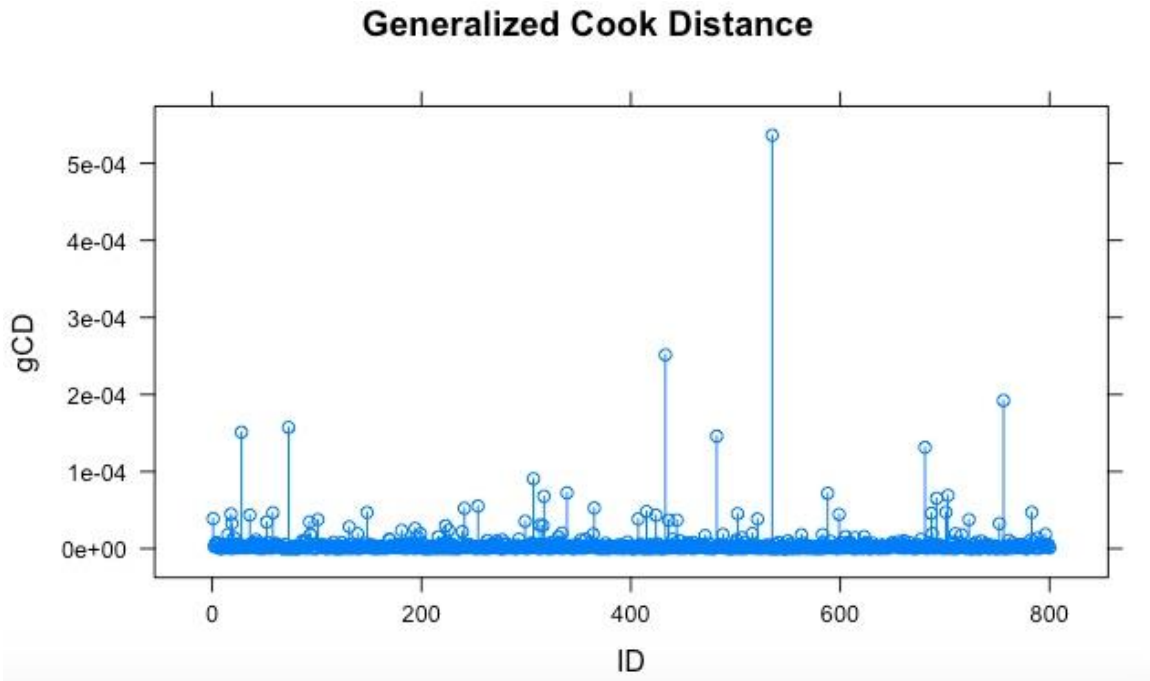


Figure 5. *Generalized Cook Distance Plot Identifying Outliers*

After removing the seven outliers, I reran the CFA which again had unacceptable fit ( $\chi^2 = 2,223.55$ ,  $df = 485$ ,  $p < .001$ ; RMSEA = 0.07; SRMR = 0.08; TLI = 0.94; CFI = 0.95); therefore, the modification indices (MI) were examined to discover any potential cross-loadings of items. The largest six MIs revealed that two items from the NA scale,

*jittery* and *irritable* were cross-loading onto other factors including PA, desire to respond, and distributive justice. Specifically, the MI of *jittery* and PA was 296.69, *irritable* and desire to respond was 264.17, *irritable* and PA was 224.48, *jittery* and desire to respond was 224.29, *irritable* and distributive justice was 185.40, and *jittery* and distributive justice was 175.49. Due to *jittery* and *irritable* cross-loading onto inappropriate factors, I removed them from the model for all future analyses. Since less than 20% of the measured variables reflecting NA were deleted, this modification is considered minor and not requiring reevaluation with a new data set (Hair et al., 2010). Hair et al. state that only four measured variables for a latent construct are needed to obtain an overidentified model, meaning there is sufficient construct coverage. Since the latent construct, NA is captured using eight items after the removal of *jittery* and *irritable*, NA remains overidentified. The resulting CFA had acceptable fit ( $\chi^2 = 1,559.31$ ,  $df = 424$ ,  $p < .001$ ; RMSEA = 0.06; SRMR = 0.07; TLI = 0.96; CFI = 0.96). The standardized factor loadings of all items onto their respective latent constructs were significant at the  $p < .001$  level and can be found in Table 8.

Table 8

*Unstandardized Effects, Standardized Effects, and Significance Levels for Model in Figure 1*  
(*N* = 793)

<i>Parameter Estimate</i>	<i>Unstandardized</i>	<i>Standardized</i>	<i>p</i>
Measurement Model Estimates			
Perceptions of Feedback Accuracy			
PercepAcc1	0.94	0.93	0.00
PercepAcc2	0.82	0.77	0.00
PercepAcc3	0.96	0.94	0.00
PercepAcc4	0.92	0.79	0.00
PercepAcc5	0.98	0.93	0.00
Positive Affect			0.00
Interested	0.80	0.78	0.00
Excited	0.86	0.78	0.00
Strong	0.77	0.73	0.00
Enthusiastic	0.94	0.84	0.00
Proud	0.81	0.75	0.00
Determined	0.81	0.75	0.00
Attentive	0.61	0.62	0.00
Active	0.77	0.70	0.00
Inspired	0.90	0.80	0.00
Alert	0.62	0.59	0.00
Negative Affect			0.00
Distressed	0.80	0.81	0.00
Upset	0.95	0.94	0.00
Guilty	0.57	0.66	0.00
Scared	0.26	0.40	0.00
Hostile	0.46	0.59	0.00
Ashamed	0.69	0.71	0.00
Nervous	0.49	0.51	0.00
Afraid	0.26	0.40	0.00
Desire to Respond			0.00
DesToResp1	0.57	0.77	0.00
DesToResp2	0.73	0.81	0.00
DesToResp3	0.58	0.68	0.00
DesToResp4	0.53	0.60	0.00
Distributive Justice			0.00
DisJust1	0.57	0.75	0.00
DisJust2	0.69	0.93	0.00
DisJust3	0.66	0.91	0.00
DisJust4	0.69	0.95	0.00

Structural Model			
Goal1 -> Perf1	0.24	0.21	0.00
Goal2 -> Perf2	0.12	0.12	0.01
Perf1 -> Perf2	0.65	0.56	0.00
DTR -> Goal2	0.26	0.22	0.00
Goal1 -> Goal2	0.87	0.61	0.00
PA -> DTR	0.47	0.42	0.00
NA -> DTR	0.15	0.12	0.00
DJ -> DTR	0.32	0.40	0.00
POFA -> DJ	1.17	0.80	0.00
Valence -> POFA	0.58	0.25	0.00
Accuracy -> POFA	1.14	0.49	0.00
Type -> POFA	0.37	0.16	0.00
State -> POFA	0.12	0.05	0.19
Accuracy*Type -> POFA	1.28	0.28	0.00
State*Accuracy -> POFA	0.40	0.08	0.02
State*Valence -> POFA	0.57	0.12	0.00
Valence -> PA	0.91	0.39	0.00
DJ -> PA	0.25	0.36	0.00
State -> PA	0.41	0.17	0.00
State*Valence -> PA	-0.09	-0.02	0.62
Valence -> NA	0.56	0.27	0.00
DJ -> NA	-0.12	-0.19	0.00
State -> NA	0.16	0.07	0.07
State*Valence -> NA	-0.06	-0.01	0.74

### Hypothesis Testing

A test of the altered model indicated that model-data fit was acceptable ( $\chi^2 = 2538.31$ ,  $df = 778$ ,  $p < .001$ ; CFI = 0.95; TLI = 0.95; RMSEA = 0.05; SRMR = 0.07).

The individual parameters from the regressions including the standardized coefficients and their significance values are displayed in Figure 6. All individual parameters in the model were significant ( $p < .01$ ) except for state as a moderator of the feedback valence – PA relationship and state as a moderator of the feedback valence – NA relationship.



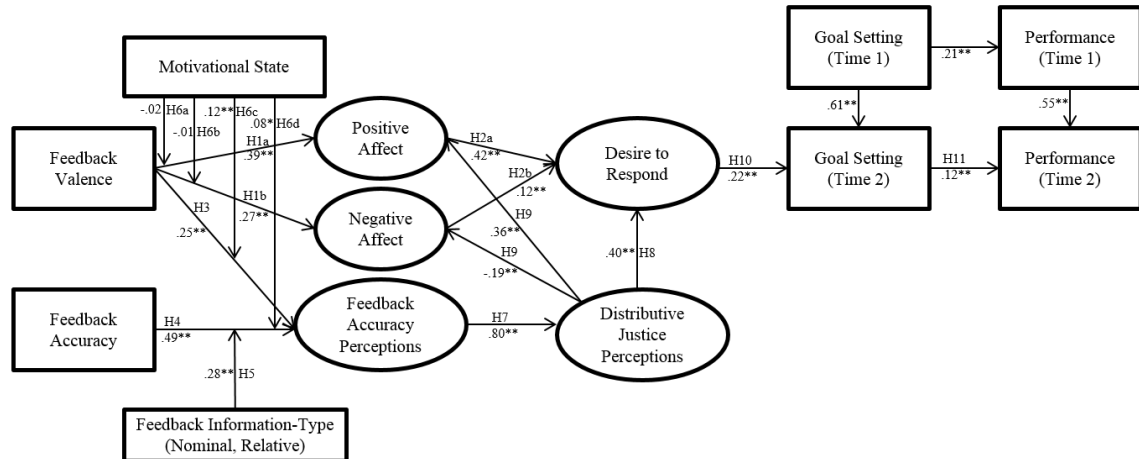


Figure 6. *The Tested Model with Direct Effects*

Table 9 shows the findings by each hypothesis. Hypothesis 1 stated that recipients of positive feedback will experience stronger PA. Conversely, recipients of negative feedback will experience stronger NA. The effects of feedback valence (positive vs. negative) on PA ( $\beta = 0.39, p < .001$ ) and NA ( $\beta = -0.27, p < .001$ ) were both significant and in the directions indicated by Hypothesis 1. Therefore, Hypothesis 1 was supported.

Table 9

*Hypotheses and Conclusions*

Hypothesis	$\beta$	Significance level	Result	Notes
1 Feedback valence influences affect, such that (A) recipients of positive feedback will experience stronger PA compared to recipients of negative feedback, and (B) recipients of negative feedback will experience stronger NA compared to recipients of positive feedback.	0.39 (valence & PA); - 0.27 (valence & NA)	<.001; <.001	Supported ; Supported	
2 (A) PA will be positively related to desire to respond to feedback, and (B) NA will be negatively related to desire to respond to feedback.	0.42; 0.12	<.001; <.001	Supported ; Not supported	The effect of NA on desire to respond was positive, while Hypothesis 2B stated that the relationship would be negative.
3 Feedback valence will positively affect perceptions of feedback accuracy.	0.25	<.001	Supported	
4 Feedback accuracy will positively affect perceptions of feedback accuracy.	0.49	<.001	Supported	
5 Feedback information type (nominal or relative) will moderate the relationship between feedback accuracy and perceptions of feedback accuracy. Actual feedback accuracy will be more strongly related to perceptions of feedback accuracy when the feedback is nominal rather than relative.	0.28	<.001	Supported	
6 Motivational state will moderate several of the relationships in the model. Specifically, the following relationships will be stronger when the participant is in the telic state compared to the	0.02; 0.01; -0.12; -0.08	0.62; 0.74; <.001; 0.02	Not supported	Hypothesis 6C was significant; however, the relationship was not in the hypothesized direction.

	paratelic state: (A) Feedback valence and positive affect, (B) Feedback valence and negative affect, (C) Feedback valence and perceived accuracy, (D) Feedback accuracy and perceived accuracy.				Hypothesis D was significant and was further tested using a plot of the interaction and an ANOVA which both indicated an interaction did not exist.
7	Perceived feedback accuracy will be positively related to perceptions of distributive justice.	0.80	<.001	Supported	
8	Perceptions of distributive justice will be positively related to desire to respond to the feedback.	0.40	<.001	Supported	
9	Distributive justice will be (A) positively related to PA and (B) negatively related to NA.	0.36	<.001	Supported	
10	Desire to respond to feedback will be positively related to Task 2 goal.	0.22	<.001	Supported	
11	Task 2 goal will be positively related to Task 2 performance after feedback.	0.12	<.001	Supported	

Hypothesis 2 stated that (A) PA would be associated with a higher desire to respond to feedback, and conversely, (B) NA would be associated with a lower desire to respond to feedback. The effects of PA on desire to respond ( $\beta = 0.42, p < .001$ ) was significant and in the direction indicated by Hypothesis 2A. The effect of NA on desire to respond ( $\beta = 0.12, p < .001$ ) was significant but in the opposite direction indicated by Hypothesis 2B. Specifically, it was hypothesized that NA would be negatively related to desire to respond; however, NA was positively related to desire to respond. Therefore, Hypothesis 2A was supported and 2B was not supported.

Hypothesis 3 stated that participants who received positive feedback will experience greater perceptions of feedback accuracy, while participants who received negative feedback will experience lower perceptions of feedback accuracy. The effect of feedback valence (positive vs. negative) on perceptions of feedback accuracy ( $\beta = 0.25, p < .001$ ) was significant and in the direction indicated by Hypothesis 3. Therefore, Hypothesis 3 was supported.

Hypothesis 4 stated that participants who receive accurate feedback will experience greater perceptions of feedback accuracy, while participants who received inaccurate feedback will experience lower perceptions of feedback accuracy. The effect of feedback accuracy on perceptions of feedback accuracy ( $\beta = 0.49, p < .001$ ) was significant and in the direction indicated by Hypothesis 4. Therefore, Hypothesis 4 was supported.

Hypothesis 5 stated that the effect of feedback accuracy on perceptions of feedback accuracy will be stronger for participants who receive nominal feedback and weaker for participants who receive relative feedback. The moderating effect of FIT on the relationship between feedback accuracy and perceptions of feedback accuracy ( $\beta = 0.28, p < .001$ ) was significant and in the direction indicated by Hypothesis 5. The bar chart shown in Figure 7 displays the interaction between feedback accuracy and FIT on perceptions of feedback accuracy. This chart suggests that for those who received nominal feedback, the relationship between feedback accuracy and perceptions of feedback accuracy was strong and positive. For those who received relative feedback, the relationship between feedback accuracy and perceptions of feedback accuracy was substantially weakened. Therefore, Hypothesis 5 was supported.

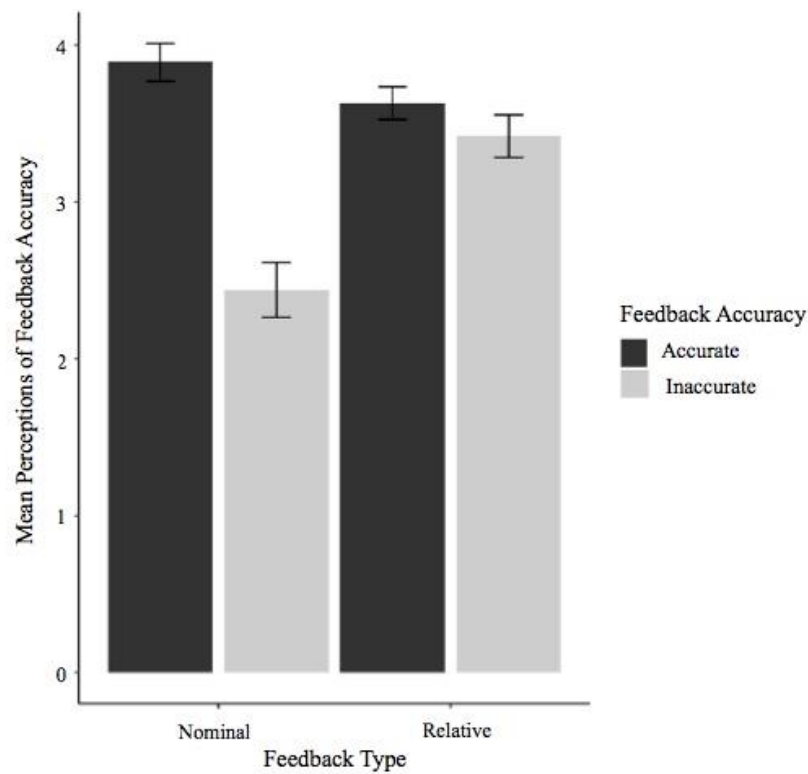


Figure 7. *The Interaction of FIT and Feedback Accuracy on Perceptions of Feedback Accuracy*

Hypothesis 6 stated that the relationships that feedback valence has with (A) PA, (B) NA, and (C) perceived feedback accuracy, and (D) the relationship that feedback accuracy has with perceptions of feedback accuracy will be stronger for participants in the telic state compared to participants in the paratelic state. The moderating effect of state on the relationship between feedback valence and PA ( $\beta = 0.02$ ,  $p = 0.62$ ) was non-significant. Therefore, Hypothesis 6A was not supported. The moderating effect of state on the relationship between feedback valence and NA ( $\beta = 0.01$ ,  $p = 0.74$ ) was non-significant. Therefore, Hypothesis 6B was not supported. The moderating effect of state on the relationship between feedback valence and perceived feedback accuracy ( $\beta = -0.12$ ,  $p < .001$ ) was significant. A bar chart of the interaction effect of state and feedback

valence on perceptions of feedback accuracy shown in Figure 8 suggests that those in the telic state perceived positive feedback as less accurate and negative feedback as more accurate. Those in the paratelic state perceived positive and negative feedback similarly in accuracy. This finding is inconsistent with Hypothesis 6C. This bar chart does not account for the fact that negative feedback was more frequently accurate than positive feedback; thus, telic participants may have been more attentive to the true accuracy of the feedback than paratelic participants. Therefore, Hypothesis 6C was not supported. The moderating effect of state on the relationship between feedback accuracy and perceptions of feedback accuracy ( $\beta = -0.08$ ,  $p = 0.02$ ) was significant. The bar chart of this relationship shown in Figure 9 suggests that no interaction existed. The relationship between feedback accuracy and perceptions of feedback accuracy was strong and positive for both those in the telic and paratelic states. A follow-up analysis of variance was conducted on this relationship and resulted in a non-significant effect ( $F(1,785) = 0.05$ ,  $p = .83$ ). The small effect size of  $-0.08$  may have only achieved significance due to the large sample size. Therefore, Hypothesis 6D was not supported.

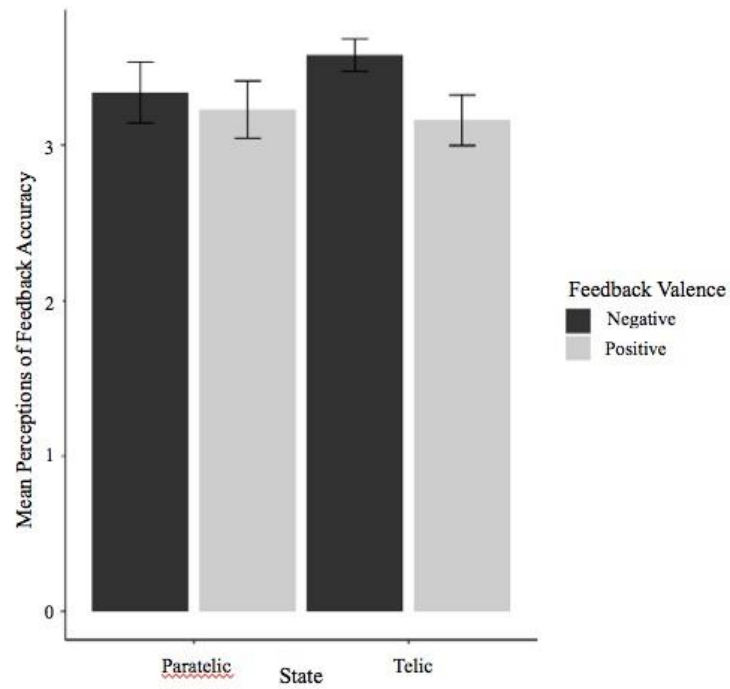


Figure 8. *The Interaction of Feedback Valence and State on Perceptions of Feedback Accuracy*

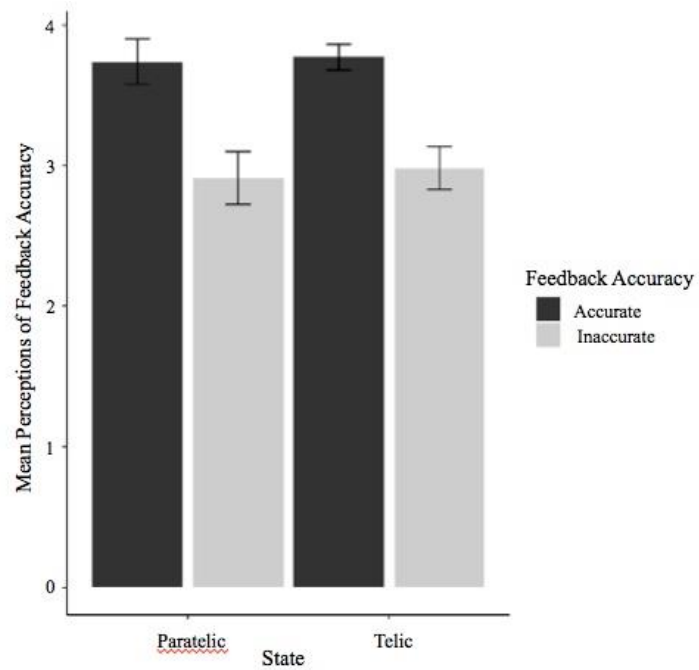


Figure 9. *The Interaction of Feedback Accuracy and State on Perceptions of Feedback Accuracy*

Hypothesis 7 stated that participants' perceived feedback accuracy will be positive related to their perceptions of distributive justice. The effect of perceived feedback accuracy on perceptions of distributive justice ( $\beta = 0.80, p < .001$ ) was significant and in the direction indicated by Hypothesis 7. Therefore, Hypothesis 7 was supported.

Hypothesis 8 stated that participants' perceptions of distributive justice will be positively related to their desire to respond to the feedback. The effect of perceived distributive justice on desire to respond ( $\beta = 0.40, p < .001$ ) was significant and in the direction indicated by Hypothesis 8. Therefore, Hypothesis 8 was supported.

Hypothesis 9 stated that participants' perceptions of distributive justice will be (A) positively related to PA and (B) negatively related to NA. The effects of perceptions of distributive justice on PA ( $\beta = 0.36, p < .001$ ) and NA ( $\beta = -0.19, p < .001$ ) were significant and in the directions indicated by Hypothesis 9. Therefore, Hypothesis 9 was supported.

Hypothesis 10 stated that participants' desire to respond to feedback will be positively related to goal setting. The effect of desire to respond on Time 2 goal ( $\beta = 0.22, p < .001$ ) was significant and in the direction indicated by Hypothesis 10. Therefore, Hypothesis 10 was supported.

Hypothesis 11 stated that goal setting will be positively related to performance on Task 2. The effect of goal setting for Task 2 on performance on Task 2 ( $\beta = 0.12, p < .001$ ) was significant and in the direction indicated by Hypothesis 11. Therefore, Hypothesis 11 was supported.



To examine whether feedback characteristics affected performance indirectly as implied by the model, indirect effects were estimated. Table 10 displays the estimates of each complete path implied by the model as well as the standard errors, z-values, and significance values of each path. Of the several pathways through which feedback characteristics might influence performance, three were significant. The first significant path ( $p = 0.045$ ) is from feedback valence to PA to desire to respond to the goal set at Time 2. The second significant path ( $p = 0.045$ ) is from feedback accuracy to perceptions of feedback accuracy to distributive justice to PA to desire to respond to goal set at Time 2. The third significant path ( $p = 0.04$ ) is from feedback accuracy to perceptions of feedback accuracy to distributive justice to desire to respond to goal set at Time 2.

Table 10

*Estimates of Indirect Effects of the SEM*

	Estimate	Standard Error	z-value	Significance Level
Defined Parameters:				
FV-PA-DTR-G2	-0.01	0.01	-2.00	0.05
FV-NA-DTR-G2	0.00	0.00	1.68	0.09
FV-POFA-DJ-NA-DTR-G2	0.00	0.00	1.52	0.13
FV-POFA-DJ-PA-DTR-G2	0.00	0.00	-1.87	0.06
FV-POFA-DJ-DTR-G2	-0.01	0.00	-1.92	0.06
FA-POFA-DJ-NA-DTR-G2	0.00	0.00	1.58	0.12
FA-POFA-DJ-PA-DTR-G2	-0.01	0.00	-2.01	0.05
FA-POFA-DJ-DTR-G2	-0.01	0.01	-2.05	0.04
FV-St-PA	0.00	0.00	-0.48	0.63
FV-St-NA	0.00	0.00	-0.33	0.74
FV-St-POFA	0.00	0.00	-1.28	0.20
FA-FT-POFA	0.00	0.00	-1.44	0.15
FA-St-POFA	0.00	0.00	-1.19	0.23

*Note.* FV = feedback valence, DTR = desire to respond, G2 = goal set at Time 2, POFA = perceptions of feedback accuracy, DJ = distributive justice, FA = feedback accuracy, St = state, and FT = feedback type.

### Follow-Up Analysis on List Content

One potential area of concern with the design of the present study is whether the content of the list of university primary colors may have contributed to the participants' performance levels on the task. For both Task 1 and Task 2, participants were randomly assigned List A or List B, each of which consisted of six universities' primary colors. An independent *t*-test was conducted to determine if performance on the task was significantly different for participants randomly assigned List A versus List B. For Task 1, the *t*-test revealed that performance was significantly higher for participants with List A ( $M = 2.44$ ,  $SD = 1.70$ ) and lower for List B ( $M = 1.84$ ,  $SD = 1.07$ ,  $t(675.12) = 5.94$ ,  $p < 0.01$ ). For Task 2, the *t*-test again revealed that performance was significantly higher for participants with List A ( $M = 2.21$ ,  $SD = 1.23$ ) and lower for List B ( $M = 1.94$ ,  $SD = 1.26$ ,  $t(798) = 3.05$ ,  $p < 0.01$ ). Since list content did relate to performance on the task, Task 1 list content and Task 2 list content were added to the SEM as predictors of performance (on Task 1 and Task 2 respectively) and as moderators of the relationship between goal set and performance (for Task 1 and Task 2 respectively). List content for Task 1 had a significant although weak effect on Task 1 performance ( $\beta = -0.10$ ,  $p < .05$ ) and did not have a significant moderating effect on the relationship between Task 1 goal and Task 1 performance ( $\beta = -0.02$ ,  $p > .05$ ). List content for Task 2 had a significant effect on Task 2 performance ( $\beta = -0.20$ ,  $p < .01$ ) and a significant although weak moderating effect on the relationship between Task 2 goal and Task 2 performance ( $\beta = -0.10$ ,  $p > .01$ ). With the addition of these four new relationships, there were no substantial changes to any of the effect sizes amongst the other variables included in the model and no changes to the original conclusions.

## **CHAPTER FOUR**

### **DISCUSSION**

This dissertation was the first study to test the proposed comprehensive process model of reactions to performance feedback. The findings of this dissertation support many of the theories tested including behavioral motivation theory (Gray, 1990), organizational justice theory (Greenberg, 1987), the theory of planned behavior (Fishbein & Ajzen, 1975), and goal setting theory (Latham & Locke, 1991). In this section, I will elaborate on the meaning behind the hypotheses as well as the supported and unsupported pathways in the model. I will also discuss the implications of the findings for practitioners and how the findings advance the performance-feedback literature.

#### **Hypothesized Relationships**

The majority of the hypotheses tested in this study were supported with the exception of Hypothesis 2B and Hypotheses 6(A-D). Feedback valence affected the participants' PA or NA immediately after receiving feedback; therefore, Hypothesis 1 was supported. The results suggest that participants receiving positive feedback tend to experience higher levels of PA and lower levels of NA, whereas participants receiving negative feedback tend to experience lower levels of PA and higher levels of NA. The relationship between feedback valence and affect has been supported by many studies

(Ilies et al., 2007; Ilies & Judge, 2005; Kluger et al., 1994; Venables & Fairclough, 2009). These findings are consistent with behavioral motivation theory (Gray, 1990), which suggests that rewards or punishments activate either a BAS or a BIS which are part of a biopsychological system. Positive feedback presumably activates the BAS which enhances positive emotions and promotes approach motives. Punishments presumably activate the BIS, which enhances negative emotions and promotes avoidance motives. Desire to respond is similar to an approach orientation because the recipient wants to approach the feedback and use it in subsequent goal setting. These findings contribute to the performance-feedback literature by providing further support for the research demonstrating a link between feedback valence and affect (Ilies et al., 2007; Ilies & Judge, 2005; Kluger et al., 1994; Venables & Fairclough, 2009). These findings also provide indirect support for Gray's (1990) behavioral motivation theory.

Hypothesis 2A was supported, suggesting that participants' PA levels will positively relate to their desire to respond to the feedback they have received. However, Hypothesis 2B was not supported which suggests that NA is not associated with a weakened desire to respond to the feedback. Interestingly, negative feedback was associated with a significant increase in desire to respond to feedback. While Hypothesis 2A supports a part of behavioral motivation theory, Hypothesis 2B does not. The finding that NA is positively related to desire to respond to feedback is consistent with control theory (Carver & Scheier, 1981), which suggests that after receiving performance feedback, individuals focus on minimizing any discrepancies between their goals and performance. Recipients of negative feedback may respond to the feedback by increasing their level of effort and performance. In the present study, recipients of negative feedback

experienced NA followed by an enhanced desire to respond to the feedback, which may be explained as their attempt to minimize their goal-performance discrepancy.

Hypothesis 3 was supported, suggesting that feedback valence is positively related to perceptions of feedback accuracy. This is consistent with the research on the credibility gap and self-serving biases (Halperin et al., 1976; Jacobs et al., 1973; Johnson & Nawrocki, 1967) that has shown that feedback recipients are more likely to perceive positive feedback as credible and negative feedback as less credible because positive feedback is typically consistent with a person's own self-image.

Hypothesis 4 and 5 were both supported. Hypothesis 4 suggests that feedback accuracy will positively influence perceptions of feedback accuracy. Hypothesis 5 introduced a moderator to the feedback accuracy-perceptions of feedback accuracy relationship and was supported. FIT moderated the relationship between feedback accuracy and perceptions of feedback accuracy. As hypothesized, the relationship between actual feedback accuracy and perceptions of feedback accuracy was stronger for participants who were given nominal feedback and was weaker for those who were given relative feedback. This study was the first to test and find support for the moderating influence of FIT on the relationship between feedback accuracy and recipient perceptions of feedback accuracy. Recipients likely had stronger judgments of feedback accuracy if they received nominal feedback (as opposed to relative feedback) because they had evidence (i.e., their memory of the RGB codes they reported) of the accuracy of the nominal feedback. Recipients who received relative feedback likely had weaker judgments of feedback accuracy due to the fact that they had no evidence of how the other participants performed and thus no evidence of the accuracy of the relative

feedback. Interestingly, there was a significant ( $p < .01$ ) direct effect of feedback type on perceptions of feedback accuracy ( $\beta = -0.16$ ). Relative feedback was more likely than nominal feedback to be perceived as accurate. This information may be useful to managers in deciding which type of feedback to provide when the goal is to enhance their subordinates' perceptions of feedback accuracy.

Hypotheses 6A-D were not supported. Motivational state did not moderate the relationship that feedback valence had with PA, NA, or perceptions of feedback accuracy. State also did not moderate the relationship between feedback accuracy and perceptions of feedback accuracy. It was hypothesized that participants in the telic state would react more strongly to feedback since they are goal-focused compared to those in the paratelic state who are enjoyment-focused. However, the findings do not support this hypothesis. Interestingly, state and PA were significantly related ( $\beta = 0.17, p < .01$ ). This suggests that participants who were in the telic state were more likely to experience higher levels of PA than participants in the paratelic state. This finding is consistent with reversal theory, because participants in the telic state were in a situation where they were working towards achieving a goal, which is consistent with their goal-oriented motives. In contrast, it is thought that those in the paratelic state wanted to enjoy the moment, but were in a goal-oriented situation, which conflicted with their motives. This finding suggests that one way to increase the positive affect of employees in the telic state would be to encourage them to set goals. In contrast, to increase the positive affect of employees in the paratelic state, employers may want to consider avoiding goal-oriented tasks within the limits of practicality.

Hypothesis 7, 8, and 9 were supported, which clarifies the links between perceptions of feedback accuracy and perceptions of distributive justice (Hypothesis 7), perceptions of distributive justice and desire to respond (Hypothesis 8), and perceptions of distributive justice and affect (positive and negative; Hypothesis 9). These three hypotheses are based on Greenberg's justice theory (Greenberg, 1987), which states that individuals judge whether the outcomes they receive match the effort (inputs) they gave. If the outcomes and inputs do not match, perceptions of injustice are heightened. In other words, justice perceptions are formed by a judgment of whether effort level matches the outcome. The participants who judged their feedback as accurate were more likely to form perceptions that the feedback was fair compared to participants who judged their feedback as inaccurate. Participants who judged the feedback as just were more likely to have a high desire to respond to the feedback than those who judged the feedback as unjust. This finding is consistent with the claims of organizational justice theory in that fairness perceptions influence approach and avoidance orientation. Therefore, if recipients judge the feedback as fair, they would be expected to have a desire to respond to the feedback, which is analogous to an approach response. If they judge the feedback as unfair, they may develop an avoidance motivation and thus not want to respond to the feedback. Participants who judged their feedback as just were also more likely to experience high levels of PA and low levels of NA in comparison to participants who judged their feedback as unjust. This finding is consistent with the research by Colquitt et al. (2013), who reported that feedback recipients may experience PA if they believe that the feedback they received aligns with their efforts and NA if they believe the feedback to be unjust.

Hypothesis 10 and 11 were also supported. Participants with a high desire to respond to the feedback were more likely to set a high goal for Task 2 than participants with a lower desire to respond. This finding is consistent with the research on Ajzen's (1991) theory of planned behavior, which states that individuals develop attitudes toward certain behaviors and those attitudes affect their intentions to behave. Recipients' desires to respond are considered attitudes toward behaving in a manner that is responsive to feedback, and their goals are simply intentions to perform. Participants' Task 2 goals were positively related to their Task 2 performance. This finding provides additional support for goal setting theory, which has been supported by a number of studies (e.g., Dey & Kaur, 1965; Locke, 1968; Locke & Latham, 1990; Mento et al., 1987; Siegel & Fouraker, 1960).

### **Supported Paths**

Three pathways from feedback to Task 2 performance in the tested process model were significant ( $p < .05$ ). The first supported path suggests that when a worker received feedback that they have successfully reached a goal, they experience PA. Their PA results in their feeling that they want to respond to the feedback by setting a high goal for a future task. Those with high goals set for the future task tend to perform at a higher level compared to those with lower set goals.

The second significant path suggests that workers who receive accurate (compared to inaccurate) feedback tend to perceive the feedback to be high in accuracy. Because they perceive the feedback to be accurate, they in turn tend to believe that their feedback is just. Those who believe the feedback to be just experience higher levels of PA compared to those who perceive the feedback to be unjust. And those with high levels



of PA experience a greater desire to respond to the feedback which leads to them to set a higher goals for a future task and thus perform at a higher level (compared to those with a low desire to respond).

The third significant path details the linkages between feedback accuracy and performance. Workers who are provided with accurate feedback are more likely to believe the feedback to be accurate compared to those who receive inaccurate feedback. Those who believe the feedback to be accurate are more likely to judge the feedback as just (compared to those who perceive the feedback as inaccurate). And those who believe they have been given just feedback tend to have a greater desire to respond to the feedback and set higher goals for a future task. Their higher goals in turn affect their performance on that task.

### **Practical Implications**

This study provides many suggestions for managers regarding the approach for delivering employee feedback that results in the recipient experiencing PA, perceiving high levels of justice, and ultimately performing at a high level.

First, managers may want to focus on providing positive feedback rather than negative feedback. This study provides evidence that positive feedback enhances PA, which in turn enhances recipients' desire to respond, goal setting, and performance. The results of the present study suggests that negative feedback lowered PA, which decreased desire to respond and ultimately goal setting and performance; however, the findings also suggest that negative feedback enhanced NA, which positively influenced desire to respond. This brings up the question of whether negative feedback is ever beneficial and should be provided by managers. Because the path of negative feedback through NA and

on to desire to respond, goal setting, and performance was not significant, this suggests that negative feedback is not useful in encouraging motivation. Therefore, managers may want to avoid providing negative feedback unless the purpose of the feedback is to enhance a skill or ability and is provided as a learning opportunity. The boundary conditions concerning this finding and advice should be further explored.

Second, managers may want to spend time planning their feedback messages such that accuracy is emphasized. Providing inaccurate feedback can be detrimental to the recipients' fairness perceptions, motivation, and performance. This study provides evidence that feedback recipients are able to correctly judge the accuracy of feedback. When recipients perceive feedback as inaccurate, they are likely to experience a sense of injustice, which may lower their PA, desire to respond to the feedback, goals, and performance. Employees who receive nominal feedback are more likely to correctly judge the accuracy of the feedback; however, employees who receive relative feedback are more likely to judge the feedback as accurate regardless of the true accuracy of the feedback. Therefore, when giving nominal feedback, managers may want to be especially careful about delivering accurate information.

### **Contributions to the Literature**

This study adds several major contributions to the literature that clarify earlier mixed research findings and provide new findings. First, the model proposed in this study provides a comprehensive understanding of how performance feedback influences motivation. Second, this model clarifies inconsistent findings on the outcomes of feedback from past research (Ilgen et al., 1979; Ilies & Judge, 2005; Kinicki et al., 2004; Kluger & DeNisi, 1996; Landy et al., 1978) by examining the effects of feedback

valence, accuracy, and information type on recipient motivation. Third, this study provides new knowledge regarding cognitive reactions to performance feedback and how those reactions result in higher or lower motivation levels. Fourth, this dissertation provides a deeper understanding of the components of feedback that drive emotions and cognitive reactions. And finally, this dissertation examined moderators that clarify the circumstances under which feedback results in reactions that are beneficial versus detrimental to performance. Each of these contributions will be discussed in the paragraphs that follow.

This dissertation adds to the feedback and motivation literature by providing a more detailed understanding of the process through which feedback affects motivation and performance. Specifically, this dissertation provides evidence of how feedback valence and feedback accuracy affect goal setting and performance. This study's findings suggest that feedback valence may provoke affective reactions (e.g., PA), which in turn influence recipients' desire to respond to the feedback, goal setting behaviors, and ultimately performance. The findings also suggest that feedback accuracy may trigger cognitive reactions (e.g., perceptions of feedback accuracy, distributive justice perceptions), which in turn influence emotional reactions (e.g., PA), recipients' desire to respond, goal setting behavior, and performance. While the findings from the present investigation are intriguing, this model should be replicated prior to drawing firm conclusions regarding the relationships described.

Past research has found mixed effects of feedback on motivation (Ilies & Judge, 2005; Ilgen et al., 1979; Kinicki et al., 2004; Kluger & DeNisi, 1996; Landy et al., 1978). This study's findings suggest that feedback does have an effect on performance, and that

effect may be positive or negative depending on the valence, accuracy, and information type of the feedback. Research on the effects of PA and NA on motivation have also been mixed (Ilies & Judge, 2005; Venables & Fairclough, 2009). This study begins to clarify when and how feedback NA influences motivation and performance. This investigation found that negative feedback increased NA; however, NA did not harm motivation or performance. Surprisingly, NA was found to be positively related to desire to respond to the feedback, which could be a sign of stronger motivation. This is contrary to the research that suggests that NA harms motivation and performance (Ilies & Judge, 2005). According to Ilies and Judge, negative feedback was found to lessen perceptions of feedback accuracy; therefore, the benefit of providing negative feedback is questionable and should be further explored. Positive feedback was found to enhance PA, motivation, and performance. One implication of these findings is that managers may want to consider delivering more positive feedback than negative feedback to subordinates.

This study also provides new understanding regarding cognitive reactions to feedback, including how feedback might influence perceptions of feedback accuracy and distributive justice. Surprisingly, minimal research exists on the effects of feedback on recipients' perceptions of feedback accuracy and distributive justice. This dissertation provides evidence that the accuracy of feedback does affect how accurate the recipient views the feedback to be, as well as how fair they view the feedback to be considering the effort they put into the task. Also, this study provides new evidence that the type of information provided in the feedback has a direct effect on recipients' perceptions of feedback accuracy.

While the majority of previous studies on performance feedback have focused on feedback valence (Albright & Levy, 1995; Anderson & Rodin, 1989; Anshel, 1987; Chong & Park, 2013; Derryberry, 1991; Ilies et al., 2007; Nease et al., 1999; Tolli & Schmidt, 2008; Venables & Fairclough, 2009), this study incorporated two additional components of feedback: its accuracy and information type. Feedback accuracy and feedback type both influenced how accurate the recipients believed the feedback to be. Accurate feedback is, not surprisingly, a critical component of the feedback when trying to enhance feedback recipients' perceptions of feedback accuracy. However, providing relative feedback rather than nominal feedback may also enhance recipients' perceptions of its accuracy. The finding of the relationships between feedback type and perceptions of accuracy may be seen as a contribution to the literature and spur additional investigation into the reason why relative feedback may be viewed as more accurate than nominal feedback.

The mixed findings of past research on the effects of feedback (Kluger & DeNisi, 1996) suggest that there may be moderators that change the strength or direction of the feedback-motivation relationship. This study adds to the literature by providing information regarding the moderating effect of recipient motives/psychological state and FIT. This dissertation did not find evidence that recipient state of mind influenced how they reacted to feedback. However, it was discovered that feedback recipients who were in the telic state rather than paratelic state are more likely to experience PA while receiving feedback on whether they reached their set goal. This may be viewed as a contribution to the reversal theory literature. This study also found that FIT changed the strength of the relationship between feedback accuracy and perceptions of accuracy

which was stronger when FIT was nominal and weaker when FIT was relative. This study found that FIT directly influenced perceptions of feedback accuracy, such that relative FIT resulted in higher perceptions of feedback accuracy than nominal FIT. These two findings contribute to the literature on FIT.

In conclusion, this study contributes to the performance-feedback and motivation literature by providing a new process model explaining the impact of feedback on goal setting and performance. This study also contributes new information to the performance management literature regarding the relationships that feedback has with perceptions of feedback accuracy and distributive justice. This study further clarifies the components of feedback that drive motivational reactions, the reason for the inconsistent findings on the effects of feedback, and the role of moderators of affective and cognitive reactions to feedback.

### **Limitations**

While this study provided practical considerations and suggests new directions for the performance-feedback literature, there are several limitations that must be noted. First, data were gathered online from Amazon's Mechanical Turk workers. Some participants may have decided to speed through the study to receive \$1.00 without concern for the bonus pay. Participants were screened out if they inaccurately responded to any one of the several inattentive-responding-check items in the survey; however, they may have scanned the survey questions for whether a veracity check was embedded in it, answered those carefully, and then carelessly responded to the other questions.

The artificial work setting of this study may not generalize to true work settings and is an additional limitation of this study. While the current study was designed in an

attempt to mimic a real-world goal-setting situation, there are two characteristics of the study that do not reflect the majority of work situations. Most work tasks are not as clearly defined as the task in the current study. Participants were given a clear task of finding RGB codes online and a timed, minimal amount of time to do so. In the real world, tasks are usually somewhat ambiguous and must be completed in a time frame that is more flexible and generous than the three-minute time frame in the current study. Also, the time interval separating Goal 1 and Goal 2 in the present study was only several minutes. In the real world, goals may be set on a biannual or even annual basis; therefore, setting two goals within a 15-minute study is not realistic. These two limitations reduce the generalizability of the current findings.

Another limitation involves the varying computer-related skills of the participants. I did not control for participants' ability to conduct an online-search or use a computer. Participants entered this study with varying levels of the ability to conduct an online search at a quick pace. Those with a stronger ability to conduct an online search may have been able to gather more RGB codes than participants with a weaker ability to conduct an online search. As a result, technological abilities may have influenced performance. Regardless of a participant's motivation to excel at the task, if they had weak computer skills, their performance would likely have been low. This study should be replicated using tasks that do not involve technology to determine if it is generalizable to other types of work. It should also be replicated controlling for participants' computer and online-search skills.

A final concern in this study is whether some of the significant relationships found resulted from the large sample size. The significant effect sizes ranged from 0.08 to

0.80 in magnitude. Relationships for which significance was observed yet the effect sizes were small may have been the result of the large sample size. According to Cohen (1988) and Sawilowsky (2009), an effect size of 0.20 or below is considered small. Therefore, several of the significant relationships found in the present study are weak (e.g., NA and desire to respond; distributive justice and NA; goal setting and performance). The elements of the model that are both statistically significant and have a meaningful effect size include those of perceptions of feedback accuracy and distributive justice ( $\beta = 0.80$ ), Goal 1 and Goal 2 ( $\beta = 0.61$ ), Performance 1 and Performance 2 ( $\beta = 0.55$ ), feedback accuracy and perceptions of feedback accuracy ( $\beta = 0.49$ ), PA and desire to respond ( $\beta = 0.42$ ), distributive justice perceptions and desire to respond ( $\beta = 0.40$ ). All other relationships resulted in effects sizes less than 0.40.

### **Future Research**

As previously mentioned, the current study involved only one type of task that involved using an online search engine to find RGB codes which then had to be entered into a survey. To enhance the generalizability of the study, the method should be replicated with various types of tasks such as building a widget, writing a paper, or answering math problems.

Further research is needed to determine the impact of negative feedback on motivation. This study found that negative feedback enhanced NA, and that NA enhanced desire to respond. However, this study also found that negative feedback lowered recipients' perceptions of feedback accuracy. Further research on how to deliver negative feedback in a way that does not threaten perceived accuracy could provide additional insights into how to enhance perceptions of feedback accuracy. The current findings



suggest that accurate feedback compared to inaccurate feedback and relative feedback compared to nominal feedback enhance perceptions of feedback accuracy. A follow-up study could be conducted to determine whether negative feedback that is accurate and relative results in heightened NA and perceptions of feedback accuracy compared to negative feedback that is accurate and nominal, inaccurate and relative, or inaccurate and nominal.

This study yielded an unexpected finding on the relationship between feedback type and perceptions of feedback accuracy. There was no hypothesized direct relationship between feedback type and perceptions of feedback accuracy; however, a significant relationship emerged indicating that recipients of relative feedback are more likely to believe the feedback is accurate than recipients of nominal feedback. In the current study, recipients of relative feedback had no way of determining how other participants performed, therefore they had no evidence as to whether their goal was achieved. Recipients of nominal feedback had some knowledge about the number of RGB codes they found through the online search and entered into the survey, therefore they had strong evidence of their performance level. Many of these recipients seemed to realize when their feedback was inaccurate, whereas many of the recipients of relative feedback may have simply trusted that the feedback was accurate, since they had no evidence to the contrary. More research is needed to determine if relative feedback is indeed judged as more accurate than nominal feedback and, if so, why.

This study yielded a second unexpected finding of the relationship between state and PA. It was discovered that participants in the telic state were more likely to experience higher levels of PA than recipients in the paratelic state. The state-situation

match must be considered when interpreting this result. Participants were asked to complete the survey questions on their state of mind and affect immediately after receiving feedback on whether they reached a goal. According to reversal theory (Apter, 2005), those in the telic state are motivated to reach a goal while those in the paratelic are wanting to simply enjoy the moment. Participants in the telic state may have been more likely to experience higher PA because they were in a goal-oriented situation, while paratelic participants were more likely to experience lower PA because they were not in a situation in which they could focus on enjoying the moment. In other words, those in the telic state experienced a state-situation match, whereas those in the paratelic state experienced a state-situation mismatch. Further research should be done to determine the relationship between state and PA across different types of situations. For instance, paratelic individuals may experience higher PA when they are chatting with coworkers about their fun weekend plans while telic individuals may experience lower PA in that situation. Research examining whether employees working towards reaching goals are happier (and more satisfied) with their jobs if they are in the telic rather than paratelic state at work would be an interesting extension of the present study.

The present study examined reactions to feedback messages that were either entirely positive (indicating success at reaching a goal) or entirely negative (indicating failure to reach a goal). Reactions to mixed-valence feedback (messages that contain positive and negative feedback) and the effects of the order of feedback valence in a mixed message were not studied. The order of feedback valence in a mixed-valence message has been studied previously and shown to have an impact on reactions to feedback and subsequent performance (Henley & Reed, 2015; Parkes, Abercrombie, &

McCarty, 2013; Stockton & Morran, 1981). Stockton and Morran (1981) found that negative feedback resulted in significantly higher acceptance when it was received following three to five sessions of positive feedback compared to following only one or two sessions of positive feedback. Acceptance of negative feedback was highest when it was preceded by positive feedback. Relationships in the current model should be tested with the incorporation of multiple feedback messages mixed in valence. For instance, what are recipients' cognitive and affective reactions to negative feedback when they have previously received three positive feedback messages? It may be the case that a certain amount of negative feedback can be motivating as long as it is given alongside positive feedback. Henley and Reed (2015) examined the order of feedback valence in a mixed-valence message and found the greatest positive impact on performance when negative feedback followed two positive feedback statements. A meaningful extension of their work would be to explore whether there is an optimal proportion of mixed valences in a feedback message. For example, how do recipients react to feedback that is 75% positive and 25% negative versus 50% positive and 50% negative? Recipients' affective and cognitive reactions to mixed-valence feedback messages with different proportions of positive and negative feedback and in various orders is an area in need of further exploration.

### **Concluding Thoughts**

This study sought to provide evidence regarding six research questions. First, this study was conducted to examine whether an employee in a certain psychological state responds to feedback differently than those in other states. The results suggest that the psychological state of employees does not influence their reactions to performance

feedback; however, employees in the telic state may experience higher PA while receiving feedback about performance on a goal-related task than employees in the paratelic state. Second, this study was conducted to examine the relationship between feedback valence and employee motivation. It was found that positive feedback enhances not only PA but also the desire to respond to the feedback, goal setting, and performance. The effects of negative feedback on motivation were less clear. Negative feedback enhanced NA, and NA enhanced the desire to respond to the feedback, which suggests a positive indirect effect of negative feedback on motivation. However, negative feedback also resulted in lowered PA and perceptions of feedback accuracy, which suggests a detrimental effect on motivation. Third, this study investigated the importance of providing accurate feedback by examining the relationship between feedback accuracy and recipient motivation. Specifically, the findings suggest that feedback accuracy significantly influences perceptions of feedback accuracy, which in turn influences distributive justice perceptions, PA, motivation, and performance. Fourth, this dissertation provided information as to whether the type of information in a feedback message affects recipients' perceptions of feedback accuracy. While the relationship between feedback accuracy and perceptions of feedback accuracy strengthened for recipients of nominal feedback and weakened for recipients of relative feedback, recipients of relative feedback rather than nominal feedback were more likely to perceive the feedback as accurate regardless of the actual accuracy of the feedback. Fifth, the findings examined how perceptions of organizational justice and accuracy are influenced following feedback and how these perceptions further affect motivation. Specifically, the findings suggest that the accuracy of the feedback directly influences perceptions of

feedback accuracy, which shapes organizational-justice perceptions. Organizational justice perceptions were significantly and positively related to PA, motivation, and performance. Finally, this study was conducted to provide direction on whether employee performance may be improved by manipulating certain characteristics and consequences of feedback. While further evidence is certainly needed before firm conclusions may be drawn, current results suggest that managers who provide accurate and positive feedback may expect an enhancement in performance, and managers who provide negative feedback may not witness the desired increase in motivation and performance levels.

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## **APPENDIX A**

### **HUMAN USE APPROVAL LETTER**

## MEMORANDUM

TO: Ms. Ann-Marie Rabalais and Dr. Mitzi Desselles

FROM: Dr. Stan Napper, Vice President of Research & Development

SUBJECT: Human Use Committee Review

DATE: April 28, 2017

RE: Approved Revision of Study HUC 1327 (Old Number)

TITLE: **“An Online Information-Gathering Project”**

**HUC 17-085**  
**REVISION**

The above referenced study has been approved as of April 25, 2017 as a continuation of the original study that received approval on September 14, 2015. **This project will need to receive a continuation review by the IRB if the project, including collecting or analyzing data, continues beyond April 25, 2018.** Any discrepancies in procedure or changes that have been made including approved changes should be noted in the review application. Projects involving NIH funds require annual education training to be documented. For more information regarding this, contact the Office of University Research.

You are requested to maintain written records of your procedures, data collected, and subjects involved. These records will need to be available upon request during the conduct of the study and retained by the university for three years after the conclusion of the study. If changes occur in recruiting of subjects, informed consent process or in your research protocol, or if unanticipated problems should arise it is the Researchers responsibility to notify the Office of Research or IRB in writing. The project should be discontinued until modifications can be reviewed and approved.

If you have any questions, please contact Dr. Mary Livingston at 257-5066.

## **APPENDIX B**

### **COMMUNICATION TO PARTICIPANTS**

## COMMUNICATION TO PARTICIPANTS

### Communication Posted on Amazon's Mechanical Turk

*You are invited to participate in a project to help build a website that will provide information about various universities for incoming college students. Your participation will involve gathering RGB codes of universities' primary colors by conducting online searches. RGB codes are numbers that represent the specific combination of red, green, and blue used to construct any color. You will also be asked several questions about your experience with this project. Those who complete the tasks and survey will be paid a base rate of \$1.00 and up to an additional \$0.60 depending on the number of RGB codes accurately gathered. The amount of time spent on the RGB code-gathering task is limited to two trials of three minutes each. This entire project is expected to take approximately 13 minutes to complete. Please click on the survey link below to participate in this project. Thank you.*

### Communication Displayed After Clicking Survey Link

*Thank you in advance for your participation in this project. Your participation is important because the information you provide will help us to build a website that potential college students will use. As a participant, you will complete six parts of this study:*

- 1) Carefully read the instructions on how to complete the tasks involved in this project, and participate in a practice task.*
- 2) Set a goal for your performance on the first task.*
- 3) Complete a 3-minute timed task.*
- 4) Fill out a short survey on your experience with the task.*
- 5) Set a goal for your performance on the second task.*
- 6) Complete the second 3-minute task.*

*You will be allowed to work on each of the two tasks (Part 3 & Part 4) for only three minutes each.*

*You will NOT be paid for your participation unless you complete all six parts of the project. Also, item-checks for inattentive responding have been placed throughout this survey. Anyone who fails an item-check will be immediately exited from the project without payment.*

*If you have any questions, please email [ar2636@gmail.com](mailto:ar2636@gmail.com). Thank you.*

## Communication at the Beginning of the Survey

*Please complete the following survey to share your experience with this project.*

### Paratelic and Telic State

Choose which of the following clusters of phrases reflects what you wanted **immediately after you received feedback** on your performance.

- Accomplish something for the future  
Do something serious  
  
Do something crucial
- Enjoy myself at the moment  
Do something playful  
  
Do something of no great concern

### PANAS

This scale consists of a number of words that describe different feelings and emotions. Read each item and then choose the appropriate response option for each word. Indicate to what extent you felt each of the following emotions **immediately after you received feedback**. Use the following scale to record your answers. (Scale is 1 = very slightly/not at all, 2 = a little, 3 = moderately, 4 = quite a bit, 5 = extremely)

- Interested
- Distressed
- Excited
- Upset
- Strong
- Guilty
- Scared
- Hostile
- Enthusiastic
- Proud
- Irritable
- Alert
- Ashamed
- Inspired
- Nervous
- Determined
- Attentive
- Jittery
- Active
- Afraid

### Perceptions of Feedback Accuracy

(1-5 point agreement scale, 1 = strongly disagree, 5 = strongly agree)

1. The information provided in the performance feedback message was accurate.
2. My performance record as it was introduced in the feedback message contains no errors.
3. My performance was fairly analyzed.
4. I feel that my feedback was inaccurate.
5. The performance feedback I received in my performance feedback message is an accurate assessment or portrayal of my performance.

### Distributive Justice

(1-5 point agreement scale, 1 = strongly disagree, 5 = strongly agree)

1. Does your feedback reflect the effort you have put into your work?
2. Is your feedback appropriate for the work you have completed?
3. Does your feedback reflect what you have contributed?
4. Is your feedback justified, given your performance?

### Desire to Respond

(1-5 point agreement scale, 1 = strongly disagree, 5 = strongly agree)

1. After reading the feedback, I am looking forward to improving on the next trial.
2. I think that the feedback I received will help me to do better next time.
3. After seeing my feedback, I have some ideas about how to improve.
4. I have no intention of using the feedback to guide my performance on the next task. (R)

### Demographic Questions

1. What is your ethnicity?
2. What is your age?
3. What is your gender?
4. What level of education have you completed (1 = middle school; 2 = high school; 3 = 2-year degree; 4 = Bachelor's degree or equivalent; 5 = Master's or equivalent; 6 = Ph.D. or equivalent)?
5. What is your current occupation?
6. How many years have you worked at your current primary place of employment?
7. How many years of work experience do you have?