THE DYNAMICS OF STATE GOAL ORIENTATIONS: EXAMINING THE ROLES OF AFFECT AND PERFORMANCE EVALUATIONS

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ABSTRACT

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The current study examined the extent to which individuals' state goal orientations change over time, particularly in response to receiving positive or negative performance feedback. A process model including individuals' performance evaluations, affective reactions, and self-efficacy was proposed and tested. In addition, the current study examined potential antecedents to individuals' initial state goal orientations (i.e., when they first encounter a situation). These antecedents included trait goal orientations, situational influences (a goal orientation manipulation), and pre-task self-efficacy. Subjects engaged in a 5-cue Multiple Cue Probability Learning task resembling the stock market. Results provided mixed support for the proposed process model of state goal orientations. Theory and implications are discussed.

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INTRODUCTION

The goals that individuals set for themselves or strive to achieve can have substantial effects on individuals' current and future performance on a task. These effects can express themselves in the extent to which individuals persist in the face of failure and learn from their mistakes or become discouraged by failure and withdraw from the task. Researchers have examined these patterns of effects in education, sport, and work settings, and their results have become the foundations of goal orientation theory.

Recent research has conceptualized goal orientations as three separate factors: mastery, performance-prove (prove), and performance-avoid (avoid). Specifically, mastery goal orientation refers to "the desire to develop the self by acquiring new skills, mastering new situations, and improving one's competence" (VandeWalle, 1997, p. 1000). Further, prove goal orientation refers to "the desire to prove one's competence and to gain favorable judgments about it" (VandeWalle, 1997, p. 1000). Finally, avoid goal orientation refers to "the desire to avoid the disproving of one's competence and to avoid negative judgments about it" (VandeWalle, 1997, p. 1000).

Indeed, one could argue that goal orientation theory is based on a renewed interest in achievement motivation, and it has several implications for the workplace. For example, research has shown that individuals' goal orientations influence the tasks that they choose to engage in. Elliott and Dweck (1988) found that high levels of mastery goal orientation were associated with individuals seeking out challenging tasks from which they could learn new skills. High levels of performance goal orientations (prove

and avoid), on the other hand, were associated with individuals seeking out less challenging tasks (Elliott & Dweck, 1988).

Further, individuals' goal orientations have implications for their reactions to negative feedback. For example, individuals with high levels of mastery goal orientation and low levels of performance goal orientations (prove and avoid) tend to interpret negative feedback in a task-oriented manner, using the feedback to help improve their performance in the future (Kluger & DeNisi, 1996). In contrast, individuals with high levels of performance goal orientations (prove and avoid) and low levels of mastery goal orientation tend to interpret feedback as a self-directed criticism (Kluger & DeNisi, 1996).

Finally, goal orientations appear to have implications for individuals' cognitive engagement in tasks. Specifically, Greene and Miller (1996) and Meece, Blumenfield, and Hoyle (1988) note that high levels of mastery goal orientation are associated with deeper, more meaningful processing of task information. In contrast, these researchers note that high levels of performance goal orientation (prove and avoid) are associated with shallow, more superficial processing of task information.

Thus, the goal orientations that individuals possess have implications for a variety of work- and achievement-related situations. In general, the discussion thus far has suggested that a high level of mastery goal orientation is superior in all situations. However, this is not necessarily the case. For example, individuals working in environments where mistakes are disastrous (e.g., a nuclear submarine) must always strive to perform well and avoid mistakes at all costs. Therefore, one must consider the situation when evaluating which goal orientations are most 'important.'

Factors leading to the extent to which individuals are motivated by each of the aforementioned goal orientations have been discussed in terms of trait goal orientations and state goal orientations. The former refers to an individual's tendency to adopt mastery-, prove-, or avoid-oriented goals on average. In contrast, state goal orientations refer to the extent to which the goals that an individual adopts in a specific situation are mastery-, prove-, or avoid-oriented in nature. Further, theorists recognize the influence of trait goal orientations on state goal orientations, but they also recognize the importance of situational influences such as task instructions and the task environment.

Researchers who have examined state goal orientations, however, have rarely considered the potential influences of other individual differences besides trait goal orientations. For instance, individual's who have higher levels of openness to experience may be more adaptable to the situation compared to individuals with lower levels of this construct—i.e., they may be more likely to adopt levels of state goal orientations that are inconsistent with their trait goal orientations. Fisher (1998) examined the interaction between an individual's trait mastery goal orientation and his/her interest on a task in the prediction of his/her level of state mastery goal orientation, but even this attempt did not consider the potential effects of other individual differences. (Further, the conceptualization of goal orientation in Fisher's work did not distinguish performance-prove from performance-avoid.)

The ability to predict and successfully manipulate individual's state goal orientations is advantageous in both training and performance settings. For example, the coach of a baseball team may wish to elicit a strong mastery goal orientation while individuals undergo training—he/she is likely to want the players to learn the game well

and master all of the necessary skills. However, the coach may then wish to elicit a strong prove goal orientation during a game—the players need to do well and win the game. As one would expect, the same principles could apply to many other situations and jobs as well. Thus, being able to identify the factors leading to individuals' state goal orientations is desirable in various settings, and current research provides only a partial explanation of this phenomenon.

After an individual's initial state goal orientations are determined, an important question arises: What happens to state goal orientations over time? Once an individual's state goal orientations are determined for a given situation, will he/she maintain those state goal orientations over time, or will his/her trait goal orientations influence subsequent state goal orientations (specifically, after receiving negative feedback)? If the effects of trait goal orientations continue to influence state goal orientations over time, this suggests that managers can not simply train their employees to adopt particular state goal orientations, but that they should take into consideration individuals' trait goal orientations during the selection process.

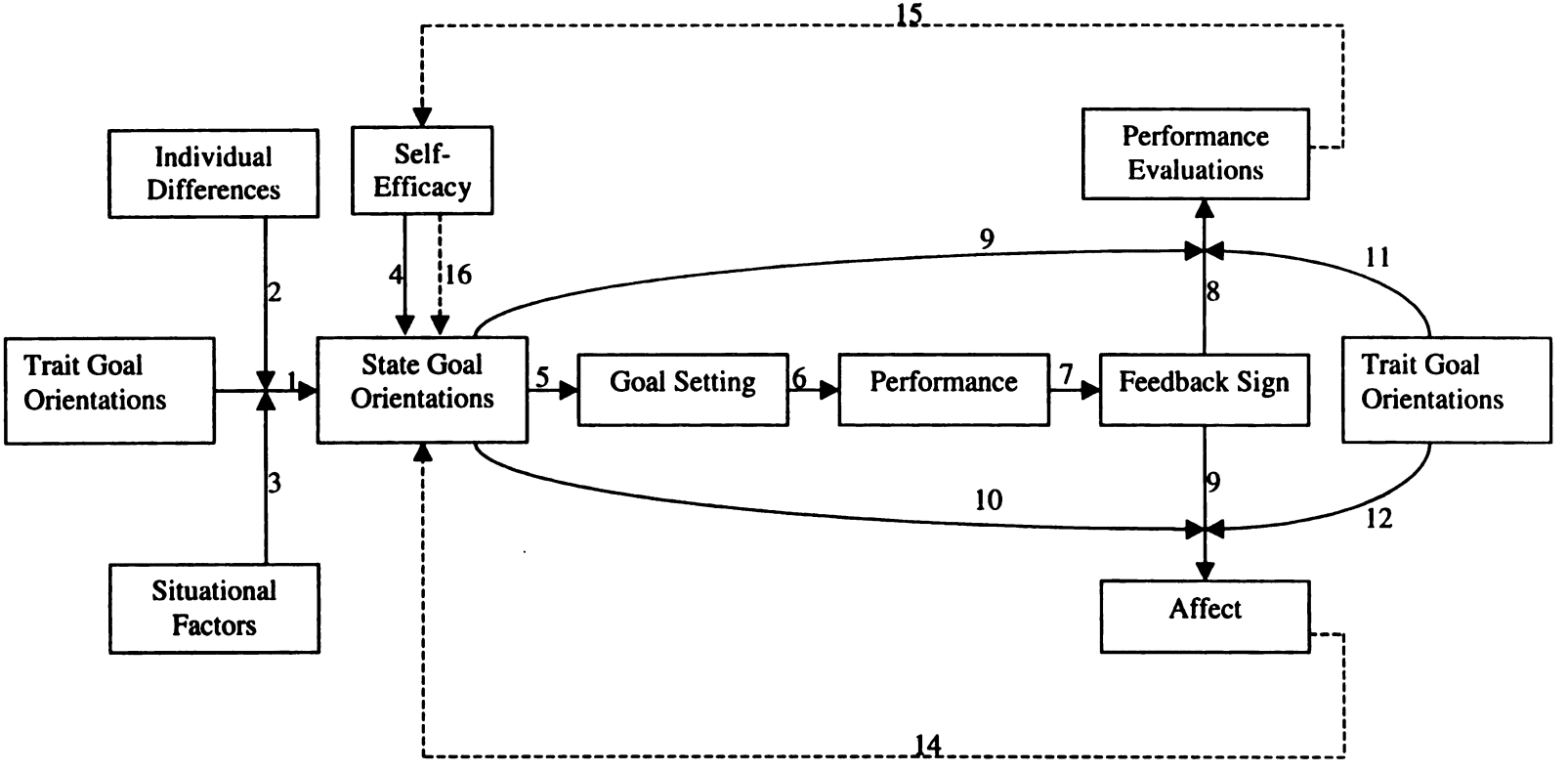
Again, past research offers little explanation in terms of the dynamic processes related to state goal orientations. Fisher (1998) provides a process model of goal orientations over time, but this model is not sufficient. While her model does provide insight into the dynamic aspect of state goal orientations as a function of performance feedback, it does not explain *how* feedback influences state goal orientations. In order to understand fully the dynamics of state goal orientations, we must understand the processes involved.

Figure 1 presents the conceptual model upon which this thesis is based. The model, proposes that initial state goal orientations are influenced by self-efficacy as well as interactions between trait goal orientations and situational factors and between trait goal orientations and a variety of individual differences. These state goal orientations then lead to individuals' goal setting and subsequent performance. Based on performance, individuals receive either positive or negative feedback, which interacts with both state goal orientations and trait goal orientations in the prediction of individuals' performance evaluations and affect. In addition, there is a proposed temporal relationship between performance evaluations and affect; specifically, evaluations precede affect. These performance evaluations and affect then influence subsequent state goal orientations (the link between performance evaluations and subsequent state goal orientations is mediated by self-efficacy), and the cycle repeats itself.

In the sections that follow, each of the components in the conceptual model (see Figure 1) is discussed, relevant literature is summarized, theoretical and rational arguments are presented, and an operational model and list of testable hypotheses are proposed. Before the specific elements in the model can be addressed, however, a more in-depth review of the history behind the goal orientation construct is in order.

Goal Orientation

Early work by Dweck and Reppucci (1973) documented the existence of two patterns of reactions and subsequent performance that competent individuals typically exhibit after repeated failure. They observed that individuals who displayed the largest performance decrements were those who assumed the least responsibility for their



Note: The dotted lines represent the cyclical nature of the model. Path numbers are referred to in text.

Figure 1. *Conceptual model*

performance and, when they did accept responsibility for their performance, tended to attribute both success and failure to ability rather than effort. That is, these individuals consistently attributed success to high ability and failure to lack of ability—something that is not under their immediate control. Thus, after repeated failure, these individuals gave up because they believed that there was nothing that they could do to succeed. In essence, these individuals exhibited symptoms of learned helplessness—the passive, withdrawn behavior that an individual displays after being exposed to seemingly unavoidable aversive events (Seligman, 1975). In contrast, individuals who persisted in the face of failure and who displayed the least performance decrements were those who consistently attributed their performance to effort expenditure. That is, they had a consistent, trait-like belief that success was the result of much effort and that failure was the result of too little effort, and they behaved accordingly.

In a follow-up study, Dweck (1975) examined the effects of an attribution retraining program on individuals' subsequent performance following repeated failure. The retraining program taught "helpless" children (i.e., individuals who consistently show symptoms of withdrawal following failure) to take responsibility for their performance and to attribute their performance to effort expenditure rather than underlying ability. These individuals were compared to a second group of "helpless" children who were not subjected to the attribution retraining program. Instead, they were presented with a series of trials during which they received success feedback (based on the notion that success feedback would increase their perceived competence, thus increasing their performance). Whereas individuals in the latter group demonstrated continued performance decrements following the success-only trials, individuals who

received the attribution retraining maintained or improved their performance. Thus, Dweck (1975) provides support for Dweck and Reppucci's (1973) conclusion that individuals can make different attributions for their performance and that these differences lead to potentially different performance outcomes.

In addition, Dweck (1975) provides support for the distinction between state and trait goal orientations. Individuals who did not receive the attribution retraining exhibited motivation and performance consistent with their dispositional, helpless tendencies. In contrast, individuals who received the attribution retraining exhibited motivation and performance consistent with the retraining. Thus, the motivation and performance that these individuals actually exhibited (i.e., state) was or was not consistent with their dispositional tendencies (i.e., trait), depending on the presence/absence or situational influences. (This study also provides evidence of situational influences on goal orientations and the ability to manipulate goal orientations, both of which are discussed in later sections.)

Later work by Diener and Dweck (1978, 1980) provides support for earlier findings (i.e., Dweck, 1975; Dweck & Reppucci, 1973) that some individuals adopt a helpless response pattern following failure whereas other individuals adopt more of an improvement-focused attitude. In fact, Diener and Dweck (1978, 1980) referred to the former group as "helpless" (maintaining the label from previous work by Dweck (1975) and Dweck and Reppucci (1973) and the latter group as "mastery-oriented." Also of importance, Diener and Dweck (1980) observed differences between these individuals in the extent to which they viewed success as predictive of future success. Specifically, helpless individuals do not believe that current success will lead to future success

whereas the opposite is true for mastery-oriented individuals. Essentially, helpless individuals view their success as "less successful" compared to mastery-oriented individuals (Diener & Dweck, 1980).

Independent from Dweck and her colleagues, Nicholls developed a theory of motivation that closely resembles the findings and conclusions of Dweck's research. Nicholls (1979, 1983, 1984) distinguished self-evaluation reflecting ego-involvement from self-evaluation reflecting task-involvement. Ego-involvement, according to Nicholls (1984), refers to an individual's desire to demonstrate his/her ability to others and avoid appearing incompetent, whereas task-involvement refers to the extent to which an individual regards personal mastery as more important than the demonstration of ability. Individuals in the former group tend not to persist in the face of failure, for others could interpret it as a sign of incompetence; instead, they tend to withdraw from the task. Individuals in the latter group, in contrast, persist in the face of difficulty and maintain personal mastery as their primary goal.

In a 1986 review of the motivation literature, Dweck (1986) notes the convergence of ideas between her work and the work of Nicholls as discussed above. She uses the term *goal orientation* to describe the general patterns of goals that individuals adopt. Specifically, Dweck (1986) describes a learning (mastery) goal orientation as one that leads an individual to adopt learning (mastery) goals—the individual seeks to increase his/her competence by understanding and mastering something new. In contrast, a performance goal orientation is described as one that leads an individual to adopt performance goals—the individual seeks to gain positive judgments and avoid negative judgments regarding his/her competence (Dweck, 1986).

Similar to Dweck (1986), Ames and Archer (1988) and Harackiewicz and Elliot (1993) note the striking similarities between the findings and conclusions of the different researchers discussed thus far. In addition to the researchers already mentioned, Dweck and Leggett (1988) discuss learning and performance goals; Koestner, Zuckerman, and Koestner (1987), Ryan (1982), and Sansone (1986) distinguish task-involvement from ego-involvement; and Ames (1984) and Butler (1992) contrast mastery and ability goals. As Ames and Archer (1988) note, these researchers have simply attached their own labels to well-known constructs: mastery and performance goal orientations.

Dimensionality of goal orientations. To this point, no explicit mention has been made regarding the dimensionality of goal orientation. Initial research (e.g., Dweck, 1986; Nicholls, 1984) conceptualized goal orientation as a unidimensional construct with mastery goal orientation and performance goal orientation as the endpoints. Under this conceptualization, then, an individual is thought of as being *either* mastery-oriented *or* performance-oriented. If this were true, one would expect the correlation between trait measures of mastery and performance goal orientations to be highly negative— -1.0, ideally. Research does not support this supposition, however. Instead, moderately low correlations between these two goal orientations are often observed. For instance, Duda and Nicholls (1992) observed correlations ranging from -.32 to .21 between mastery and performance goal orientations in a sample of high school students; and Hofmann and Strickland (1995) and Phillips and Gully (1997) observed correlations of .27 and -.10 (respectively) between these two goal orientations among samples of college students.

These low correlations between individuals' mastery and performance goal orientations suggest that the two goal orientations actually lie on two separate continuums

rather than a single continuum. Rather than an individual being *just* mastery-oriented or *just* performance-orientated, then, individuals can actually possess varying degrees or *each* goal orientation. Thus, while it is still possible for an individual to be *just* mastery-oriented (i.e., very high mastery goal orientation and very low performance goal orientation) or *just* performance-oriented (i.e., very high performance goal orientation and very low mastery goal orientation), he/she may have less extreme levels of *both* goal orientations. For instance, an individual may have a moderate level of mastery goal orientation and a slightly higher level of performance goal orientation—or he/she may be very high on both goal orientations.

Based on the argument presented above, it is generally inaccurate to refer to individuals as "mastery-oriented" or "performance-oriented" as so many researchers have done in the past. Hofmann and Strickland (1995) note that the reason why researchers have become accustomed to referring to individuals in such a way is due in large part to the fact that most studies examining goal orientations have been experimental studies where mastery and performance goal orientations are manipulated one at a time. (The ability to manipulate individuals' goal orientations is discussed in a later section.)

Two factors or three? Thus far, it has been established that the goal orientation construct consists of two factors (i.e., mastery and performance) which are orthogonal to each other. Recent researchers (e.g., Elliot, 1999; Elliot & Harackiewicz, 1996; Middleton & Midgley, 1997; Midgley et al., 1998; VandeWalle, 1997), however, have argued that the current conceptualization of goal orientation is inadequate. They argue that a third kind of goal orientation must be considered in order to understand and predict more accurately individuals' motivation and performance. Specifically, they contend that

performance goal orientation should be broken down into performance-prove and performance-avoid.

As noted above, Nicholls' (1984) initial conceptualization of ego involvement—the conceptual equivalent of performance goal orientation—included the individual's desire to demonstrate his/her ability to others as well as avoid appearing incompetent. Similarly, Dweck's (1986) initial conceptualization of performance goal orientation included his/her desire to seek judgments of competence from others as well as avoid judgments of incompetence from others. Indeed, this distinction between approach (i.e., prove) motivation and avoid motivation dates back well before the days of Nicholls and Dweck. In fact, Elliot (1999) traces this distinction back to the ancient Greek philosophers Democritus (460-370 B.C.), Aristippus (430-360 B.C.), and Epicurus (342-270 B.C.), who talked of man's hedonistic pursuit of pleasure and avoidance of pain.

Parallel Theories to Goal Orientations

Self-discrepancy theory. Higgins and his associates (Higgins, 1987; Higgins, Bond, Klein, & Strauman, 1986) proposed a self-regulatory model of goal-directed behavior that parallels the theory and findings of goal orientations research. Specifically, Higgins argues that individuals' goal-directed behaviors are motivated by one of two discrepancies. The first discrepancy is between an individual's perceived actual self and his/her ideal self, and the second discrepancy is between an individual's perceived actual self and his/her ought self.

According to Higgins, an ideal self is a desired self to which an individual aspires. For example, an individual may aspire to be known as a caring and generous person. Achieving this ideal self means that a desired reward (e.g., personal satisfaction) has been

attained. An ought self is a duty- or obligation-based self—an individual may feel that it is his/her social obligation to donate 15% of his/her income to charity each year. Fulfilling the desires of the ought self means that an undesired punishment (e.g., societal disapproval) has been avoided. Finally, actual self refers to an individual's analysis of his/her current behavior and attitudes. For example, an individual may realize that he/she currently donates less than one percent of his/her annual income to charity.

Thus, according to Higgins' theory and the example above, an individual who is motivated by ideal-actual discrepancies will recognize that he/she currently gives less than one percent of his/her annual income to charity and that this is inconsistent with his/her desire to be a caring and generous person. This individual will be motivated to give more money to charity. In contrast, an individual who is motivated by ought-actual discrepancies will recognize that he/she currently donates less than one percent of his/her annual income to charity and that this is 'unacceptable' according to social standard. This individual will also be motivated to give more money to charity. Thus, although the outcome for these two individuals is the same (i.e., both are motivated to donate more money to charity), the motivational processes by which this outcome occurs differ drastically.

Recall the definitions for mastery, prove, and avoid goal orientations. An individual with a high level of avoid goal orientation is motivated to avoid the demonstration of some negatively valenced outcome (i.e., the demonstration of lack of ability). Based on the discussion above, such an individual is similar to someone who is motivated by ought-actual discrepancies. Individuals with high levels of mastery and prove goal orientations are motivated to achieve some positively valenced outcome (i.e.,

mastery of the current task or the demonstration of ability, respectively). Thus, such individuals are similar to someone who is motivated by ideal-actual comparisons.

Control theory. Influenced by Higgins (1987; Higgins et al., 1986), Carver and his associates (Carver, Lawrence, & Scheier, 1996; Carver & Scheier, 1995) recently proposed a self-regulatory model whereby the goal-directed behaviors in which individuals engage fall into one of two categories: discrepancy enlarging loop and discrepancy reducing loop. A discrepancy enlarging loop—or positive feedback loop—has as its focus some undesired end-state away from which an individual wants to move (Carver & Scheier, 1995). That is, the individual is motivated to move away from some negatively valenced reference point. Moreover, a discrepancy reducing loop—or negative feedback loop—has as its focus some desired end-state toward which an individual wants to move (Carver & Scheier, 1995). That is, the individual is motivated to work toward some positively valenced reference point.

The motivation and thought processes that differentiate individuals engaging in each of these two behavioral groups parallels fairly well with the discussion of goal orientation theory as well as Higgins' (1987; Higgins et al., 1986) self-discrepancy theory. Recall from above, avoid goal orientation is associated with the desire to avoid the demonstration of lack of ability. Thus, the reference point for this orientation is the demonstration of lack of ability, and it has a negative valence associated with it. Hence, individuals who engage in discrepancy enlarging loops are similar to individuals with high levels of avoid goal orientations. These individuals are also similar to those who are motivated by actual-ought self-discrepancies.

As noted above, mastery goal orientation is associated with the desire to learn and master the task at hand. Thus, the reference point for this orientation is the learning and mastery of some task, and it has a positive valence associated with it. Similarly, prove goal orientation is associated with the desire to demonstrate one's competence to others. The reference point for this orientation is the demonstration of one's competence to others, and it too has a positive valence associated with it. Hence, individuals who engage in discrepancy reducing loops are similar to individuals with high levels of prove and mastery goal orientations. These individuals are also similar to those who are motivated by actual-ideal self-discrepancies.

State vs. Trait

As discussed by Mischel and Shoda (1995), a long-standing tradition in the field of psychology has been to conceptualize individual differences as traits—behavioral dispositions that lead individuals to behave similarly across situations. Based on this conceptualization, one would expect an individual with a high level of a particular personality trait to behave in a manner consistent with that trait across situations. Further, any deviation from this *average behavior* (i.e., trait) is viewed as unwanted or uninformative variance—error variance (Mischel & Shoda, 1995). However, as Mischel and Shoda (1995) argue, it is very informative when an individual behaves *differently* than he/she would normally behave—it provides evidence of a person by situation interaction.

Mischel and Shoda (1995) do not necessarily discount the relevance of traits; instead, they view personality as a rational system consisting of *if-then* scenarios. For example, *if* a particular individual who normally behaves in an outgoing manner (i.e.,

extraversion) attends a party where he knows everyone, *then* he will behave in a very outgoing manner. However, *if* this individual attends a party where he knows no one, *then* he will remain relatively quiet. Such behavioral inconsistencies have led some (e.g., Block, 1995) to argue that personality theorists need to focus on understanding intra-individual behavior before inter-individual behavior can be understood.

Arguments presented by Mischel and Shoda (1995) and Block (1995) support the conceptualization of personality in terms of traits and states. Specifically, a state can be defined as an individual's behavior or level of a personality characteristic in a specific situation at a particular moment in time, whereas a trait can be defined as an individual's average behavior or level of a personality characteristic. Thus, the current study adopts of the conceptualization of traits as aggregates of states.

In order for traits to be aggregates of states, there must be some pattern or consistency of behavior, but what leads to this consistency? That is, individuals behave in relatively consistent manners across time and situations (otherwise, we would have no reason for even entertaining the idea of, for example, the Big Five personality variables), but something must lead to this behavioral consistency.

Many theorists have argued that individuals have underlying needs and desires, and these needs and desires influence their behavior. For example, Murray (1951) argues that individuals have manifest needs that lead them to behave in certain ways that satisfy those needs. Higgins (1987; Higgins et al., 1986) argues that individuals have ideal selves toward which they aspire. As such, individuals are motivated to behave in ways that are consistent with their idealized self. Festinger (1957) argues for a need for individuals to maintain consistency between their thoughts and behaviors. The list

continues, but all of these examples illustrate the notion that individuals have underlying needs and desires, and these needs and desires lead individuals to behave in fairly consistent ways across situations and time.

Person by situation interaction. Despite the simplicity of the previous paragraph, however, individuals do not always behave consistently. The premise of a person by situation interaction is that an individual's behavior at a specific moment in time is a product of his/her trait-like predispositions (i.e., needs, desires, etc.) and situational influences. Specifically, individuals behave similarly in situations that they perceive to be similar; in contrast, situations that are perceived to be different may elicit different personality characteristics (Flavell, 1985; Mischel & Shoda, 1995; Pervin, 1989), leading individuals to behave differently. There are differing perspectives, however, regarding the role of the situation. One perspective is that individuals actively seek out certain situations rather than others (Mischel & Shoda, 1995; Pervin, 1989). An alternative perspective views the individual's behavior as more reactionary compared to the aforementioned, proactive perspective. According to this perspective, individuals passively react to and respond to the situations that they encounter rather than actively seek out certain situations (Mischel & Shoda, 1995; Pervin, 1989). Although both of these perspectives have merit, the current study adopted the latter. By adopting the latter perspective, this study cannot address questions related to the situations in which different individuals choose to participate. Such questions must be addressed in a study that allows individuals to choose their situations.

State and trait goal orientation. Similar to extraversion and other individual difference variables, goal orientations can also be analyzed in terms of state and trait

behaviors. Researchers can examine individuals' state goal orientations (i.e., levels of goal orientations that individuals assume in specific situations) as well as their trait goal orientations (i.e., levels of goal orientations that individuals assume *on average*, across time and situations). For the current study, the following definitions of state and trait goal orientations were adopted:

State mastery goal orientation: In a given situation at a particular moment in time, the extent to which one focuses his/her attention on developing him/herself by acquiring new skills, mastering new situations, and improving his/her competence.

Trait mastery goal orientation: The tendency (across time and situations) to focus one's attention on developing him/herself by acquiring new skills, mastering new situations, and improving his/her competence.

State prove goal orientation: In a given situation at a particular moment in time, the extent to which one focuses his/her attention on proving his/her competence to others and gaining favorable judgments from them.

Trait prove goal orientation: The tendency (across time and situations) to focus one's attention on proving one's competence to others and gaining favorable judgments from them.

State avoid goal orientation: In a given situation at a particular moment in time, the extent to which one focuses his/her attention on avoiding

the demonstration of incompetence and negative judgments from others.

Trait avoid goal orientation: The tendency (across time and situations) to focus one's attention on avoiding the demonstration of incompetence and negative judgments from others.

Manipulations of state goal orientations. As it has been alluded to above, characteristics of the situation can influence individuals' state goal orientations. Because of this, researchers (e.g., Ames, 1984; Chambers, Steele-Johnson, & Mangos, 2000; Elliott & Dweck, 1988; Elliot & Harackiewicz, 1996; Harackiewicz & Elliot, 1993; Koestner & Zuckerman, 1994; Martocchio, 1994; Steele-Johnson, Beauregard, Hoover, & Schmidt, 2000) often use task instructions to manipulate individuals' state goal orientations. (Of the cited examples, only Elliot and Harachiewicz [1996] conceptualized goal orientations as three factors; the other researchers manipulated only mastery and performance goal orientations.) What varies for each manipulation is the content of the instructions.

Taking into consideration the various manipulations that researchers have employed, four general themes appear to emerge: 1) performance is a function of effort vs. ability (Chambers et al., 2000; Martocchio, 1994; Steele-Johnson et al., 2000); 2) performance and skills are stable vs. malleable (Chambers et al., 2000; Martocchio, 1994; Steele-Johnson et al., 2000); 3) avoid making mistakes vs. master the task (Elliot & Harackiewicz, 1996); and 4) demonstrate what you can do vs. master the task (Ames, 1984; Chambers et al., 2000; Elliot & Harackiewicz, 1996; Elliott & Dweck, 1988; Jagacinski & Nicholls, 1984; Koestner & Zuckerman, 1994).

In addition to task instructions, state goal orientations can be manipulated through the use of performance feedback (e.g., Butler, 1988) as well as the task environment itself (e.g., Butler, 1989; Roberts, 1992). For example, performance feedback that could be used to elicit a state avoid (prove) goal orientation might focus the individual's attention on his/her performance relative to others, such as "You answered five out of ten questions correctly on the test; most other students answered eight (two) out of ten correctly." Conversely, feedback that is intended to induce a state mastery goal orientation might focus the individual's attention on his/her performance relative to *him/herself*, such as "You answered five out of ten answers correctly on the test; last time, you answered three out of ten questions correctly." In either case, the individual's attention is directed towards some reference score, whether the reference score is actually another individual's score (as with a prove or avoid orientation) or his/her own score at a previous time (as with a mastery orientation).

Finally, goal orientation manipulations that use the task environment as a vehicle often occur naturally. For example, individuals who are active in sports or other group activities which emphasize winning or being 'the best' are continually exposed to a prove- or avoid-inducing environment (Butler, 1989; Roberts, 1992). Additionally, Ames (1992) argues that classroom settings are designed in such a way that they actually induce performance (prove or avoid) goal orientations in most students. Emphasizing standards such as class rank and honor rolls provide the student with a false sense of what is most important. That is, rather than urging students to improve their knowledge and skills for themselves, standards such as those previously mentioned urge students to compete against one another.

Strong needs and desires lead to robust states. As suggested, the strength of an individual's needs and desires to behave in a particular manner have direct impact on the robustness of his/her respective state goal orientations. Further, the strength of these needs and desires represent themselves in the strength of individuals' trait goal orientations (i.e., stronger desires lead to more consistent states, which lead to stronger traits). Thus, trait goal orientations are representative of the strength of individuals motivational needs and desires.

Consider the following example: An individual who typically focuses her attention on mastering the task (i.e., high trait mastery goal orientation) and rarely focuses on proving her competence (i.e., high trait prove goal orientation) or avoiding the demonstration of incompetence (i.e., high trait avoid goal orientation) is told that making mistakes on a given task is a sign of incompetence and such mistakes should be avoided. If the state manipulation were perfect and the individual's needs and desires had absolutely no influences on state goal orientations, he/she would have a high level of state avoid goal orientation and low levels of state mastery and prove goal orientations. This, however, is not necessarily the case; she may instead shift her focus to avoiding failure rather than mastering the task. Psychologists (e.g., Boyle & Klimoski, 1995; Farr, Hofmann, & Ringenbach, 1993; Fisher, 1998; Mischel & Shoda, 1995) agree that an individual's motivation and behavior in a particular situation result from his/her traits (representing needs and desires) as well as characteristics of the situation.

Intuitively, the stronger the individual's traits (i.e., the stronger the individual's needs and desires), the more resilient he/she will be to situational influences. This resilience to situational influences translates into more robust state goal orientations.

Thus, if his/her needs and desires consistently focus his/her attention on personal mastery, telling him/her that mistakes are a sign of incompetence will likely prove useless—his/her state mastery goal orientation will likely be high as well. However, if his/her needs and desires only *sometimes* focus his/her attention on personal mastery, telling him/her that mistakes on the task at hand are a sign of incompetence may lead to a relatively high state avoid goal orientation.

Current measures of trait goal orientations do not lend themselves well to measuring the strength or robustness of an individual's goal orientations (i.e., behavioral consistency). The most widely used measure of trait goal orientations (i.e., that endorses a 3-factor conceptualization of goal orientations) is VandeWalle's (1997) 13-item scale, and makes no reference to the idea of goal orientation strength. One approach to determining the strength of an individual's trait goal orientations would be to use the magnitude of the scale scores. That is, the more strongly an individual endorses statements of a given goal orientation, the stronger the orientation. A second approach to would be to assess the extent to which an individual believes that his/her trait goal orientation beliefs transfer across situations. That is, the greater the variety of situations that an individual feels he/she would endorse a particular goal orientation, the stronger the orientation. As noted, no current measures of trait goal orientation employ the latter method, and future work should move in this direction. For the current study, however, the former method provided an adequate measure of trait goal orientation robustness.

The malleability of personality. Thus, far, factors leading to an individual's state goal orientations when he/she encounters a new situation or task have been limited to his/her trait goal orientations and situational influences or manipulations. Aside from the

situation, however, it is quite possible that there are characteristics of the individual that may moderate the effects of trait goal orientations on state goal orientations. That is, characteristics of the individual may influence him/her to adopt state goal orientations similar to or different from his/her trait goal orientations.

Consider an individual who can adapt to different situations very easily, changing his/her behavior as necessary. This individual may be more likely to adopt state goal orientations that are different from his/her trait goal orientations (i.e., more likely to be influenced by the situation) compared to an individual who cannot adapt to different situations as easily. That is, individuals who have very stable personalities and motivational tendencies are not likely to adopt state goal orientations that are inconsistent with their trait goal orientations. In contrast, individuals with malleable personalities and motivational tendencies may very well adopt state goal orientations that are inconsistent with their trait goal orientations. Although there is no empirical research to support these propositions, there is also no empirical research suggesting that these propositions are necessarily incorrect.

Three personality variables that may have implications for behavioral malleability are openness to experience, agreeableness, and self-monitoring. Although these three personality characteristics are often discussed in terms of interpersonal interaction, one could also interpret them as indicators of the malleability of an individual's behavior; therefore, they lend themselves to the discussion of trait and state goal orientations. Thus, as these three personality characteristics increase, we might expect that individuals are more likely to adopt state goal orientations that are inconsistent with their trait goal orientations. In contrast, low levels of these personality characteristics may reflect

stability and consistency in individuals' behavior, leading an individual to adopt state goal orientations that are similar to their trait goal orientations.

Openness to experience, as its name implies, refers to an individual's appreciation for change and new experiences (McCrae & Costa, 1985). As Barrick and Mount (1991) note, openness to experience is also commonly associated with broad-mindedness. Thus, an individual who has a high level of openness to experience, by definition, is easily influenced by situations—he/she has an open mind regarding different situations.

A second personality characteristic, agreeableness, also has implications for the stability or malleability of an individual's behavior. Agreeableness refers to the extent to which an individual is cooperative, tolerant, and flexible (Barrick & Mount, 1991; McCrae & Costa, 1985). Consider an individual who has a low level of agreeableness. This individual is expected to be adamant in his/her views and opinions. As an extension of this logic, one could also expect such an individual to be set in his/her behaviors as well.

Finally, self-monitoring refers to the extent to which an individual is sensitive to situational cues of appropriateness and regulates his/her behavior accordingly (Snyder, 1974). Again, self-monitoring has implications for stable vs. malleable behavior. Specifically, an individual with a high level of self-monitoring finds it easy to adapt his/her behavior to fit the situation. Thus, if situational cues indicate to the individual that he/she should focus on mastering a task (i.e., mastery goal orientation), he/she will likely focus on mastering the task at hand.

As discussed in the Methods section of this paper, subjects in the current study engaged in a problem-solving task. At various points throughout the experiment,

individuals were asked to describe their motivation and specify the nature of their goals. In such a situation, goal orientations are highly salient and could be expected to vary as a function of time. Other characteristics of their personality (i.e., such as openness to openness to experience, agreeableness, and self-monitoring), however, are not as likely to change over time. If, for example, individuals were asked to engage in a variety of social situations rather than a problem-solving task, one might expect that the aforementioned personality variables would be more likely to change over time compared to goal orientations. In the context of the current experiment, however, these personality variables were not expected to vary. For this reason, a distinction is made between trait and state goal orientations, but this distinction is not made for openness to experience, agreeableness, or self-monitoring.

Influence of self-efficacy on state goal orientations. Bandura (1997) defines self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3). In essence, self-efficacy refers to an individual's perceived ability to accomplish a given task or goal. Given this definition, it should come as no surprise that researchers (e.g., Zimmermann & Bandura, 1994; Zimmermann, Bandura, & Martinez-Pons, 1992) have argued that self-efficacy beliefs actually govern behavioral accomplishments.

The method by which self-efficacy beliefs dictate behavioral success can best be understood in terms of effort expenditure and task persistence. As Bandura (1997) explains, an individual who has low self-efficacy in a specific situation will find it difficult to motivate him/herself, thus reducing the amount of effort that he/she expends. This diminished effort expenditure translates into decreased performance. An individual

with high self-efficacy in a given situation, in contrast, is not likely to experience the same diminished motivation, effort, and performance. Instead, he/she will likely persist in the face of difficulty and continue to exert the effort necessary for success. Indeed, Locke and Latham (1990) argue that self-efficacy leads to subsequent motivation, goals, and performance (see links 4-6 in Figure 1).

This discussion of effort expenditure and task persistence is highly similar to the previous discussions of goal orientations. Specifically, it was noted that an individual with a high level of (state) mastery goal orientation is motivated by the desire to learn and master skill or task at hand; such an individual is likely to increase effort and persist in the face of difficulty (VandeWalle, 1997). In contrast, an individual with a high level of (state) avoid goal orientation is motivated in large part by the desire to avoid appearing incompetent; such an individual is likely to withdraw from the task at hand if failure is probable (VandeWalle, 1997). Thus, mastery and avoid goal orientations correspond nicely to individuals with high and low self-efficacy (respectively), as described by Bandura (1997).

Although Bandura's discussions of self-efficacy make no reference (explicit or implicit) to prove goal orientation, the reader is reminded that the key motivating factor of this kind of goal orientation is the demonstration of one's competence to others (VandeWalle, 1997). Therefore, an individual with a high level of (state) prove goal orientation is motivated (and exerts effort) in situations where he/she believes that success is probable. By definition, such a belief is present when self-efficacy is high.

To this point, the antecedents of self-efficacy have not been addressed explicitly. This issue is addressed in a later section.

Summary of state and trait goal orientations. Thus far, it has been demonstrated that individuals' state goal orientations are not predicted solely by their trait goal orientations. Instead, an individual's trait goal orientations and situational factors (e.g., a goal orientation manipulation) jointly influence his/her state goal orientations. Further, this relationship between trait goal orientations, situational factors, and state goal orientations is interactive in nature, and the robustness of state goal orientations is dependent upon the strength of trait goal orientations (see links 2 and 3 in Figure 1). Specifically, the stronger an individual's trait goal orientations, the less resilient he/she will be to situational influences and the more robust will be his/her respective state goal orientations.

In addition to the interaction between trait goal orientations and situational influences, it was suggested that characteristics reflecting the stability and consistency of an individual's behavior (i.e., openness to experiences, agreeableness, self-monitoring) may interact with trait goal orientations in the determination of state goal orientations. Finally, it was shown that an individual's self-efficacy in a given situation influences his/her state goal orientations (see links 4 and 16 in Figure 1 for an illustration of these relationships).

Now that the antecedents of an individual's initial state goal orientations for a given situation have been identified and discussed, attention shifts to the dynamic processes involved in the stability of state goal orientations over time. In doing so, we examine the roles of performance feedback, performance evaluations, and affect. First, however, we must address the process by which performance feedback becomes salient.

Self-Set Goals, Performance, and Feedback

The premise of this section is simple: for every situation, an individual sets goals for him/herself; these goals translate into behavior and subsequent performance; and the individual receives (internal or external) feedback regarding his/her performance (see links 6 and 7 in Figure 1). The current section examines each stage in this process in more detail.

Goal setting leads to performance, and performance leads to feedback. Locke and Latham (1990, p. 2) describe a goal as "the generic concept that encompasses the essential meaning of terms such as intention, task, deadline, purpose, aim, end, and objective...all of these have in common the element that there is something that the person wants to achieve." Thus, goal setting can be described as the process whereby an individual chooses a particular (desired) end-state toward which he/she works.

Goal setting, essentially, is the driving force of behavior—it is the mechanism by which motivation leads to action. Intuitively, this action then leads to performance; the specific nature of this performance (i.e., good or bad), however, is of little importance. Instead, understanding that there exists a relationship between the goals that individuals set for themselves (i.e., self-set goals) and subsequent performance is crucial for understanding goal setting theory.

In a meta-analysis of 13 studies (and 2,285 subjects) from 1973-1989, Locke and Latham (1990) found an average correlation (weighted by sample size) between self-set goals and subsequent performance of .42; observed correlations in the individual studies ranged from .16-.83. Thus, higher self-set goals lead to higher performance, and vice versa.

Internal and external sources of feedback. After an individual performs a task, he/she receives some sort of feedback regarding his/her performance. This feedback can come either as the result of another individual telling him/her "You did well/poorly," or it can come from within the individual. That is, an individual may evaluate his/her *own* performance on a task and come to the conclusion that "I did pretty well/poorly." In any situation, then, an individual can always gather some form of feedback. (Just because an individual *can* obtain feedback regarding his/her performance, this does not necessarily mean that he/she *will* obtain feedback.)

Based on the discussion thus far, it is evident that the goals an individual sets for him/herself have direct impact on his/her performance, and this performance translates into some form of feedback—often positive or negative in nature. What have not been addressed thus far are the factors that lead an individual to choose a goal. Attention now shifts in this direction.

How does an individual choose a goal? Factors leading to goal choice (i.e., self-set goals) are numerous, but two of the most robust factors are self-efficacy and valence. Recall from above that self-efficacy refers to the "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). Valence, in contrast, refers to the value that an individual places on goal attainment (Locke & Latham, 1990). Based on these two factors alone, (Locke & Latham, 1990) note that researchers (e.g., Dachler & Mobley, 1973; Reidel, Nebeker, & Cooper, 1988) have been able to predict goal choice successfully.

Although the proposed conceptual model (see Figure 1) does not contend that goal setting is the direct result of self-efficacy and valence, these relationships still exist

in the model. The current model proposes that an individual's state goal orientations lead directly to goal choice. Moreover, one of the components affecting state goal orientation is self-efficacy. Thus, the current model proposes that the link between self-efficacy and goal setting is mediated by state goal orientations.

Further, the concept of goal valence is embedded in state goal orientations. Recall from discussion of goal orientations that individuals can have varying levels or strengths of specific (state) goal orientations. Thus, the more important the attainment of a particular goal is to the individual, the more centrally motivating is that goal. This increased importance or centrality of a particular goal, then, is translated into stronger goal orientations.

To this point, factors leading to an individual's state goal orientations have been examined, and the process by which these state goal orientations lead to subsequent goals, performance, and feedback has been discussed. How an individual reacts to this feedback becomes an important question when we are interested in predicting his/her subsequent motivation. In the following sections, the (moderated) effects of feedback on performance evaluations and affect are explored.

Performance Evaluations

Weiner's contributions. Over the last three decades, the work of Weiner has influenced the attribution literature to a great extent, specifically regarding attributions for achievement outcomes. In discussing the possible attributions that individuals can make following achievement outcomes, Weiner (1979) highlights three independent dimensions of attributions: locus, stability, and controllability.

The locus of an event refers to the extent to which an individual believes that his/her performance was within his/her boundaries of control—e.g., "Did my teacher sabotage my work, or did I just not do well?" The stability of an event refers to the extent to which an individual believes that a similar outcome will occur in the future—e.g., "Was this a one-time event, or is it possible that may fail a math test in the future?" Finally, the controllability of an event refers to the extent to which an individual believes that he/she can control similar events in the future—e.g., "Can I study harder next time and do better, or am I doomed to failure?" Based on these three dimensions, individuals can make vastly different attributions for their performance.

Success vs. failure. In later work, Weiner (1986) noted that before an individual makes any attributions as described above, he/she first makes an overall evaluation of his/her performance. Specifically, individuals decide whether they were successful or unsuccessful on the task. This success-failure evaluation then initiates both affective reactions to the task (i.e., feedback) as well as the more specific attribution process.

Although Weiner does not address this issue, whether an individual concludes that he/she succeeded or failed at a task is not as straightforward as simply knowing whether he/she received positive or negative performance feedback. Instead, different individuals will interpret positive and negative feedback differently. Take as an example an individual who receives negative performance feedback. He/she can interpret this feedback in one of two ways. First, he/she can conclude that the negative feedback must mean that he/she has failed the task. However, he/she can also make the less severe conclusion that he/she was not as successful as he/she could have been.

The goal orientation literature suggests that, compared to high levels of state mastery goal orientation, high levels of state avoid goal orientation motivate individuals to underestimate their number of successes, overestimate their number of failures, and to view current success as unpredictive of future success—they view their successes (i.e., positive feedback) as less successful (Diener & Dweck, 1980). Essentially, individuals who focus a great deal of attention on avoiding failure and relatively little attention on learning the task (i.e., high levels of avoid goal orientation and low levels of mastery goal orientation) make negative performance evaluations. In contrast, individuals who focus a great deal of attention on learning the task and relatively little attention on avoiding failure (i.e., high levels of mastery goal orientation and low levels of avoid goal orientation) tend to make more positive—yet realistic—performance evaluations. Further, because high levels of prove goal orientation motivate an individual to focus on attaining success (i.e., the opposite effect of high levels of avoid goal orientation), one could infer that high levels prove goal orientation would motivate individuals to interpret positive and negative feedback in positive—and possibly unrealistic—manner.

State and trait goal orientations and performance evaluations. As noted, an individual may have different state and trait goal orientations in a given situation. Whether an individual uses his/her trait or state goal orientations to interpret performance feedback, however, is a question that has yet to be addressed in the literature. For example, one could argue that because we are talking about an individual behaving in a specific situation, he/she will interpret feedback based on his/her state goal orientations. However, one could also argue that just because an individual may be motivated by state goal orientations that are different from his/her trait goal orientations in a specific

situation, this does not mean that his/her trait goal orientation remain mute in the feedback interpretation process. Instead, one could infer that an individual uses both his/her state goal orientations as well as his/her trait goal orientations to interpret feedback (see links 9 and 11 in Figure 1).

Summary of performance evaluations. In this section it has been demonstrated that the evaluations individuals make regarding their performance depend in large part on their goal orientations. Specifically, high levels of mastery and prove goal orientations are likely to motivate individuals to be more positive in their performance evaluations, whereas high levels of avoid goal orientation are likely to motivate individuals to be more negative in their performance evaluations. Further, it was suggested that high levels of prove and avoid goal orientations are likely to motivate individuals to make unrealistic performance evaluations, whereas high levels of mastery goal orientation are likely to motivate individuals to make more realistic performance evaluations.

In addition, the arguments presented in this section have suggested that individuals' state *and* trait goal orientations influence the evaluations that individuals make regarding their performance (see links 9 and 11 in Figure 1 for a summary of these relationships). In the next section, attention shifts toward the effects of feedback on affective reactions.

Affective Reactions to Feedback

In the discussion of control theory, it was proposed that individuals are motivated by one of two discrepancy loops: a discrepancy reducing loop—whereby individuals are motivated to work toward some positively valenced goal—and a discrepancy enlarging loop—whereby individuals are motivated to move away from some negatively valenced

goal (Carver et al., 1996; Carver & Scheier, 1995). Not only do individuals who engage in these two loops differ in their motivation, but they also differ in the affect that they experience following performance.

Following the lead of Higgins (1987; Higgins et al., 1986), Carver and his associates (Carver et al., 1996; Carver & Scheier, 1995) proposed that individuals who engage in discrepancy reducing loops tend to experience affect in terms of joy, ranging from elation to depression. That is, individuals become depressed when they fail to achieve some reward. In contrast, individuals who engage in discrepancy enlarging loops tend to experience affect in terms of distress, ranging from relief to anxiety (Carver et al., 1996; Carver & Scheier, 1995). That is, individuals become anxious when they fail to avoid some punishment.

Whether an individual experiences high or low levels of joy (or distress) following performance is dependent on their perceived performance. That is, if the individual feels that he/she did well, elation (or relief) will result. In contrast, if the individual feels that he/she did not do well, depression (or anxiety) will result.

State and trait goal orientations and affective reactions. Parallels were drawn between those who engage in discrepancy reducing loops and mastery and prove goal orientations, and between those who engage in discrepancy enlarging loops and avoid goal orientation. Further, as noted in the discussion of performance evaluations, positive and negative performance feedback do not necessarily lead to perceptions of doing well and doing poorly, respectively. Instead, individuals' levels of goal orientations (i.e., state and trait) influence the extent to which they make success and failure evaluations (see links 9 and 11 in Figure 1). Recall that high levels of avoid goal orientation are likely to

motivate individuals to interpret negative feedback as failure, whereas high levels of prove and mastery goal orientations are likely to motivate individuals to interpret negative feedback less severely.

Finally, research suggests that high levels of mastery goal orientation are associated with the experience of less extreme levels of affect compared to the affect associated with high levels of prove and avoid goal orientations. For example, Steele-Johnson et al. (2000) found that high levels of mastery goal orientation were associated with only moderate levels of satisfaction/dissatisfaction regarding performance on a problem-solving task. In contrast, high levels of performance goal orientation (these researchers did not distinguish between performance-avoid and performance-prove) were associated with extreme levels of satisfaction/dissatisfaction. Thus, goal orientations (i.e., state *and* trait) moderate the effects of performance feedback sign on affective reactions (see links 10 and 12 in Figure 1).

Performance evaluations and affect. Imbedded in the discussion of goal orientations and affect is the notion of a temporal relationship between individuals' performance evaluations and affect. Specifically, it is quite possible that performance evaluations influence individuals' affect. If an individual feels that he/she was successful or that effort on the task is useful, he/she is likely to experience higher levels of affect (i.e., elation or relief). In contrast, if an individual feels that he/she failed or that effort on the task is useless, he/she is likely to experience lower levels of affect (i.e., depression or anxiety). Indeed, Weiner (1986) notes that individuals respond to task performance (i.e., feedback) by making a general evaluation regarding their performance, which then leads to affective reactions and more specific attributions (see link 13 in Figure 1).

Summary of affective reactions to feedback. In this section, it was demonstrated that high levels of prove and mastery goal orientations (i.e., individuals who engage in discrepancy reducing loops) are associated with affective reactions along a joy dimension (ranging from elation to depression). In contrast, high levels of avoid goal orientation (i.e., individuals who engage in discrepancy enlarging loops) are associated with affective reactions along a distress dimension (ranging from relief to anxiety).

In addition, the moderating effects of state and trait goal orientations were identified, such that positive and negative feedback lead to extreme levels of elation (or relief) and depression (or anxiety) when coupled with high levels of prove (or avoid) goal orientation. In contrast, positive and negative feedback lead to less extreme levels of elation and depression when coupled with high levels of mastery goal orientation. These effects were discussed in terms of a temporal relationship between performance evaluations and affect.

In the next section, the dynamics of individuals' state goal orientations are examined in terms of the constructs discussed thus far. Specifically, the roles of performance evaluations, self-efficacy, and affect in the dynamic processes behind state goal orientations are explored.

State Goal Orientations Over Time

Every time an individual performs a task and receives some sort of feedback regarding his/her performance (whether the feedback is internally generated or externally offered is irrelevant), the situation changes. No longer does the individual necessarily operate under the same set of assumptions regarding the task; no longer does the individual necessarily have the same sense of self-efficacy regarding the task; and no

longer does the individual necessarily experience the same affect when thinking about the task. Thus, because all of these factors of the situation can change, it is only reasonable to conclude that an individual's state goal orientations can change as well (note the cycle nature of Figure 1, represented by a dotted line).

Self-efficacy revisited. In an earlier section, it was noted that the effects of high levels of self-efficacy resemble the effect of high levels of mastery and prove goal orientations and that the effects of low levels of self-efficacy resemble those of high levels of avoid goal orientation. Further, Locke and Latham (1990) argued that self-efficacy leads to subsequent goals, motivation, and performance. Thus, the proposition was offered that an individual's self-efficacy in a given situation influences his/her state goal orientations (see links 4 and 16 in Figure 1). An important question that arises, then, is 'What influences self-efficacy in a given situation?'

Researchers (e.g., Fisher, 1998; Locke & Latham, 1990; Mone & Baker, 1992) have argued that self-efficacy is determined in large part by past experience with a task. For example, Fisher (1998) found that individuals' goal-performance discrepancies in a college classroom setting significantly predicted subsequent self-efficacy. Thus, these findings suggest that individuals make some sort of conscious evaluation of their performance (e.g., based on performance-goal discrepancies), and these evaluations lead to subsequent self-efficacy. Specifically, when an individual feels that his/her performance on a task was poor, subsequent self-efficacy is low—the individual has low confidence in his/her ability based on past experience. When an individual feels that his/her performance was good, subsequent self-efficacy is high—the individual has high confidence in his/her ability based on past performance.

Affect revisited. The final link in Figure 1 that has yet to be explained is between affect and subsequent state goal orientations (see link 14). The consensus in the goal and affect literatures is that affect leads to subsequent motivation, which is usually operationalized as effort expenditure or persistence (for a review, see Schwarz & Bohner, 1996). For example, the literature argues that positive affect (e.g., satisfaction) leads to high effort exertion and goal persistence and that negative affect (e.g., dissatisfaction) leads to low effort exertion and goal persistence. That is, negative affect signals to the individual that success is not likely and that he/she should disengage from the task (Schwarz & Bohner, 1996).

This explanation, however, does not lend itself well to the discussion of state goal orientations—where individuals are motivated by different factors. Specifically, the literature does not consider the possibility that different levels of affect (and different *kinds* of affect) may lead to different kinds of goals. For example, an individual with a high level of state prove goal orientation (and low levels of state mastery and avoid goal orientations) who experiences negative feedback may adopt a higher level of state avoid goal orientation in the future. That is, rather than focus on the demonstration of ability, this individual may shift his/her focus to avoiding the demonstration of incompetence. One such way to do so may be to reduce effort and focus on some other aspect of the task. That way, the individual can respond to negative feedback by thinking 'I did not perform well because I did not try' as opposed to thinking 'I tried real hard and I still did not perform well...I must be stupid.'

Regardless, it is evident that an individual's affective reactions to an event have impact on the goals that he/she adopts as well as his/her future effort and persistence.

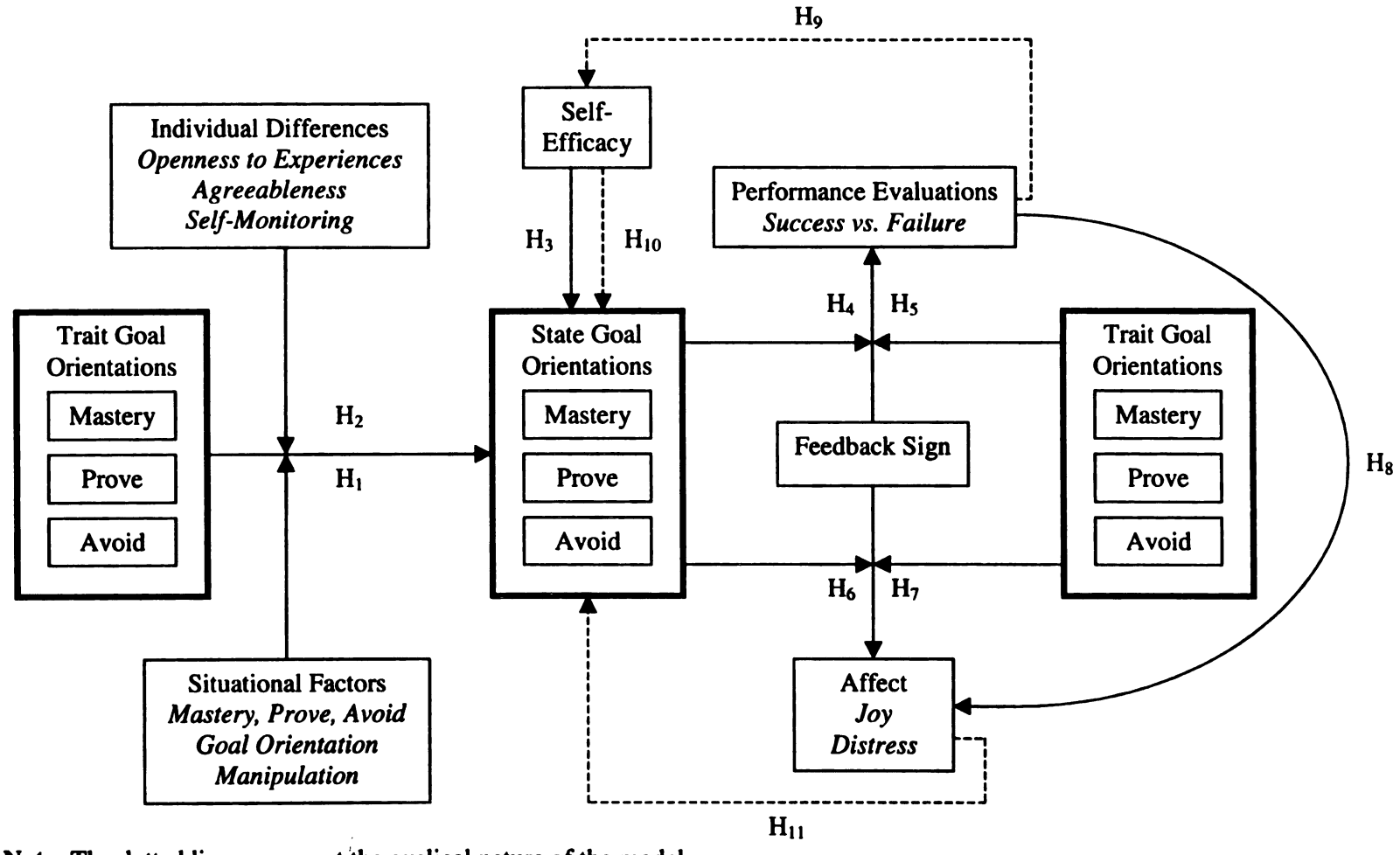
Now that the relevant theory and literature have been discussed regarding each component in the conceptual model (see Figure 1), an operational model and a series of testable hypotheses are offered.

Research Hypotheses

Figure 2 contains an operational model for the questions of interest in the current study. Compared to the conceptual model (i.e., Figure 1), the only differences between the two models are 1) greater specificity in Figure 2 regarding the operationalization of particular variables, and 2) the elimination of goal setting and performance from the operational model. Whereas the former difference is reasonable, the latter difference deserves some discussion.

In the current study, specific goals were assigned to individuals, thus eliminating the goal setting process from consideration. Further, the interest in the current study was not on individuals' performance per se. Rather, interest resided in individuals' interpretations of and reactions to their performance (i.e., performance feedback). That is, how an individual evaluates his/her performance based on feedback and how he/she reacts affectively to this feedback was of primary interest in the current study. Thus, performance served simply as a vehicle for the delivery of believable feedback. For these reasons, goal setting and performance were eliminated from the operational model and were not examined explicitly.

Factors leading to initial state goal orientations. Recall the previous example of an individual with high trait mastery goal orientation and low trait prove and avoid goal orientations. If told that making mistakes on a given task was a sign of incompetence and that such mistakes should be avoided at all costs (i.e., an avoid manipulation), this



Note: The dotted lines represent the cyclical nature of the model.

Figure 2. *Conceptual model*

individual is likely to continue to be motivated by high levels of state mastery goal orientation and not believe the instructions. In contrast, if this individual's trait mastery had been lower, such instructions would have been more successful in convincing him/her to adopt avoid-oriented goals. Thus,

> **Hypothesis 1:** *Trait goal orientations and a goal orientation manipulation would interact in their effects on initial state goal orientations. Specifically, as a particular trait goal orientation increases, the influence of an inconsistent goal orientation manipulation on the respective state goal orientation will decrease.*

In addition to the joint effects of trait goal orientations and a goal orientation manipulation, attention was drawn to the moderating effects of openness to experiences, agreeableness, and self-monitoring on state goal orientations. Specifically, these three personality characteristics were identified as measures of an individual's stability and consistency in terms of motivation and behavior. As an individual's desire for consistency and stability of behavior increases, he/she is likely to adopt state goal orientations that are consistent with his/her trait goal orientations. Put another way, as openness to experiences, agreeableness, and self-monitoring increase, an individual is more likely to adopt state goal orientations that are inconsistent with his/her trait goal orientations. Thus,

> **Hypothesis 2:** *Trait goal orientations and individual difference variables would interact in their effects on initial state goal orientations. Specifically, as openness to experiences, agreeableness, and self-monitoring* ***increase****, the relationship between trait goal orientations and respective state goal orientations would* ***decrease****.*

Finally, Bandura (1997) notes that an individual with low self-efficacy in a specific situation will find it difficult to motivate him/herself, thus reducing the amount of effort that he/she expends. In contrast, an individual with high self-efficacy in the

same situation is likely to exert much effort so as to succeed (Bandura, 1997). Parallels were drawn between individuals with high self-efficacy and those with high levels of state mastery and prove goal orientations as well as between individuals with low self-efficacy and those with high levels of state avoid goal orientation. Further, the temporal relationship that exists between these variables is one whereby self-efficacy leads to motivation (Locke & Latham, 1990). Thus,

Hypothesis 3: *Self-efficacy would have a main effect on initial state goal orientations.*

Specifically,

Hypothesis 3a: *As self-efficacy* ***increases****, initial state mastery goal orientation would* ***increase****.*

Hypothesis 3b: *As self-efficacy* ***increases****, initial state prove goal orientation would* ***increase****.*

Hypothesis 3c: *As self-efficacy* ***decreases****, initial state avoid goal orientation would* ***increase****.*

Effects of goal orientations and feedback on performance evaluations. In the discussion of success vs. failure performance evaluations, it was noted that high levels of mastery and prove goal orientations tend to be associated with more positive performance evaluations whereas high levels of avoid goal orientation tend to motivate individuals to make more negative performance evaluations. In addition, it was noted that both an individual's state and trait goal orientations play integral roles in this process. Thus,

Hypothesis 4: *State goal orientations and feedback sign (positive vs. negative) would interact in their effects on performance evaluations.*

Specifically,

Hypothesis 4a: *As state mastery goal orientation increases,* ***positive*** *feedback would lead to performance evaluations of success and* ***negative*** *feedback would lead to performance evaluations of neither success nor failure.*

Hypothesis 4b: *As state prove goal orientation increases,* ***positive*** *feedback would lead to performance evaluations of success and* ***negative*** *feedback would lead to performance evaluations of failure.*

Hypothesis 4c: *As state avoid goal orientation increases,* ***positive*** *feedback would lead to performance evaluations of success and* ***negative*** *feedback would lead to performance evaluations of failure.*

In addition,

Hypothesis 5: *Trait goal orientations and feedback sign (positive vs. negative) would interact in their effects on performance evaluations.*

Specifically,

Hypothesis 5a: *As trait mastery goal orientation increases,* ***positive*** *feedback would lead to performance evaluations of success and* ***negative*** *feedback would lead to performance evaluations of neither success nor failure.*

Hypothesis 5b: *As trait prove goal orientation increases,* ***positive*** *feedback would lead to performance evaluations of success and* ***negative*** *feedback would lead to performance evaluations of failure.*

Hypothesis 5c: *As trait avoid goal orientation increases,* ***positive*** *feedback would lead to performance evaluations of success and* ***negative*** *feedback would lead to performance evaluations of failure.*

Effects of goal orientations and feedback on affect. Parallels were drawn between engaging in discrepancy reducing loops and mastery and prove goal orientations, and between engaging in discrepancy enlarging loops and avoid goal orientation. In addition, research suggests that the affect that individuals experience differs for discrepancy reducing and enlarging loops. Specifically, discrepancy reducing loops lead to the

experience of joy (elation vs. depression) and discrepancy enlarging loops lead to the experience of distress (relief vs. anxiety) (Carver et al., 1996; Carver & Scheier, 1995). Further, it was noted that high levels of mastery goal orientation tend to be associated with less extreme levels of affect compared to the affect associated with high levels of prove and avoid goal orientations (Steele-Johnson et al., 2000). Finally, similar to the relationship between goal orientation, feedback sign, and performance evaluations, it was suggested that an individual's trait *and* state goal orientations are integral in the experience of affect. Thus,

> ***Hypothesis 6:*** *State goal orientations and feedback sign (positive vs. negative) would interact in their effects on the experience of affect.*

Specifically,

> **Hypothesis 6a:** *As state mastery goal orientation increases,* ***positive*** *feedback would lead to positive levels of joy (i.e., elation) and* ***negative*** *feedback would lead to negative levels of joy (i.e., depression).*
>
> **Hypothesis 6b:** *As state prove goal orientation increases,* ***positive*** *feedback would lead to positive levels of joy (i.e., elation) and* ***negative*** *feedback would lead to negative levels of joy (i.e., depression).*
>
> **Hypothesis 6c:** *As state avoid goal orientation increases,* ***positive*** *feedback would lead to positive levels of distress (i.e., relief) and* ***negative*** *feedback would lead to negative levels of distress (i.e., anxiety).*

In addition,

> ***Hypothesis 7:*** *Trait goal orientations and feedback sign (positive vs. negative) would interact in their effects on the experience of affect.*

Specifically,

Hypothesis 7a: *As trait mastery goal orientation increases,* ***positive*** *feedback would lead to positive levels of joy (i.e., elation) and* ***negative*** *feedback would lead to negative levels of joy (i.e., depression).*

Hypothesis 7b: *As trait prove goal orientation increases,* ***positive*** *feedback would lead to positive levels of joy (i.e., elation) and* ***negative*** *feedback would lead to negative levels of joy (i.e., depression).*

Hypothesis 7c: *As trait avoid goal orientation increases,* ***positive*** *feedback would lead to positive levels of distress (i.e., relief) and* ***negative*** *feedback would lead to negative levels of distress (i.e., anxiety).*

Dynamic processes behind state goal orientations. Based on Weiner's (1986) argument that individuals, after performing a task and receiving some sort of feedback (internal or external) regarding their performance, make general evaluations of their performance followed by affective reactions to those evaluations. Thus,

Hypothesis 8: *An individual's performance evaluation would have a main effect on the experience of affect. Specifically, evaluations of success would lead to* ***positive*** *levels of joy (i.e., elation) and distress (i.e., relief) and evaluations of failure would lead to* ***negative*** *levels of joy (i.e., depression) and distress (i.e., anxiety).*

As noted, researchers have argued that self-efficacy is determined in large part by past experience with a task. Specifically, 'good' performance at a task leads one to have a high sense of perceived capability (i.e, self-efficacy) regarding the task at a later time, whereas 'poor' performance leads to low perceived capability (Fisher, 1998; Locke & Latham, 1990; Mone & Baker, 1992). In line with these findings, then,

Hypothesis 9: *An individual's performance evaluation would have a main effect on subsequent self-efficacy. Specifically, evaluations of success would lead to* ***high*** *self-efficacy and evaluations of failure would lead to* ***low*** *self-efficacy.*

Recall that Hypothesis 3 predicted that individuals' levels of self-efficacy would lead to initial state goal orientations (see Figure 2). Placing state goal orientations in a dynamic context, then, this hypothesis generalizes to subsequent state goal orientations as well. Thus,

> **Hypothesis 10:** *Self-efficacy would have a main effect on subsequent state goal orientations.*

Specifically,

> **Hypothesis 10a:** ***High*** *self-efficacy would lead to* ***high*** *levels of subsequent state mastery goal orientation.*
>
> **Hypothesis 10b:** ***High*** *self-efficacy would lead to* ***high*** *levels of subsequent state prove goal orientation.*
>
> **Hypothesis 10c:** ***Low*** *self-efficacy would lead to* ***high*** *levels of subsequent state avoid goal orientation.*

Finally, as suggested in the discussion of affective reactions to feedback, high levels of state mastery and prove goal orientations lead to different kinds of affect compared to high levels of state avoid goal orientation. Specifically, high levels of state mastery and prove goal orientations lead to the experience of joy (elation vs. depression), whereas high levels of state avoid goal orientation lead to the experience of distress (relief vs. anxiety). Further, it was noted that high levels of mastery goal orientation tend to be associated with less extreme affective experiences compared to the affective experiences associated with high levels of prove and avoid goal orientations.

Although the goal orientation literature does not address this issue, it was suggested that affect has direct influence on subsequent motivation (Schwarz & Bohner, 1996). However, the nature of this influence in terms of goal orientation is unclear. One possibility for the nature of this influence could be that affect serves as a reinforcement

for state goal orientations. For instance, because high levels of prove and avoid goal orientations are associated with extreme levels of affect, one could infer that extreme levels of affect lead to high levels of state prove and avoid goal orientations. Specifically, extremely positive affect (i.e., elation or relief) might lead an individual to seek that positive affect in the future, thus adopting a high level of state prove goal orientation. In contrast, extremely negative affect (i.e., depression or anxiety) might lead an individual to avoid that negative affect in the future, thus adopting a high level of state avoid goal orientation. Finally, because high levels of mastery goal orientation are associated with moderate levels of affect, one could infer that moderate levels of affect lead to high levels of state mastery goal orientation. Thus,

Hypothesis 11: *Affect would have an effect on subsequent state goal orientations.* Specifically,

> **Hypothesis 11a:** *As the experience of distress becomes more* ***positive*** *(i.e., relief), subsequent state prove goal orientation would* ***increase****. As the experience of distress becomes more* ***negative*** *(i.e., anxiety), subsequent state avoid goal orientation would* ***increase****.*
>
> ***Hypothesis 11b:*** *As the experience of joy becomes more* ***positive*** *(i.e., elation), subsequent state mastery and prove goal orientations would* ***increase****. As the experience of joy becomes more* ***negative*** *(i.e., depression), subsequent state avoid goal orientation would* ***increase****.*

The dotted lines in Figures 1 and 2 represent the cyclical nature of the models. That is, data in the current study were collected in waves, and the majority of the research hypothesis (i.e., Hypotheses 4-11) were relevant and needed to be tested beyond the first wave. The manner in which these analyses were conducted is discussed in the Results section of this paper.

METHOD

Study Design

A 3 (mastery vs. prove vs. avoid goal orientation manipulation) X 2 (positive vs. negative feedback) X 3 (trial blocks) design was used; each block contained 15 trials. All procedures were completed via computer.

Subjects

Three hundred thirteen undergraduate students participated as subjects in the current experiment in exchange for research participation points to be applied toward their introductory psychology class. Three subjects were removed from analyses because they did not finish the experiment. Of the 310 subjects in the final sample, 59% were female, 46% were freshmen, and their mean age was 19.6 years (SD = 2.03 years). On average, subjects reported that they did not know much about the stock market (M = 3.91, SD = .82) in response to the question "How much do you know about the stock market?" (1 = "Very much", 5 = "Nothing at all").

Prior to the study, a power analysis was conducted to determine a sufficient sample size. Rather than identify the sample size needed to obtain a particular level of power given an alpha level and effect size, the percentage of variance needed to be explained by each of the hypothesized effects given a level of power and sample size was computed (Murphy & Myors, 1998). Based on a sample of 300 (i.e., approximately 50 per condition), a power analysis revealed that the hypothesized effects would need to account for approximately 1.5-2% of the variance in order to achieve power = .5. Approximately 2.5-3% of the variance in the dependent variables would need to be explained by the hypothesized effects in order to achieve power = .8. These effect sizes

are comparable to Cohen's (1992) small-medium effects. Thus, a sample of 310 yielded sufficient power in the current study.

Task Overview and Criterion Measure

A multiple cue probability learning (MCPL) task was used as the performance task in the current study. In this task, subjects were asked to assume the role of a stock broker who had to predict the closing price of some stocks. Subjects were given information regarding five factors that affect stock price (i.e., number of outstanding shares; yearly earnings for the previous year, projected yearly earnings for the current year, total assets, and total liabilities), and they were instructed to ignore any prior knowledge of stock prices. The subjects' task was to predict the closing price of each stock based on the values provided for each of the influential factors. (See Appendix A for a sample trial.)

The negative consequences of overestimating stock prices (i.e., opportunity cost for holding the stock too long—loss of money) and underestimating stock prices (i.e., sell the stock too soon—loss of money) were emphasized so that subjects would not purposely over-predict or under-predict stock prices. Specifically, subjects were told that,

> "If a stock broker overestimates the closing price of a stock, people may hold onto their stock for too long because they think it will be worth more later—in this case they would lose money because they should have sold the bad stock and bought a better one. If the stock broker underestimates the closing price of a stock, people may sell the stock too early—in this case they would also lose money because they sold the stock too soon. In either case, the investor would lose money because the stock broker's prediction was not accurate."

'Actual' stock prices were computed using a complex algorithm that was developed for this study. After each trial, subjects were given the actual stock price and were reminded of their prediction. The absolute difference between actual and predicted stock price was calculated for each trial. These difference scores were averaged across the 15 trials in each block (only 14 trials in Block 1 were averaged because Trial 1 was used to acclimate subjects to the task) to obtain an 'average error score' for each subject. These average error scores were used to provide subjects with normative feedback, as discussed below.

Goal Orientation Manipulations

As noted above, researchers have used a variety of task instructions to manipulate individuals' goal orientations. Further, these different manipulations have tended to center around four general themes: 1) performance is a function of effort vs. ability; 2) performance and skills are stable vs. malleable; 3) avoid making mistakes vs. master the task; and 4) demonstrate what you can do vs. master the task. Goal orientations were manipulated in the current study through the use of task instructions based on these four themes. Instructions used to elicit a high level of state mastery goal orientation focused the individual's attention on the perception that performance on the task could be improved with practice (i.e., performance was a function of effort) and that one could learn from his/her mistakes:

> "Successful performance on this task requires the use of skills that must be developed and practiced. At first, you should expect to make a lot of mistakes, but this is ok because we can learn from our mistakes. Through practice, though, you will be able to develop the necessary skills increase your performance. It is important for you to remember that the more practice you have, the better you will be able to perform on this task.

Thus, you should focus your attention on developing your skills and mastering the task rather than on the mistakes that you make."

Instructions used to elicit a high level of state prove goal orientation focused the individual's attention on the perception that performance on the task could not be improved with practice and that performance was based on the individual's underlying abilities. In addition, the individual's attention was directed toward demonstrating his/her competence to others:

> "Successful performance on this task is based on skills and abilities that either you do or do not already have. We are interested in comparing your performance on this task to that of other individuals so that we can examine different individuals' underlying abilities to perform this task. Some students really stand out because they do so much better than everyone else; if you perform better than most other students do, this would indicate that you have more ability than they do. Remember, you already have the ability."

Similar to the instructions used to elicit a high level of state prove goal orientation, instructions used to elicit a high level of state avoid goal orientation focused the individual's attention on the perception that their performance on the task was based on underlying abilities. Different from the prove goal orientation manipulation, however, the individual's attention was also directed toward the avoidance of performing poorly and looking incompetent:

> "Successful performance on this task is based on skills and abilities that either you do or do not already have. We are interested in comparing your performance on this task to that of other individuals so that we can examine different individuals' underlying abilities to perform this task. Some students really stand out because they do so much worse than everyone else; if you perform worse than most other students do, this would indicate that you have less ability than they do. Thus, you should

avoid making mistakes that will make you appear incompetent. Remember, you already have the ability."

Subjects were randomly assigned to each of the three goal orientation manipulation conditions. Of the 310 subjects used in the analyses, 109 were exposed to the mastery manipulation, 102 were exposed to the prove manipulation, and 99 were exposed to the avoid manipulation.

Positive vs. Negative Feedback Manipulation

Subjects were assigned the specific goal of performing at the 50th percentile (pilot data were collected to establish the 50th percentile—see Appendix B). As noted previously, subsequent to each trial subjects were given feedback indicating the magnitude and direction of their prediction error (e.g., "You predicted that the stock price would be $45.09. The actual stock price is $50.32. You underestimated the stock price by $5.23"). At the end of each block, subjects were told at which percentile they performed, followed by the statement "You met your goal" (positive feedback condition) for individuals who score at or above the 50th percentile or "You did not meet your goal" (negative feedback condition) for individuals who score below the 50th percentile. Approximately 57% of subjects received positive feedback after the first block (mastery: 58%, prove: 58%, avoid: 57%), 63% of subjects received positive feedback after the second block (mastery: 58%, prove: 68%, avoid: 63%), and 52% of subjects received positive feedback after the third block (mastery: 52%, prove: 53%, avoid: 51%).

Measures

State goal orientations. A 12-item survey was developed to assess individuals' state goal orientations. Specifically, four items assessed state mastery goal orientation—e.g., "I think that this task has the opportunity for me to develop new skills and

knowledge." Four items assessed state prove goal orientation—e.g., "I'm concerned about showing that I can perform better than others on this task." Finally, four items assessed state avoid goal orientation—e.g., "I'm concerned about letting others realize that I have low ability on this task." Nine of the items on this survey were adapted from VandeWalle's (1997) measure of trait goal orientations and the remaining three items were created specifically for this study. These items were measured on a 5-point Likert-type scale. Across the four administrations, alpha for the state mastery goal orientation scale ranged from .67 to .82; alpha for the state prove goal orientation scale ranged from .66 to .71; and alpha for the state avoid goal orientation scale ranged from .70 to .76. Individual items for these three scales were averaged to create three separate scale scores for each subject. (See Appendix C for exact wording of items.)

Trait goal orientations. A 13-item scale developed by VandeWalle (1997) was used to assess individuals' trait goal orientations. Specifically, five items assessed trait mastery goal orientation—e.g., "I often look for opportunities to develop new skills and knowledge." Four items assessed trait prove goal orientation—e.g., "I enjoy it when others are aware of how well I am doing." Finally, four items assessed trait avoid goal orientation—e.g., "I'm concerned about taking on a task at school if my performance would reveal that I had low ability." Alphas for these three scales have been reported as .88, .84, and .83, respectively (VandeWalle, 1997). Individuals' trait goal orientations were assessed twice throughout the experiment (i.e., beginning and end) so that the relative stability of traits vs. states could be examined. Across the two administrations in the current study, alpha for these three scales ranged from .72 to .86, .71 to .82, and .73 to .85, respectively. These items were measured on a 5-point Likert-type scale. Individual

items for these three scales were averaged to create three separate scale scores for each subject. (See Appendix D for exact wording of items.)

Self-efficacy. An 8-item survey (reported alpha = .95) developed by Kozlowski et al. (in press) was used to assess individuals' self-efficacy perceptions. An example item is "I can meet the challenges of this task." These items were measured on a 5-point Likert-type scale. Across the four administrations, alpha for this scale ranged from .91 to .96. Items for this scale were averaged to create a scale score for each subject. (See Appendix E for exact wording of items.)

Openness to experience. A 12-item subscale (reported alpha = .76) of the NEO Five Factor Inventory (Costa & McRae, 1992) was used to assess individuals' openness to experience. An example item is "Once I find the right way to do something, I stick to it." These items were measured on a 5-point Likert-type scale. Similar to goal orientations, individuals' levels of openness to experience were assessed twice throughout the experiment (i.e., beginning and end) so that the relative stability of traits vs. states could be examined. Due to importance of goals and performance in the current experiment, a differentiation between state and trait goal orientations was made whereas openness to experience was conceptualized simply as a trait rather than as a trait and state. Across the two administrations, alpha for this scale ranged from .71 to .72. Items for this scale were averaged to create a scale score for each subject. (See Appendix F for exact wording of items.)

Agreeableness. A 12-item subscale (reported alpha = .74) of the NEO Five Factor Inventory (Costa & McRae, 1992) was used to assess individuals' agreeableness. An example item is "I would rather cooperate with others than compete with them." These

items were measured on a 5-point Likert-type scale. Again, individuals' levels of agreeableness were assessed at the beginning and end of the experiment. Similar to openness to experience, agreeableness was conceptualized only as a trait due to the nature of the experiment. Across the two administrations, alpha for this scale ranged from .72 to .73. Items for this scale were averaged to create a scale score for each subject. (See Appendix G for exact wording of items.)

Self-monitoring. A 25-item survey developed by Snyder (1974) was used to assess individuals' level of self-monitoring. An example item is "My behavior is usually an expression of my true inner feelings, attitudes, and beliefs." The initial survey was measured on a true-false scale, and internal consistency reliability (KR-20) for the original scale has been reported as .70 (Snyder, 1974). In the current study, these items were measured on a 5-point Likert-type scale. As with the other traits in the current study (i.e., trait goal orientations, openness to experience, and agreeableness), individuals' levels of self-monitoring were assessed at the beginning and end of the experiment so that the relative stability of traits vs. states could be examined. Again, self-monitoring was conceptualized only as a trait due to the nature of the experiment. Across the both administrations, alpha for this scale ranged from .67 to .73. Items for this scale were averaged to create a scale score for each subject. (See Appendix H for exact wording of items.)

Performance evaluations. A 5-item survey was developed to assess the extent to which individuals evaluated their performance as a success vs. failure. An example item is "I think my performance on this task was a success." These items were measured on a 5-point Likert-type scale. Across the three administrations, alpha for this scale ranged

from .88 to .94. Items for this scale were averaged to create a scale score for each subject. (See Appendix I for exact wording of items.)

Affect. Two 5-item surveys were developed to assess individuals' levels of joy and distress. The first of these surveys assessed the extent to which individuals experienced joy upon reception of performance feedback, ranging from elation to depression—e.g., "I am excited about my performance on this task." The second survey assessed the extent to which individuals experienced distress in reaction to this feedback, ranging from relief to anxiety—e.g., "Thinking about my performance on this task makes me anxious." These items were assessed on a 5-point Likert-type scale. Across the three administrations, alpha for the joy scale ranged from .78 to .83, and alpha for the distress scale ranged from .59 to .65. Individual items for these two scales were averaged to create two separate scale scores for each subject. (See Appendix J for exact wording of items.)

Feedback believability. At the end of the study, a 5-item survey developed specifically for this study was administered to assess the extent to which subjects believed the normative performance feedback that was provided subsequent to each block. An example item is "I think that the feedback was an underestimate of my performance." These items were measured on a 5-point Likert-type scale. Alpha for this scale was .77. Items for this scale were averaged to create a scale score for each subject. (See Appendix K for exact wording of items.)

Demographics. In addition to the aforementioned variables of interest, demographic information regarding subjects' age, sex, year in school, major, grade point

average, ACT or SAT scores, and plans after graduation was also collected. (See Appendix L for exact wording of items.)

Procedure

After subjects provided their written consent to participate in the experiment (see Appendix M), they were asked to respond to the demographics, trait goal orientations, openness to experience, agreeableness, and self-monitoring surveys. Upon completion of these surveys, the experimenter read some instructions to the subjects as they followed along on their computer screens. These instructions included a general overview of the task as well as necessary information for performing the MCPL task. Also embedded in these instructions was one of the three goal orientation manipulations described earlier (see Appendix N for these instructions). Subjects were then be asked to complete the self-efficacy and state goal orientations surveys, followed by the first block of 15 trials. Subsequent to the first block, subjects received performance feedback (positive or negative) and were asked to respond to the performance evaluations, affect, self-efficacy, and state goal orientations surveys. Subjects then completed the second block of 15 trials, followed by another assessment of their performance evaluations, affect, self-efficacy and state goal orientations. After completing the surveys, subjects were asked to complete the third block of 15 trials, followed by a final assessment of their performance evaluations, affect, their self-efficacy, and state goal orientations. Subjects were debriefed completely (see Appendix O) and thanked for their participation.

RESULTS

Means, standard deviations, scale internal consistent reliabilities, and intercorrelations among the scales of interest are displayed in Table 1. For the remainder of the analyses, scores on the following scales were standardized ($M = 0$, $SD = 1$) for each administration: trait goal orientations, state goal orientations, self-efficacy, agreeableness, openness to experiences, self-monitoring, performance evaluations, joy, and distress.

Manipulation Checks

Positive vs. negative feedback. On average, subjects reported neutral attitudes ($M = 3.26$, $SD = .69$) toward the believability of the performance feedback given to them. In addition, as seen in Table 1, the feedback that subjects' received was positively related to the evaluations that they made regarding their performance (Block 1: $r = .52$, $p < .01$; Block 2: $r = .61$, $p < .01$; Block 3: $r = .54$, $p < .01$). Finally, subjects' responses to the believability index did not vary reliably as a function of goal orientation manipulation condition ($F(2, 307) = 0.58$, $p > .05$).

Goal orientation manipulation. Ideally, subjects' levels of state mastery, prove, and avoid goal orientations at Time 1 would have been highest when they received a mastery, prove, or avoid goal orientation manipulation (respectively). This, however, was not the case. Goal orientation manipulation condition did not have an effect on subjects' levels of state mastery ($F(2, 307) = 2.51$, $p > .05$), prove ($F(2, 307) = 0.32$, $p > .05$), or avoid goal orientation ($F(2, 307) = 0.14$, $p > .05$) at Time 1 or any other time period. These results suggest that the goal orientation manipulation failed.

Table 1

Means, Standard Deviations, and Intercorrelations Among Variables

Variable	M	SD	1	2	3	4	5	6	7
1. Trait mastery goal orientation (Time 1)	3.87	.43	(.72)						
2. Trait mastery goal orientation (Time 2)	3.65	.57	.49**	(.86)					
3. Trait prove goal orientation (Time 1)	3.45	.65	.03	.07	(.71)				
4. Trait prove goal orientation (Time 2)	3.16	.74	.04	.26**	.74**	(.82)			
5. Trait avoid goal orientation (Time 1)	2.79	.67	-.37**	-.24**	.31**	.30**	(.73)		
6. Trait avoid goal orientation (Time 2)	2.67	.78	-.33**	-.22**	.37**	.45**	.68**	(.85)	
7. State mastery goal orientation (Time 1)	3.57	.51	.38**	.44**	-.01	.06	-.24**	-.18**	(.67)
8. State mastery goal orientation (Time 2)	3.32	.65	.28**	.36**	-.02	.02	-.19**	-.19**	.61**
9. State mastery goal orientation (Time 3)	3.22	.72	.21**	.38**	-.03	.06	-.12*	-.13*	.58**
10. State mastery goal orientation (Time 4)	3.15	.78	.16**	.41**	-.06	.09	-.08	-.08	.56**
11. State prove goal orientation (Time 1)	2.96	.62	.12*	.11*	.52**	.59**	.25**	.38**	.12*
12. State prove goal orientation (Time 2)	2.78	.62	.03	.09	.48**	.59**	.27**	.44**	.11
13. State prove goal orientation (Time 3)	2.73	.67	.03	.12*	.39**	.56**	.28**	.45**	.09
14. State prove goal orientation (Time 4)	2.72	.69	0.00	.09	.36**	.56**	.24**	.47**	.09
15. State avoid goal orientation (Time 1)	2.65	.66	-.17**	-.09	.37**	.45**	.49**	.63**	-.04
16. State avoid goal orientation (Time 2)	2.50	.66	-.12*	-.05	.32**	.42**	.42**	.58**	-.02
17. State avoid goal orientation (Time 3)	2.52	.69	-.11*	-.11	.39**	.46**	.40**	.64**	.04
18. State avoid goal orientation (Time 4)	2.51	.71	-.07	-.07	.31**	.42**	.34**	.61**	0.00
19. Agreeableness (Time 1)	3.59	.44	.12*	.05	-.19**	-.17**	-.14*	-.12*	.12*
20. Agreeableness (Time 2)	3.54	.44	.17**	.16**	-.18**	-.17**	-.17**	-.18**	.13*
21. Openness to experiences (Time 1)	3.46	.46	.26**	.16**	0.00	.03	-.16**	-.06	0.00
22. Openness to experiences (Time 2)	3.39	.47	.27**	.22**	-.01	.02	-.16**	-.10	.06
23. Self-monitoring (Time 1)	3.09	.37	.05	.01	.31**	.31**	.09	.06	.06
24. Self-monitoring (Time 2)	3.08	.32	.01	-.02	.29**	.30**	.12*	.06	-.02

Note: Scale reliabilities are reported along the diagonal. * $p < .05$; ** $p < .01$

Table 1 (cont)

Variable	8	9	10	11	12	13	14	15	16	17	18
1											
2											
3											
4											
5											
6											
7											
8	(.72)										
9	.73**	(.79)									
10	.65**	.81**	(.82)								
11	.02	.06	.10	(.67)							
12	.15**	.20**	.20**	.70**	(.66)						
13	.13*	.26**	.27**	.65**	.79**	(.70)					
14	.06	.18**	.27**	.58**	.73**	.81**	(.71)				
15	-.07	.01	.06	.65**	.59**	.55**	.51**	(.70)			
16	0.00	.04	.10	.53**	.65**	.61**	.56**	.76**	(.72)		
17	-.01	.09	.11	.57**	.63**	.68**	.64**	.71**	.82**	(.73)	
18	-.02	.03	.10	.48**	.58**	.64**	.72**	.63**	.75**	.85**	(.76)
19	.01	0.00	.02	-.12*	-.10	-.14*	-.13*	-.03	-.08	-.10	-.06
20	.06	.04	.06	-.14*	-.11	-.17**	-.17**	-.06	-.12*	-.16**	-.12*
21	-.06	-.09	-.09	-.10	-.07	-.01	0.00	-.11*	-.13*	.07	-.04
22	-.03	-.07	-.05	0.00	-.07	-.03	-.04	-.10	-.14*	-.12*	-.11
23	.08	.04	.04	.19**	.18**	.21**	.17**	.05	.09	.09	.09
24	0.00	-.09	-.07	.15**	.15**	.14*	.11	.04	.04	.04	.06

Note: Scale reliabilities are reported along the diagonal. * $p < .05$; ** $p < .01$

Table 1 (cont)

Variable	19	20	21	22	23	24	25	26	27	28	29
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19	(.72)										
20	.89**	(.73)									
21	.13*	.13*	(.71)								
22	.18**	.19**	.90**	(.72)							
23	-.11*	-.08	.11*	.07	(.73)						
24	-.08	-.07	.12*	.11	.83**	(.67)					

Note: Scale reliabilities are reported along the diagonal. * $p < .05$; ** $p < .01$

Table 1 (cont)

Variable	M	SD	1	2	3	4	5	6	7
25. Self-efficacy (Time 1)	3.55	.56	.51**	.41**	.07	.13*	-.29**	-.24**	.38**
26. Self-efficacy (Time 2)	3.04	.77	.23**	.24**	.01	.10	-.22**	-.08	.18**
27. Self-efficacy (Time 3)	3.06	.87	.19**	.29**	.02	.10	-.16**	-.08	.20**
28. Self-efficacy (Time 4)	2.96	.90	.12*	.25**	-.02	.04	-.11*	-.08	.16**
29. Performance evaluations (Time 1)	2.57	.97	0.00	-.03	-.06	-.01	-.04	.04	-.12*
30. Performance evaluations (Time 2)	2.88	1.01	-.05	-.01	-.02	.04	.02	.07	-.04
31. Performance evaluations (Time 3)	2.79	.94	-.06	.03	-.09	-.03	0.00	.01	.02
32. Distress (Time 1)	3.21	.56	.03	-.01	-.05	-.01	-.06	-.01	-.08
33. Distress (Time 2)	3.26	.58	.11	.11*	0.00	.05	-.12*	-.11*	-.01
34. Distress (Time 3)	3.22	.55	.07	.11*	-.04	-.02	-.05	-.13*	0.00
35. Joy (Time 1)	3.03	.72	.03	-.07	-.12*	-.09	-.08	-.04	-.11
36. Joy (Time 2)	3.13	.71	.02	.03	-.01	.04	-.03	-.02	.02
37. Joy (Time 3)	3.04	.65	.01	.07	-.07	-.05	-.01	-.08	.05
38. Feedback (Time 1)[a]	-	-	.05	.03	.01	.12*	.01	.13*	-.03
39. Feedback (Time 2)	-	-	-.04	.03	-.01	.05	.03	.04	.01
40. Feedback (Time 3)	-	-	0.00	.06	-.05	-.08	0.00	-.05	0.00

[a] Feedback (Times 1-3): 0 = negative, 1 = positive. Note: Scale reliabilities are reported along the diagonal. * $p < .05$; ** $p < .01$

Table 1 (cont)

Variable	8	9	10	11	12	13	14	15	16	17	18
25	.37**	.31**	.30**	.17**	.13*	.09	.09	-.11	-.10	-.10	-.07
26	.33**	.32**	.31**	.13*	.23**	.21**	.22**	-.02	.01	.02	.05
27	.26**	.38**	.37**	.16**	.25**	.30**	.25**	.01	.01	.02	.03
28	.21**	.31**	.40**	.12*	.17**	.23**	.20**	-.02	-.02	-.02	-.01
29	.07	.08	.04	.01	.08	.11	.10	.07	.06	.06	.12*
30	-.07	.09	.10	.02	.08	.13*	.12*	.02	.05	-.02	.03
31	-.03	.06	.17**	-.03	0.00	.07	.05	-.03	-.05	-.08	-.07
32	.05	.05	.03	-.03	.02	.06	.03	-.01	-.06	-.09	0.00
33	-.02	.13*	.14*	-.04	.05	.06	.02	-.12*	-.08	-.17**	-.09
34	.06	.13*	.23**	-.09	-.04	.01	-.06	-.11	-.12*	-.17**	-.19**
35	.05	.04	.04	-.10	0.00	.01	.05	-.05	-.03	-.08	.03
36	0.00	.15**	.17**	-.02	.10	.11	.10	-.09	-.03	-.11	-.03
37	.08	.15**	.27**	-.05	.01	.06	.01	-.13*	-.11*	-.15**	-.15**
38	.05	.05	.05	.13*	.18**	.20**	.22**	.12*	.17**	.17**	.21**
39	-.07	.06	.06	.06	.13*	.15**	.12*	.05	.09	.03	.05
40	-.08	-.01	.02	.05	.05	.05	.02	.01	0.00	-.04	-.07

Note: Scale reliabilities are reported along the diagonal. * $p < .05$; ** $p < .01$

Table 1 (cont)

Variable	19	20	21	22	23	24	25	26	27	28	29
25	0.00	.08	.06	.07	.09	.06	(.91)				
26	-.02	-.01	-.02	-.01	.06	-.02	.53**	(.93)			
27	-.03	-.02	.03	.01	.06	-.02	.46**	.78**	(.95)		
28	-.04	-.02	.02	.01	.08	0.00	.38**	.69**	.84**	(.96)	
29	-.01	-.10	-.05	-.04	-.01	-.04	.02	.55**	.43**	.37**	(.94)
30	-.03	-.05	.04	0.00	-.04	-.06	.06	.30**	.55**	.47**	.40**
31	-.04	-.04	-.01	-.01	.01	-.03	.07	.27**	.39**	.56**	.28**
32	-.03	-.09	-.09	-.07	-.04	-.06	0.00	.39**	.35**	.33**	.61**
33	.02	.05	-.02	-.04	-.02	-.04	.14*	.35**	.53**	.45**	.29**
34	-.01	.03	-.10	-.08	.08	.02	.13*	.27**	.35**	.47**	.21**
35	-.06	-.12*	-.12*	-.14*	-.03	-.08	0.00	.50**	.37**	.35**	.73**
36	-.04	-.02	-.04	-.07	-.01	-.03	.11*	.32**	.52**	.46**	.29**
37	0.00	.02	-.08	-.10	.06	-.01	.09	.24**	.32**	.50**	.21**
38	-.09	-.13*	-.08	-.08	.02	-.03	.06	.34**	.27**	.17**	.52**
39	0.00	-.02	0.00	-.03	-.03	-.07	.04	.21**	.39**	.24**	.21**
40	.03	.01	-.01	.02	-.02	-.04	.05	.06	.13*	.29**	.04

Note: Scale reliabilities are reported along the diagonal. * $p < .05$; ** $p < .01$

Table 1 (cont)

Variable	30	31	32	33	34	35	36	37	38	39	40
25											
26											
27											
28											
29											
30	(.92)										
31	.52**	(.88)									
32	.34**	.28**	(.60)								
33	.60**	.40**	.53**	(.65)							
34	.34**	.55**	.44**	.63**	(.61)						
35	.34**	.24**	.73**	.42**	.36**	(.82)					
36	.75**	.41**	.44**	.77**	.49**	.46**	(.83)				
37	.40**	.68**	.34**	.50**	.77**	.41**	.55**	(.78)			
38	.17**	.05	.43**	.15*	.06	.48**	.18**	.04	-		
39	.61**	.20**	.20**	.38**	.13*	.17**	.48**	.14*	.30**	-	
40	.21**	.54**	.07	.18**	.30**	.02	.14*	.40**	.07	.26**	-

Note: Scale reliabilities are reported along the diagonal. * $p < .05$; ** $p < .01$

Independence of Goal Orientations

As shown in Table 1, the intercorrelations among goal orientations were moderately high. Specifically, intercorrelations among trait goal orientations at Time 1 ranged from -.37 to .31, trait goal orientations at Time 2 ranged from -.22 to .45, state goal orientations at Time 1 ranged from -.04 to .65, state goal orientations at Time 2 ranged from 0.00 to .65, state goal orientations at Time 3 ranged from .09 to .68, and state goal orientations at Time 4 ranged from .10 to .72. With the exception of trait goal orientations at Time 1, the correlation between prove and avoid goal orientations was strongest in all of the aforementioned ranges. The lack of independence among dependent variables poses a potential limitation to the interpretation of univariate results. This potential limitation will be explored further in the Discussion section of this paper.

Relative Stability of Traits vs. States

As noted, individuals' levels of trait goal orientations, openness to experience, agreeableness, and self-monitoring were assessed twice throughout the experiment (i.e., beginning and end) so that the relative stability of traits vs. states could be examined. Evidence of greater stability in trait measures (relative to state goal orientations) would provide justification for treating traits as traits (i.e., attributes that remain fairly stable across time) rather than as states (i.e., attributes that fluctuate across time). As listed in Table 1, test-retest reliability for the trait measures ranged from .49 to .90 ($\underline{M}$ = .75) whereas test-retest reliability for the state measures (i.e., first vs. last administration) ranged from .56 to .63 ($\underline{M}$ = .59). Whereas the lower-bounds of these ranges are equal ($\bar{Z}_2^*$ = -1.27, $\underline{p} > .05$), the upper-bounds are not equal ($\bar{Z}_2^*$ = 9.18, $\underline{p} < .01$) (Steiger,

1980). Thus, the traits assessed in the current study remained more stable than state goal orientations.

Trait Goal Orientations, Situational Influences, and State Goal Orientations

As shown in Figure 2, Hypothesis 1 proposed that the relationship between trait goal orientations and state goal orientations would be moderated by a goal orientation manipulation. Specifically, it was expected that as a particular trait goal orientation increased, the influence of an inconsistent goal orientation manipulation on the respective state goal orientation would decrease. For example, as an individual's trait mastery goal orientation increased, the influence of a prove or avoid goal orientation manipulation on subsequent state mastery goal orientation should decrease.

Three sets of hierarchical regression analyses (i.e., one set each for mastery, prove, and avoid goal orientation) were conducted to examine the proposed relationships. To model the main effect of the 3-level categorical variable representing manipulation condition (i.e., mastery, prove, or avoid manipulation), 2 dummy codes were created. These dummy codes were then multiplied by the respective trait goal orientation to examine their interactions. The results of these hierarchical regression analyses are described in detail below and summarized in Table 2.

Mastery goal orientation. Step 1 of the first set of hierarchical regression analyses consisted of state mastery goal orientation as the criterion variable and trait mastery goal orientation as the predictor variable ($R^2 = .1450$, $F(1, 308) = 52.22$, $p < .01$). Two dummy coded variables for the prove and avoid levels of the condition variable were added as predictor variables in Step 2. This model revealed a significant main effect of trait mastery goal orientation ($t(306) = 7.07$, $p < .01$); however, the addition of the two

Table 2

Summary of Hierarchical Regression Analyses for Trait Goal Orientations, Situational Influences, and State Goal Orientations

Model	β	R^2	ΔR^2	F
State Mastery Goal Orientation				
Step 1		.1450		52.22**
Trait mastery goal orientation	.375**			
Step 2		.1543	.0093	1.70
Prove goal orientation manipulation dummy code	-.195			
Avoid goal orientation manipulation dummy code	.015			
Step 3		.1595	.0052	0.93
Prove dummy code * Trait mastery goal orientation	.001			
Avoid dummy code * Trait mastery goal orientation	.149			
State Prove Goal Orientation				
Step 1		.2730		115.67**
Trait prove goal orientation	.523**			
Step 2		.2733	.0003	0.07
Mastery goal orientation manipulation dummy code	-.024			
Avoid goal orientation manipulation dummy code	.019			
Step 3		.2747	.0004	0.08
Mastery dummy code * Trait mastery goal orientation	-.012			
Avoid dummy code * Trait mastery goal orientation	-.046			
State Avoid Goal Orientation				
Step 1		.2413		97.93**
Trait avoid goal orientation	.492**			
Step 2		.2445	.0032	0.66
Mastery goal orientation manipulation dummy code	-.127			
Prove goal orientation manipulation dummy code	-.118			
Step 3		.2603	.0158	3.24*
Mastery dummy code * Trait mastery goal orientation	-.100			
Prove dummy code * Trait mastery goal orientation	-.310*			

* $p < .05$; ** $p < .01$

condition dummy codes did not reveal a significant main effect of condition (ΔR^2 = .0093, F (2, 306) = 1.70, $p > .05$). Finally, two product terms (i.e., the two dummy coded condition variables multiplied by trait mastery goal orientation) were added as predictor variables in Step 3. The addition of these interaction terms did not result in a significant increase in R^2 (ΔR^2 = .0052, F (2, 304) = 0.93, $p > .05$). Thus, condition did not moderate the relationship between trait mastery goal orientation and state mastery goal orientation.

Prove goal orientation. Step 1 of the second set of hierarchical regression analyses consisted of state prove goal orientation as the criterion variable and trait prove goal orientation as the predictor variable (R^2 = .2730, F (1, 308) = 115.67, $p < .01$). Two dummy coded variables for the mastery and avoid levels of the condition variable were added as predictor variables in Step 2. This model revealed a significant effect of trait prove goal orientation (t (306) = 10.69, $p < .01$); however, similar to the analyses on mastery goal orientation, the addition of the two dummy codes did not reveal a significant main effect of condition (ΔR^2 = .0003, F (2, 306) = 0.07, $p > .05$). Finally, two product terms (i.e., trait prove goal orientation multiplied by the two dummy codes from Step 2) were added as predictor variables in Step 3. Similar to the mastery goal orientation analyses, the addition of these interaction terms did not result in a significant increase in R^2 (ΔR^2 = .0004, F (2, 304) = 0.08, $p > .05$). Thus, condition did not moderate the relationship between trait prove goal orientation and state prove goal orientation.

Avoid goal orientation. Step 1 of the third set of hierarchical regression analyses conducted to examine Hypothesis 1 consisted of state avoid goal orientation as the

criterion variable and trait avoid goal orientation as the predictor variable (R^2 = .2413, F (1, 308) = 97.93, p < .01). Two dummy coded variables for the mastery and prove levels of the condition variable were added as predictor variables in Step 2. This model revealed a significant effect of trait avoid goal orientation (t (306) = 9.93, p < .01); however, the addition of the two dummy codes did not reveal a significant main effect of condition (ΔR^2 = .0032, F (2, 306) = 0.66, p > .05). Finally, two product terms (i.e., trait avoid goal orientation multiplied by the two dummy codes from Step 2) were added as predictor variables in Step 3. The addition of these interaction terms resulted in a significant increase in R^2 (ΔR^2 = .0158, F (2, 304) = 3.24, p < .05; see Figure 3). According to Hypothesis 1, state avoid goal orientation should be highest when trait avoid goal orientation is high and an avoid goal orientation manipulation is present. As seen in Figure 3, this was not the case, suggesting that this significant interaction could be the result of Type I error. Thus, Hypothesis 1 was not supported.

Trait Goal Orientations, Individual Differences, and State Goal Orientations

Hypothesis 2 predicted that individuals' levels of openness to experiences, agreeableness, and self-monitoring would moderate the relationship between trait goal orientations and state goal orientations. Specifically, this hypothesis proposed that as these individual difference variables increased the relationship between trait goal orientations and respective state goal orientations would decrease.

To analyze this hypothesis, three sets of hierarchical regression analyses (i.e., one set each for openness to experiences, agreeableness, and self-monitoring) were conducted with respect to mastery, prove, and avoid goal orientations. The results of these analyses

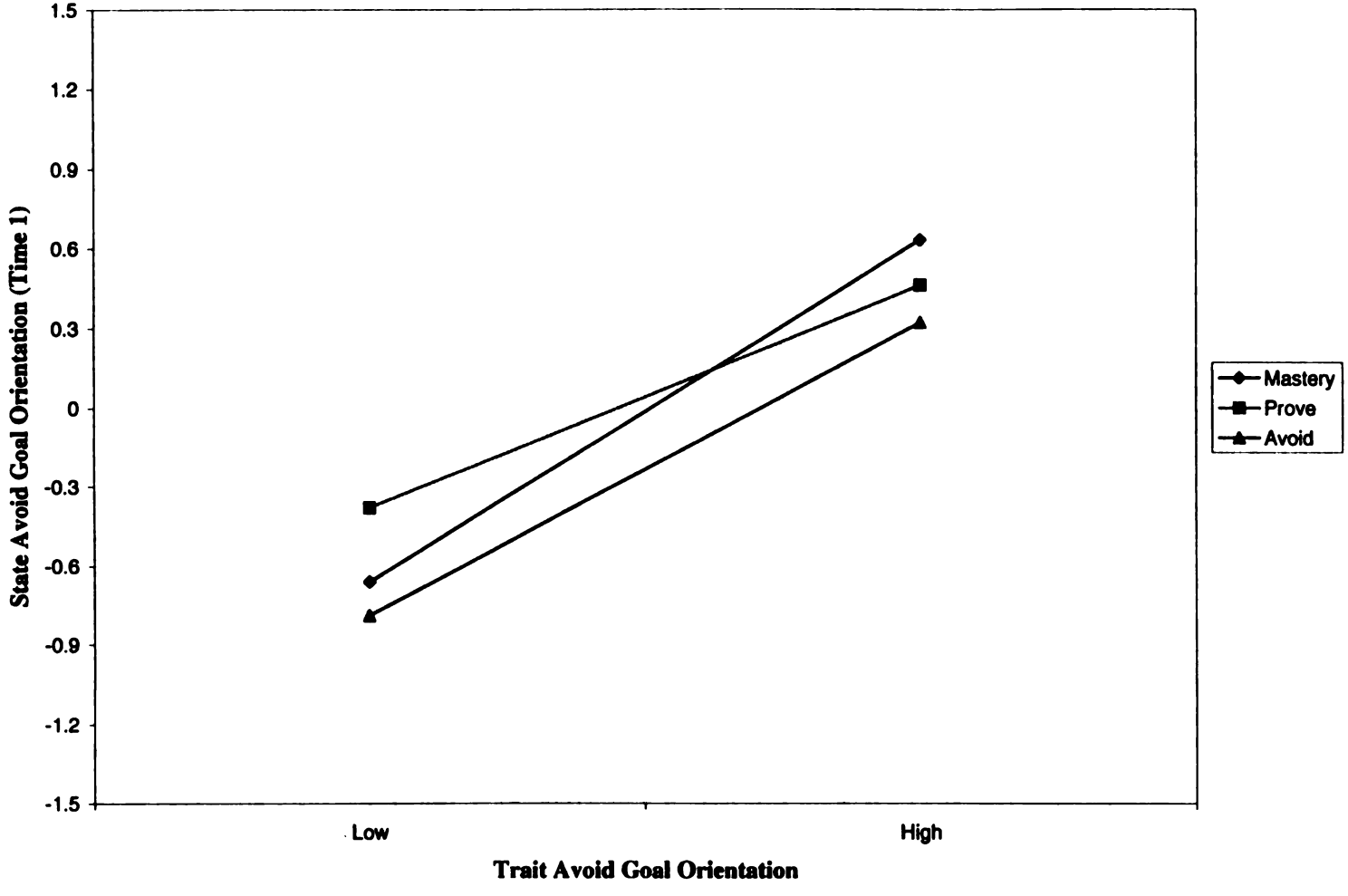


Figure 3. *Interaction between trait avoid goal orientation and goal orientation manipulation condition on state avoid goal orientation (Time 1)*

are described in detail below and are summarized in Tables 3-5 for mastery, prove, and avoid goal orientations, respectively.

Mastery goal orientation. Step 1 of the first set of hierarchical regression analyses for mastery goal orientation consisted of state mastery goal orientation as the criterion variable and trait mastery goal orientation and openness to experiences as predictor variables (R^2 = .1547, F (2, 307) = 28.08, p < .01). The results of this step revealed a significant main effect of trait mastery goal orientation (t (307) = 7.49, p < .01) but no effect of openness to experiences (t (307) = -1.88, p > .05). Adding a product term (i.e., trait mastery goal orientation multiplied by openness to experiences) to the model in Step 2 did not result in a significant increment in R^2 (ΔR^2 = .0053, F (1, 306) = 1.96, p > .05). Thus, openness to experiences did not moderate the relationship between trait mastery goal orientation and state mastery goal orientation.

Step 1 of the second set of hierarchical regression analyses for mastery goal orientation consisted of state mastery goal orientation as the criterion variable and trait mastery goal orientation and agreeableness as predictor variables (R^2 = .1503, F (2, 307) = 27.16, p < .01). The results of this step revealed a significant main effect of trait mastery goal orientation (t (307) = 7.03, p < .01) but no effect of agreeableness (t (307) = 1.39, p > .05). Adding an interaction term among these two variables to the model in Step 2 did not result in a significant increment in R^2 (ΔR^2 = .0030, F (1, 306) = 1.05, p > .05). Thus, agreeableness did not moderate the relationship between trait mastery goal orientation and state mastery goal orientation.

Finally, Step 1 of the third set of hierarchical regression analyses for mastery goal orientation consisted of state mastery goal orientation as the criterion variable and trait

Table 3

Summary of Hierarchical Regression Analyses for Trait Mastery Goal Orientation, Individual Differences, and State Mastery Goal Orientation

Model	β	R^2	ΔR^2	F
Openness to Experiences				
Step 1		.1547		28.08**
Trait mastery goal orientation	.401**			
Openness to experiences	-.100			
Step 2		.1600	.0053	1.96
Trait mastery goal orientation * Openness to experiences	-.066			
Agreeableness				
Step 1		.1503		27.16**
Trait mastery goal orientation	.367**			
Agreeableness	.072			
Step 2		.1533	.0030	1.05
Trait mastery goal orientation * Agreeableness	.050			
Self-Monitoring				
Step 1		.1469		26.43**
Trait mastery goal orientation	.373**			
Self-monitoring	.043			
Step 2		.1469	.0000	0.00
Trait mastery goal orientation * Self-monitoring	-.003			

* $p < .05$; ** $p < .01$

Table 4

Summary of Hierarchical Regression Analyses for Trait Prove Goal Orientation, Individual Differences, and State Prove Goal Orientation

Model	β	R^2	ΔR^2	F
Openness to Experiences				
Step 1		0.2734		57.75**
Trait prove goal orientation	.523**			
Openness to experiences	-.019			
Step 2		.2773	.0039	1.66
Trait prove goal orientation * Openness to experiences	.064			
Agreeableness				
Step 1		.2737		57.84**
Trait prove goal orientation	.518**			
Agreeableness	-.026			
Step 2		.2805	.0068	2.92
Trait prove goal orientation * Agreeableness	.087			
Self-Monitoring				
Step 1		.2743		58.01**
Trait prove goal orientation	.512**			
Self-monitoring	.037			
Step 2		.2764	.0021	0.88
Trait prove goal orientation * Self-monitoring	.041			

* $p < .05$; ** $p < .01$

Table 5

Summary of Hierarchical Regression Analyses for Trait Avoid Goal Orientation, Individual Differences, and State Avoid Goal Orientation

Model	β	R^2	ΔR^2	F
Openness to Experiences				
Step 1		.2425		49.14**
Trait avoid goal orientation	.486**			
Openness to experiences	-.036			
Step 2		.2460	.0035	1.42
Trait avoid goal orientation * Openness to experiences	-.061			
Agreeableness				
Step 1		.2426		49.17**
Trait avoid goal orientation	.497**			
Agreeableness	.037			
Step 2		.2483	.0057	2.34
Trait avoid goal orientation * Agreeableness	.070			
Self-Monitoring				
Step 1		.2413		48.82**
Trait avoid goal orientation	.491			
Self-monitoring	.007			
Step 2		.2460	.0047	1.88
Trait avoid goal orientation * Self-monitoring	-.064			

* $p < .05$; ** $p < .01$

mastery goal orientation and self-monitoring as predictor variables (R^2 = .1469, F (2, 307) = 26.43, p < .01). Similar to the previous analyses, the results of this step revealed a significant main effect of trait mastery goal orientation (t (307) = 7.18, p < .01) but no effect of self-monitoring (t (307) = 1.39, p > .05). Again, adding an interaction term among these two variables to the model in Step 2 did not result in a significant increment in R^2 (ΔR^2 = .0000, F (1, 306) = 0.00, p > .05). Thus, similar to openness to experiences and agreeableness, self-monitoring did not moderate the relationship between trait mastery goal orientation and state mastery goal orientation.

Prove goal orientation. Step 1 of the first set of hierarchical regression analyses for prove goal orientation consisted of state prove goal orientation as the criterion variable and trait prove goal orientation and openness to experiences as predictor variables (R^2 = .2734, F (2, 307) = 57.75, p < .01). The results of this step revealed a significant main effect of trait prove goal orientation (t (307) = 10.74, p < .01) but no effect of openness to experiences (t (307) = -.39, p > .05). Adding an interaction term among these two variables to the model in Step 2 did not result in a significant increment in R^2 (ΔR^2 = .0039, F (1, 306) = 1.66, p > .05). Thus, openness to experiences did not moderate the relationship between trait prove goal orientation and state prove goal orientation.

Step 1 of the second set of hierarchical regression analyses for prove goal orientation consisted of state prove goal orientation as the criterion variable and trait prove goal orientation and agreeableness as predictor variables (R^2 = .2737, F (2, 307) = 57.84, p < .01). The results of this step revealed a significant main effect of trait prove goal orientation (t (307) = 10.44, p < .01) but no effect of agreeableness (t (307) = -.53, p

> .05). Adding an interaction term among these two variables to the model in Step 2 did not result in a significant increment in R^2 (ΔR^2 = .0068, F (1, 306) = 1.71, p > .05). Thus, agreeableness did not moderate the relationship between trait prove goal orientation and state prove goal orientation.

Finally, Step 1 of the third set of hierarchical regression analyses for prove goal orientation consisted of state prove goal orientation as the criterion variable and trait prove goal orientation and self-monitoring as predictor variables (R^2 = .2743, F (2, 307) = 58.01, p < .01). The results of this step revealed a significant main effect of trait prove goal orientation (t (307) = 10.00, p < .01) but no effect of self-monitoring (t (307) = .73, p > .05). Adding an interaction term among these two variables to the model in Step 2 did not result in a significant increment in R^2 (ΔR^2 = .0021, F (1, 306) = 0.88, p > .05). Thus, similar to openness to experiences and agreeableness, self-monitoring did not moderate the relationship between trait and state prove goal orientation.

Avoid goal orientation. The analyses for avoid goal orientation were conducted in an identical manner as those for mastery and prove goal orientations. Specifically, Step 1 of the first set of analyses consisted of state avoid goal orientation as the criterion variable and trait avoid goal orientation and openness to experiences as predictor variables (R^2 = .2425, F (2, 307) = 49.14, p < .01). The results of this step revealed a significant main effect of trait avoid goal orientation (t (307) = 9.65, p < .01) but no effect of openness to experiences (t (307) = -.71, p > .05). Adding an interaction term among these two variables to the model in Step 2 did not result in a significant increment in R^2 (ΔR^2 = .0035, F (1, 306) = 1.42, p > .05). Thus, openness to experiences did not

moderate the relationship between trait avoid goal orientation and state avoid goal orientation.

Step 1 of the second set of hierarchical regression analyses for prove goal orientation consisted of state avoid goal orientation as the criterion variable and trait avoid goal orientation and agreeableness as predictor variables ($\underline{R}^2 = .2426$, $\underline{F}$ (2, 307) = 49.17, $\underline{p} < .01$). The results of this step revealed a significant main effect of trait avoid goal orientation ($\underline{t}$ (307) = 9.89, $\underline{p} < .01$) but no effect of agreeableness ($\underline{t}$ (307) = .74, $\underline{p} > .05$). Adding an interaction term among these two variables to the model in Step 2 did not result in a significant increment in R^2 ($\Delta\underline{R}^2 = .0057$, $\underline{F}$ (1, 306) = 2.34, $\underline{p} > .05$). Thus, agreeableness did not moderate the relationship between trait prove goal orientation and state prove goal orientation.

Finally, Step 1 of the third set of hierarchical regression analyses for avoid goal orientation consisted of state avoid goal orientation as the criterion variable and trait avoid goal orientation and self-monitoring as predictor variables ($\underline{R}^2 = .2413$, $\underline{F}$ (2, 307) = 48.82, $\underline{p} < .01$). Similar to previous analyses, the results of this step revealed a significant main effect of trait avoid goal orientation ($\underline{t}$ (307) = 9.82, $\underline{p} < .01$) but no effect of self-monitoring ($\underline{t}$ (307) = .13, $\underline{p} > .05$). Again, adding an interaction term among these two variables to the model in Step 2 did not result in a significant increment in R^2 ($\Delta\underline{R}^2 = .0047$, $\underline{F}$ (1, 306) = 1.88, $\underline{p} > .05$). Thus, none of the individual difference variables (i.e., openness to experiences, agreeableness, and self-monitoring) moderated the relationship between mastery, prove, or avoid trait and state goal orientations, and Hypothesis 2 was not supported.

Self-Efficacy and Initial State Goal Orientations

Hypothesis 3 proposed that self-efficacy would have a main effect on initial (i.e., Time 1) state goal orientations. Specifically, it was expected that as self-efficacy increased, state mastery and prove goal orientations would increase and state avoid goal orientation would decrease. As expected, self-efficacy at Time 1 was positively related to state mastery goal orientation ($r = .38$, $p < .01$) and state prove goal orientation ($r = .17$, $p < .01$) at Time 1 and negatively related to state avoid goal orientation at Time 1 ($r = -.11$, $p = .0561$). However, these correlations were significant only with respect to state mastery and prove goal orientations; the relationship between self-efficacy and state avoid goal orientation was marginal. Thus, Hypothesis 3 received partial support.

Self-Efficacy and Subsequent State Goal Orientations

Similar to Hypothesis 3, Hypothesis 10 proposed that self-efficacy would have a main effect on state goal orientations. Different from Hypothesis 3, however, the effects proposed by Hypothesis 10 stem from the dynamic nature of the operational model (see Figure 2). To test these effects, state goal orientations from the previous iteration of the cycle were partialled; thus, results reported with respect to Hypothesis 10 are based on Type I SS.

Mastery goal orientation. State mastery goal orientation at Time 2 was entered into a regression analysis as the criterion, and state mastery goal orientation at Time 1 and self-efficacy at Time 2 were entered as predictors. Results revealed that after partialling the effects of state mastery goal orientation at Time 1 ($t(307) = 14.10$, $p < .01$), self-efficacy at Time 2 had a significant main effect on state mastery goal orientation at Time 2 ($t(307) = 5.25$, $p < .01$).

Next, state mastery goal orientation at Time 3 was entered into a regression analysis as the criterion, and state mastery goal orientation at Time 2 and self-efficacy at Time 3 were entered as predictors. Results revealed that after partialling the effects of state mastery goal orientation at Time 2 (t (307) = 19.41, $p < .01$), self-efficacy at Time 3 had a significant main effect on state mastery goal orientation at Time 3 (t (307) = 5.14, $p < .01$).

Finally, state mastery goal orientation at Time 4 was entered into a regression analysis as the criterion, and state mastery goal orientation at Time 3 and self-efficacy at Time 4 were entered as predictors. Results revealed that after partialling the effects of state mastery goal orientation at Time 3 (t (307) = 24.88, $p < .01$), self-efficacy at Time 4 had a significant main effect on state mastery goal orientation at Time 4 (t (307) = 4.61, $p < .01$). Thus, with regard to state mastery goal orientation, the proposed effect of self-efficacy was observed at Times 2-4.

Prove goal orientation. State prove goal orientation at Time 2 was entered into a regression analysis as the criterion, and state prove goal orientation at Time 1 and self-efficacy at Time 2 were entered as predictors. Again, results revealed that after partialling the effects of state prove goal orientation at Time 1 (t (307) = 17.61, $p < .01$), self-efficacy at Time 2 had a significant main effect on state prove goal orientation at Time 2 (t (307) = 3.54, $p < .01$).

Next, state prove goal orientation at Time 3 was entered into a regression analysis as the criterion, and state prove goal orientation at Time 2 and self-efficacy at Time 3 were entered as predictors. Again, results revealed that after partialling the effects of state prove goal orientation at Time 2 (t (307) = 22.57, $p < .01$), self-efficacy at Time 3

had a significant main effect on state prove goal orientation at Time 3 (t (307) = 3.12, p < .01).

Finally, state prove goal orientation at Time 4 was entered into a regression analysis as the criterion, and state prove goal orientation at Time 3 and self-efficacy at Time 4 were entered as predictors. Contrary to expectations, results revealed that after partialling the effects of state prove goal orientation at Time 3 (t (307) = 23.88, p < .01), self-efficacy at Time 4 did not have a significant main effect on state prove goal orientation at Time 4 (t (307) = .28, p > .05). Thus, with regard to state prove goal orientation, the proposed effect of self-efficacy was observed at Times 2 and 3 but not Time 4.

Avoid goal orientation. State avoid goal orientation at Time 2 was entered into a regression analysis as the criterion, and state avoid goal orientation at Time 1 and self-efficacy at Time 2 were entered as predictors. Results revealed that after partialling the effects of state avoid goal orientation at Time 1 (t (307) = 20.50, p < .01), self-efficacy at Time 2 did not have a significant main effect on state avoid goal orientation at Time 2 (t (307) = .81, p > .05).

Next, state avoid goal orientation at Time 3 was entered into a regression analysis as the criterion, and state avoid goal orientation at Time 2 and self-efficacy at Time 3 were entered as predictors. Results revealed that after partialling the effects of state avoid goal orientation at Time 2 (t (307) = 25.02, p < .01), self-efficacy at Time 3 did not have a significant main effect on state avoid goal orientation at Time 3 (t (307) = .31, p > .05).

Finally, state avoid goal orientation at Time 4 was entered into a regression analysis as the criterion, and state avoid goal orientation at Time 3 and self-efficacy at Time 4 were entered as predictors. Results revealed that after partialling the effects of state avoid goal orientation at Time 3 (t (307) = 28.88, $p < .01$), self-efficacy at Time 4 did not have a significant main effect on state avoid goal orientation at Time 4 (t (307) = .15, $p > .05$). Thus, with regard to state avoid goal orientation, the proposed effects of self-efficacy were not observed at Times 2-4. Further, similar to Hypothesis 3, Hypothesis 10 received partial support.

State Goal Orientations, Feedback Sign, and Performance Evaluations

Hypothesis 4 predicted that state goal orientations and feedback sign would interact in their effects on individuals' performance evaluations. To analyze this hypothesis, three sets of hierarchical regression analyses (i.e., one set each for Time 1, Time 2, and Time 3) were conducted with respect to state mastery, prove, and avoid goal orientations. Further, for Times 2 and 3, performance evaluations from Times 1 and 2 (respectively) were partialled before proceeding with the analyses. The results of these analyses are described in detail below and are summarized in Tables 6-8 for mastery, prove, and avoid goal orientations, respectively.

Mastery goal orientation. With respect to mastery goal orientation, Hypothesis 4 predicted that as individuals' levels of state mastery goal orientation increased, positive feedback would lead to performance evaluations of success and negative feedback would lead to performance evaluations of neither success nor failure. Step 1 of the first set of hierarchical regression analyses for mastery goal orientation consisted of subjects' performance evaluations at Time 1 as the criterion, and state mastery goal orientation at

Table 6

Summary of Hierarchical Regression Analyses for State Mastery Goal Orientation, Feedback Sign, and Performance Evaluations

Model	β	R^2	ΔR^2	F
Time 1				
Step 1		.2801		59.72**
State mastery goal orientation	-.109*			
Feedback sign	1.041**			
Step 2		.2807	.0006	0.27
State mastery goal orientation * Feedback sign	-.051			
Time 2				
Step 1		.1624		59.74**
Performance evaluations (Time 1)	.404**			
Step 2		.4527	.2903	81.15**
State mastery goal orientation	-.051			
Feedback sign	1.127**			
Step 3		.4528	.0001	0.04
State mastery goal orientation * Feedback sign	-.017			
Time 3				
Step 1		.2696		113.70**
Performance evaluations (Time 2)	.519**			
Step 2		.4615	.1919	54.52**
State mastery goal orientation	.031			
Feedback sign	.898**			
Step 3		.4616	.0001	0.06
State mastery goal orientation * Feedback sign	.022			

* $p < .05$; ** $p < .01$

Table 7

Summary of Hierarchical Regression Analyses for State Prove Goal Orientation, Feedback Sign, and Performance Evaluations

Model	β	R^2	ΔR^2	F
Time 1				
Step 1		.2716		57.23**
State prove goal orientation	-.056			
Feedback sign	1.062**			
Step 2		.2719	.0003	0.14
State prove goal orientation * Feedback sign	.034			
Time 2				
Step 1		.1624		59.74**
Performance evaluations (Time 2)	.404**			
Step 2		.4504	.2880	80.17**
State prove goal orientation	-.014			
Feedback sign	1.139**			
Step 3		.4533	.0029	1.61
State prove goal orientation * Feedback sign	.111			
Time 3				
Step 1		.2696		113.70**
Performance evaluations (Time 2)	.519**			
Step 2		.4609	.1913	54.29**
State prove goal orientation	-.014			
Feedback sign	.897**			
Step 3		.4670	.0061	3.50
State prove goal orientation * Feedback sign	.166			

* $p < .05$; ** $p < .01$

Table 8

Summary of Hierarchical Regression Analyses for State Avoid Goal Orientation, Feedback Sign, and Performance Evaluations

Model	β	R^2	ΔR^2	F
Time 1				
Step 1		.2685		56.25**
State avoid goal orientation	.001			
Feedback sign	1.047**			
Step 2		.2725	.0040	1.66
State avoid goal orientation * Feedback sign	.130			
Time 2				
Step 1		.1624		59.74**
Performance evaluations (Time 1)	.404**			
Step 2		.4505	.2881	80.22**
State avoid goal orientation	-.018			
Feedback sign	1.139**			
Step 3		.4518	.0013	0.71
State avoid goal orientation * Feedback sign	.074			
Time 3				
Step 1		.2696		113.70**
Performance evaluations (Time 2)	.519**			
Step 2		.4634	.1938	55.26**
State avoid goal orientation	-.055			
Feedback sign	.892**			
Step 3		.4649	.0015	0.85
State avoid goal orientation * Feedback sign	.080			

* $p < .05$; ** $p < .01$

Time 1 and feedback sign at Time 1 as predictors (R^2 = .2801, F (2, 307) = 59.72, p < .01). The results of this step revealed significant main effects of state mastery goal orientation (t (307) = -2.22, p < .05) and feedback sign (t (307) = 10.63, p < .01). Adding an interaction term among these two variables to the model in Step 2 did not result in a significant increment in R^2 (ΔR^2 = .0006, F (1, 306) = 0.27, p > .05).

Step 1 of the second set of hierarchical regression analyses for mastery goal orientation consisted of subjects' performance evaluations at Time 2 as the criterion and their performance evaluations at Time 1 as the predictor (R^2 = .1624, F (1, 308) = 59.74, p < .01). Next, state mastery goal orientation at Time 2 and feedback sign at Time 2 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign (t (306) = 12.54, p < .01) but no effect of state mastery goal orientation (t (306) = -1.19, p > .05). Further, the addition of an interaction term among state mastery goal orientation and feedback sign to the model in Step 3 did not result in a significant increment in R^2 (ΔR^2 = .0001, F (1, 305) = 0.04, p > .05).

Finally, Step 1 of the third set of hierarchical regression analyses for mastery goal orientation consisted of subjects' performance evaluations at Time 3 as the criterion and their performance evaluations at Time 2 as the predictor (R^2 = .2696, F (1, 308) = 113.70, p < .01). Next, state mastery goal orientation at Time 3 and feedback sign at Time 3 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign (t (306) = 10.44, p < .01) but no effect of state mastery goal orientation (t (306) = 0.03, p > .05). Again, the addition of an interaction term among state mastery goal orientation and feedback sign to the model in Step 3 did not result in a significant increment in R^2 (ΔR^2 = .0001, F (1, 305) = 0.06, p > .05). Thus,

the hypothesized interaction between state mastery goal orientation and feedback sign was not observed at Times 1, 2, or 3.

Prove goal orientation. With respect to prove goal orientation, Hypothesis 4 predicted that as individuals' levels of state prove goal orientation increased, positive feedback would lead to performance evaluations of success and negative feedback would lead to performance evaluations of failure. Step 1 of the first set of hierarchical regression analyses for prove goal orientation consisted of subjects' performance evaluations at Time 1 as the criterion, and state prove goal orientation at Time 1 and feedback sign at Time 1 as predictors ($R^2 = .2716$, F (2, 307) = 57.23, $p < .01$). The results of this step revealed a significant main effect of feedback sign (t (307) = 10.70, $p < .01$) but no effect of state prove goal orientation (t (307) = -1.13, $p > .05$). Adding an interaction term among these two variables to the model in Step 2 did not result in a significant increment in R^2 ($\Delta R^2 = .0003$, F (1, 306) = 0.14, $p > .05$).

Step 1 of the second set of hierarchical regression analyses for prove goal orientation consisted of subjects' performance evaluations at Time 2 as the criterion and their performance evaluations at Time 1 as the predictor ($R^2 = .1624$, F (1, 308) = 59.74, $p < .01$). Next, state prove goal orientation at Time 2 and feedback sign at Time 2 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign (t (306) = 12.61, $p < .01$) but no effect of state prove goal orientation (t (306) = -0.33, $p > .05$). Further, the addition of an interaction term among state prove goal orientation and feedback sign to the model in Step 3 did not result in a significant increment in R^2 ($\Delta R^2 = .0029$, F (1, 305) = 1.61, $p > .05$).

Finally, Step 1 of the third set of hierarchical regression analyses for prove goal orientation consisted of subjects' performance evaluations at Time 3 as the criterion and their performance evaluations at Time 2 as the predictor (R^2 = .2696, F (1, 308) = 113.70, p < .01). Next, state prove goal orientation at Time 3 and feedback sign at Time 3 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign (t (306) = 10.42, p < .01) but no effect of state prove goal orientation (t (306) = -0.30, p > .05). The addition of an interaction term among state prove goal orientation and feedback sign to the model in Step 3 resulted in a marginally significant increment in R^2 (ΔR^2 = .0061, F (1, 305) = 3.50, p = .0620). As seen in Figure 4, with an increase in state prove goal orientation positive feedback led to performance evaluations of success and negative feedback led to performance evaluations of failure, as hypothesized. Thus, the hypothesized interaction between state prove goal orientation and feedback sign was not observed at Times 1 or 2, but it was marginally significant and in the correct direction at Time 3.

Avoid goal orientation. Similar to prove goal orientation, Hypothesis 4 predicted that as individuals' levels of state avoid goal orientation increased, positive feedback would lead to performance evaluations of success and negative feedback would lead to performance evaluations of failure. Step 1 of the first set of hierarchical regression analyses for avoid goal orientation consisted of subjects' performance evaluations at Time 1 as the criterion, and state avoid goal orientation at Time 1 and feedback sign at Time 1 as predictors (R^2 = .2685, F (2, 307) = 56.35, p < .01). The results of this step revealed a significant main effect of feedback sign (t (307) = 10.53, p < .01) but no effect of state avoid goal orientation (t (307) = 0.02, p > .05). Adding an interaction term

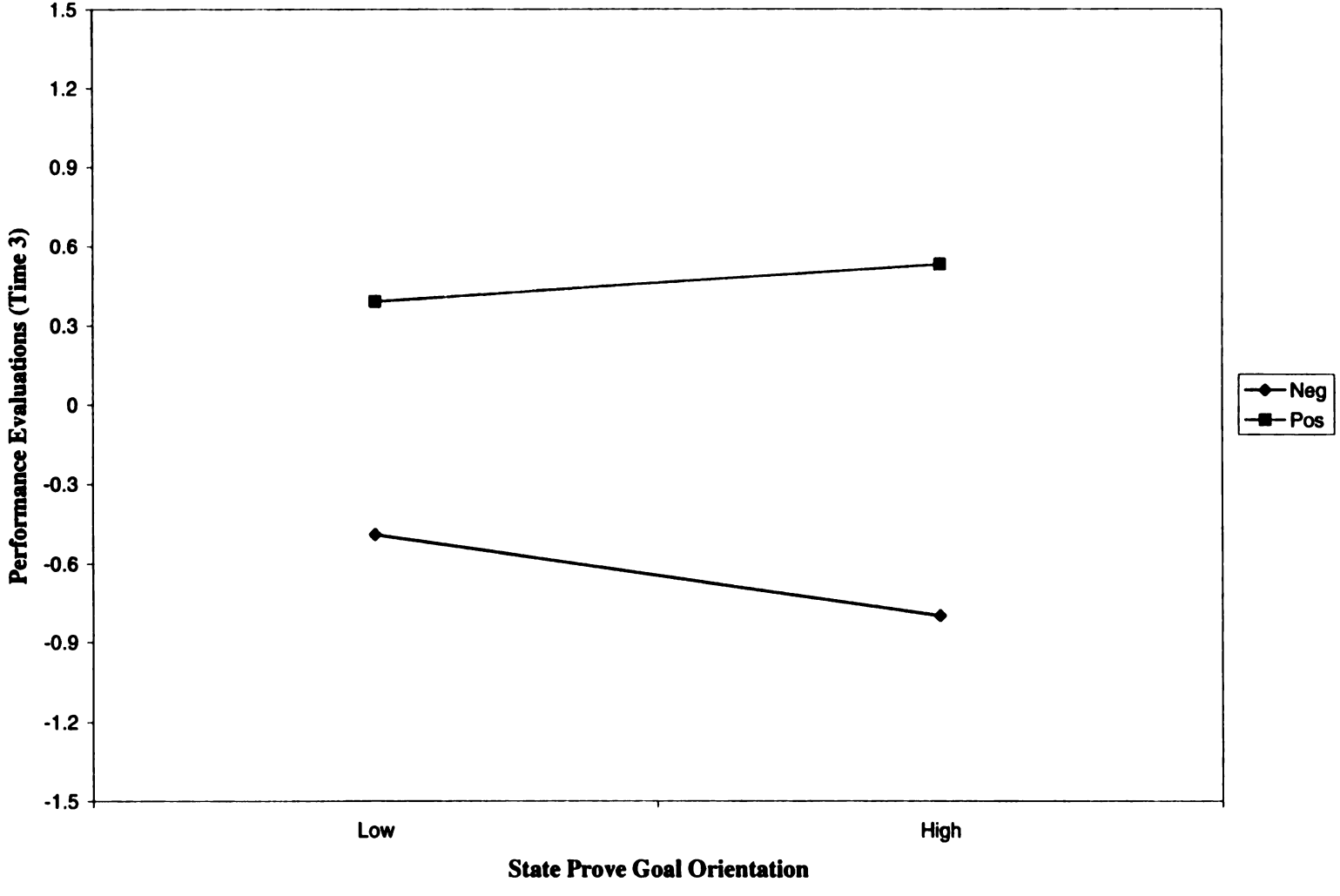


Figure 4. *Interaction between state prove goal orientation and feedback sign on performance evaluations (Time 3)*

among these two variables to the model in Step 2 did not result in a significant increment in R^2 ($\Delta R^2 = .0004$, $F(1, 306) = 1.66$, $p > .05$).

Step 1 of the second set of hierarchical regression analyses for avoid goal orientation consisted of subjects' performance evaluations at Time 2 as the criterion and their performance evaluations at Time 1 as the predictor ($R^2 = .1624$, $F(1, 308) = 59.74$, $p < .01$). Next, state avoid goal orientation at Time 2 and feedback sign at Time 2 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign ($t(306) = 12.65$, $p < .01$) but no effect of state avoid goal orientation ($t(306) = -0.43$, $p > .05$). Further, the addition of an interaction term among state avoid goal orientation and feedback sign to the model in Step 3 did not result in a significant increment in R^2 ($\Delta R^2 = .0013$, $F(1, 305) = 0.71$, $p > .05$).

Finally, Step 1 of the third set of hierarchical regression analyses for avoid goal orientation consisted of subjects' performance evaluations at Time 3 as the criterion and their performance evaluations at Time 2 as the predictor ($R^2 = .2696$, $F(1, 308) = 113.70$, $p < .01$). Next, state avoid goal orientation at Time 3 and feedback sign at Time 3 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign ($t(306) = 10.38$, $p < .01$) but no effect of state avoid goal orientation ($t(306) = -1.25$, $p > .05$). Again, the addition of an interaction term among state avoid goal orientation and feedback sign to the model in Step 3 did not result in a significant increment in R^2 ($\Delta R^2 = .0015$, $F(1, 305) = 0.85$, $p > .05$). Thus, the hypothesized interaction between state avoid goal orientation and feedback sign was not observed at Times 1, 2, or 3. Further, collapsing across all three goal orientations, Hypothesis 4 received only partial support (i.e., the marginal interaction between state

prove goal orientation and feedback sign in their effects on performance evaluations at Time 3).

Trait Goal Orientations, Feedback Sign, and Performance Evaluations

Similar to Hypothesis 4 with respect to state goal orientations, Hypothesis 5 predicted that trait goal orientations and feedback sign would interact in their effects on individuals' performance evaluations. To analyze this hypothesis, three sets of hierarchical regression analyses (i.e., one set each for Time 1, Time 2, and Time 3) were conducted with respect to trait mastery, prove, and avoid goal orientations. Further, for Times 2 and 3, performance evaluations from Times 1 and 2 (respectively) were partialled before proceeding with the analyses. The results of these analyses are described in detail below and are summarized in Tables 9-11 for mastery, prove, and avoid goal orientations, respectively.

Mastery goal orientation. With respect to mastery goal orientation, Hypothesis 5 predicted that as individuals' levels of trait mastery goal orientation increased, positive feedback would lead to performance evaluations of success and negative feedback would lead to performance evaluations of neither success nor failure. Step 1 of the first set of hierarchical regression analyses for mastery goal orientation consisted of subjects' performance evaluations at Time 1 as the criterion, and trait mastery goal orientation at Time 1 and feedback sign at Time 1 as predictors ($R^2 = .2693$, $F(2, 307) = 56.58$, $p < .01$). The results of this step revealed a significant main effect of feedback sign ($t(307) = 10.64$, $p < .01$) but no effect of trait mastery goal orientation ($t(307) = -0.57$, $p > .05$). Adding an interaction term among these two variables to the model in Step 2 did not result in a significant increment in R^2 ($\Delta R^2 = .0007$, $F(1, 306) = 0.30$, $p > .05$).

Table 9

Summary of Hierarchical Regression Analyses for Trait Mastery Goal Orientation, Feedback Sign, and Performance Evaluations

Model	β	R^2	ΔR^2	F
Time 1				
Step 1		.2693		56.58**
Trait mastery goal orientation	-.028			
Feedback sign	1.050**			
Step 2		.2700	.0007	0.30
Trait mastery goal orientation * Feedback sign	-.055			
Time 2				
Step 1		.1624		59.74**
Performance evaluations (Time 1)	.404**			
Step 2		.4510	.2886	80.43**
Trait mastery goal orientation	-.029			
Feedback sign	1.134**			
Step 3		.4511	.0001	0.05
Trait mastery goal orientation * Feedback sign	.020			
Time 3				
Step 1		.2696		113.70**
Performance evaluations (Time 2)	.519**			
Step 2		.4623	.1927	54.83**
Trait mastery goal orientation	-.041			
Feedback sign	.897**			
Step 3		.4624	.0001	0.04
Trait mastery goal orientation * Feedback sign	-.018			

* $p < .05$; ** $p < .01$

Table 10

Summary of Hierarchical Regression Analyses for Trait Prove Goal Orientation, Feedback Sign, and Performance Evaluations

Model	β	R^2	ΔR^2	F
Time 1				
Step 1		.2727		57.54**
Trait prove goal orientation	-.064			
Feedback sign	1.049**			
Step 2		.2799	.0072	3.06
Trait prove goal orientation * Feedback sign	.171			
Time 2				
Step 1		.1624		59.74**
Performance evaluations (Time 2)	.404**			
Step 2		.4502	.2878	80.09**
Trait prove goal orientation	.001			
Feedback sign	1.136**			
Step 3		.4599	.0097	5.48*
Trait prove goal orientation * Feedback sign	.208*			
Time 3				
Step 1		.2696		113.70**
Performance evaluations (Time 2)	.519**			
Step 2		.4643	.1947	55.61**
Trait prove goal orientation	-.060			
Feedback sign	.891**			
Step 3		.4837	.0194	11.49**
Trait prove goal orientation * Feedback sign	.282**			

* $p < .05$; ** $p < .01$

Table 11

Summary of Hierarchical Regression Analyses for Trait Avoid Goal Orientation, Feedback Sign, and Performance Evaluations

Model	β	R^2	ΔR^2	F
Time 1				
Step 1		.2704		56.90**
Trait avoid goal orientation	-.043			
Feedback sign	1.05**			
Step 2		.2831	.0127	5.43*
Trait avoid goal orientation * Feedback sign	.228*			
Time 2				
Step 1		.1624		59.74**
Performance evaluations (Time 1)	.404**			
Step 2		.4504	.2880	80.17**
Trait avoid goal orientation	.015			
Feedback sign	1.135**			
Step 3		.4601	.0097	5.48*
Trait avoid goal orientation * Feedback sign	.207*			
Time 3				
Step 1		.2696		113.70**
Performance evaluations (Time 2)	.519**			
Step 2		.4608	.1912	54.25**
Trait avoid goal orientation	-.009			
Feedback sign	.896**			
Step 3		.4673	.0065	3.72
Trait avoid goal orientation * Feedback sign	.163			

* $p < .05$; ** $p < .01$

Step 1 of the second set of hierarchical regression analyses for mastery goal orientation consisted of subjects' performance evaluations at Time 2 as the criterion and their performance evaluations at Time 1 as the predictor ($R^2 = .1624$, F (1, 308) = 59.74, $p < .01$). Next, trait mastery goal orientation at Time 2 and feedback sign at Time 2 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign (t (306) = 12.63, $p < .01$) but no effect of trait mastery goal orientation (t (306) = -0.68, $p > .05$). Further, the addition of an interaction term among trait mastery goal orientation and feedback sign to the model in Step 3 did not result in a significant increment in R^2 ($\Delta R^2 = .0001$, F (1, 305) = 0.05, $p > .05$).

Finally, Step 1 of the third set of hierarchical regression analyses for mastery goal orientation consisted of subjects' performance evaluations at Time 3 as the criterion and their performance evaluations at Time 2 as the predictor ($R^2 = .2696$, F (1, 308) = 113.70, $p < .01$). Next, trait mastery goal orientation at Time 3 and feedback sign at Time 3 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign (t (306) = 10.43, $p < .01$) but no effect of trait mastery goal orientation (t (306) = -0.97, $p > .05$). Again, the addition of an interaction term among trait mastery goal orientation and feedback sign to the model in Step 3 did not result in a significant increment in R^2 ($\Delta R^2 = .0001$, F (1, 305) = 0.04, $p > .05$). Thus, the hypothesized interaction between trait mastery goal orientation and feedback sign was not observed at Times 1, 2, or 3.

Prove goal orientation. With respect to prove goal orientation, Hypothesis 5 predicted that as individuals' levels of trait prove goal orientation increased, positive feedback would lead to performance evaluations of success and negative feedback would

lead to performance evaluations of failure. Step 1 of the first set of hierarchical regression analyses for prove goal orientation consisted of subjects' performance evaluations at Time 1 as the criterion, and trait prove goal orientation at Time 1 and feedback sign at Time 1 as predictors (R^2 = .2727, F (2, 307) = 57.54, p < .01). The results of this step revealed a significant main effect of feedback sign (t (307) = 10.66, p < .01) but no effect of trait prove goal orientation (t (307) = -1.32, p > .05). Adding an interaction term among these two variables to the model in Step 2 did not result in a significant increment in R^2 (ΔR^2 = .0072, F (1, 306) = 3.06, p > .05).

Step 1 of the second set of hierarchical regression analyses for prove goal orientation consisted of subjects' performance evaluations at Time 2 as the criterion and their performance evaluations at Time 1 as the predictor (R^2 = .1624, F (1, 308) = 59.74, p < .01). Next, trait prove goal orientation at Time 2 and feedback sign at Time 2 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign (t (306) = 12.65, p < .01) but no effect of trait prove goal orientation (t (306) = 0.03, p > .05). The addition of an interaction term among trait prove goal orientation and feedback sign to the model in Step 3 resulted in a significant increment in R^2 (ΔR^2 = .0097, F (1, 305) = 5.48, p < .05). As predicted by Hypothesis 5, with an increase in trait prove goal orientation positive feedback led to performance evaluations of success and negative feedback led to performance evaluations of failure (see Figure 5).

Finally, Step 1 of the third set of hierarchical regression analyses for prove goal orientation consisted of subjects' performance evaluations at Time 3 as the criterion and their performance evaluations at Time 2 as the predictor (R^2 = .2696, F (1, 308) = 113.70,

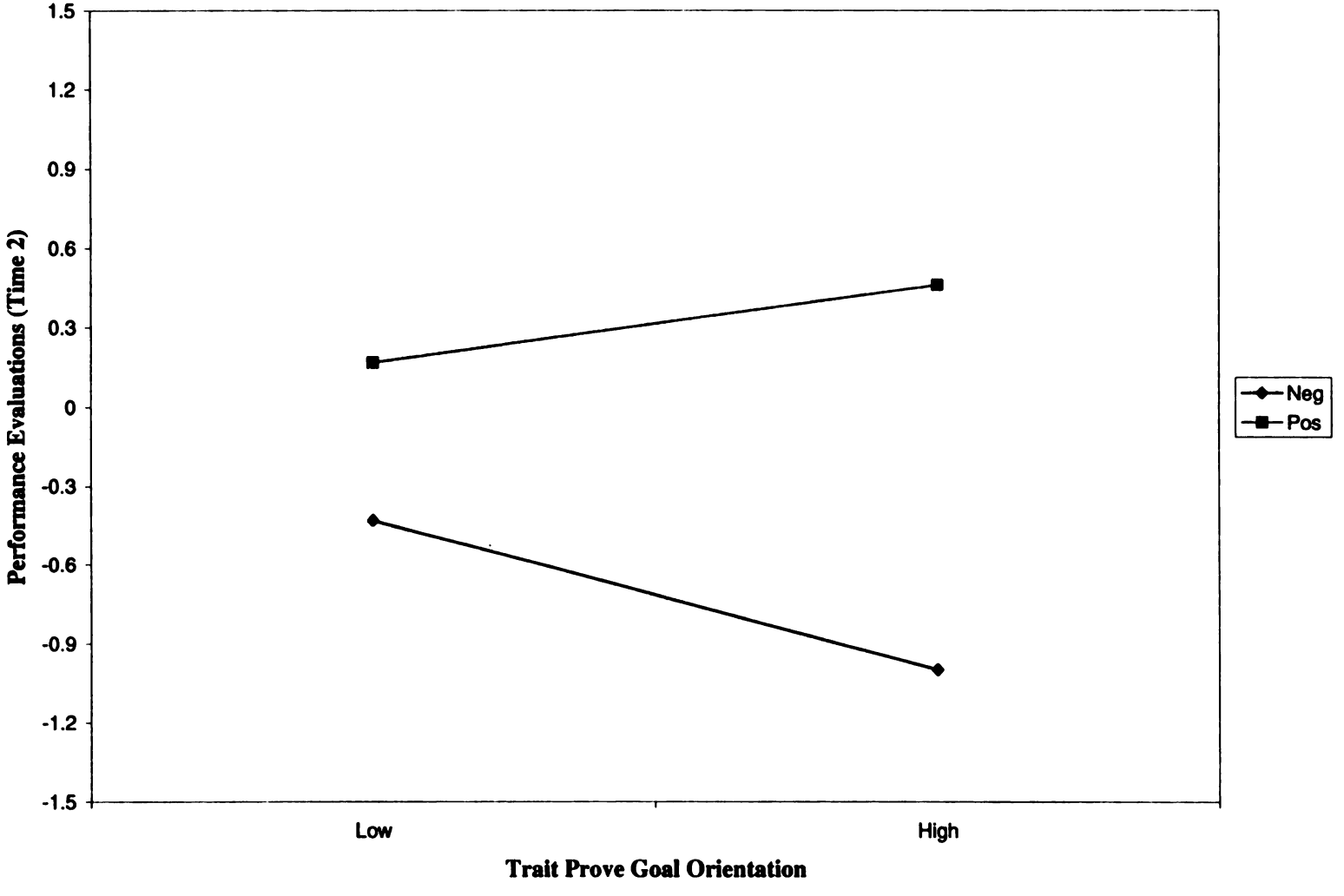


Figure 5. *Interaction between trait prove goal orientation and feedback sign on performance evaluations (Time 2)*

$p < .01$). Next, trait prove goal orientation at Time 3 and feedback sign at Time 3 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign (t (306) = 10.38, $p < .01$) but no effect of trait prove goal orientation (t (306) = -1.43, $p > .05$). Again, the addition of an interaction term among trait prove goal orientation and feedback sign to the model in Step 3 resulted in a significant increment in R^2 ($\Delta R^2 = .0230$, F (1, 305) = 11.49, $p < .01$). As seen in Figure 6, performance evaluations in response to positive feedback remained relatively stable regardless of trait prove goal orientation. However, as predicted, increases in trait prove goal orientation led to performance evaluations of failure when subjects received negative feedback. Thus, the hypothesized interaction between trait prove goal orientation and feedback sign was observed at Times 2 and 3 (partially), but not at Time 1.

Avoid goal orientation. Similar to prove goal orientation, Hypothesis 5 predicted that as individuals' levels of trait avoid goal orientation increased, positive feedback would lead to performance evaluations of success and negative feedback would lead to performance evaluations of failure. Step 1 of the first set of hierarchical regression analyses for avoid goal orientation consisted of subjects' performance evaluations at Time 1 as the criterion, and trait avoid goal orientation at Time 1 and feedback sign at Time 1 as predictors ($R^2 = .2704$, F (2, 307) = 56.90, $p < .01$). The results of this step revealed a significant main effect of feedback sign (t (307) = 10.64, $p < .01$) but no effect of trait avoid goal orientation (t (307) = -0.89, $p > .05$). Adding an interaction term among these two variables to the model in Step 2 resulted in a significant increment in R^2 ($\Delta R^2 = .0127$, F (1, 306) = 5.43, $p < .05$). As predicted, as trait avoid goal orientation

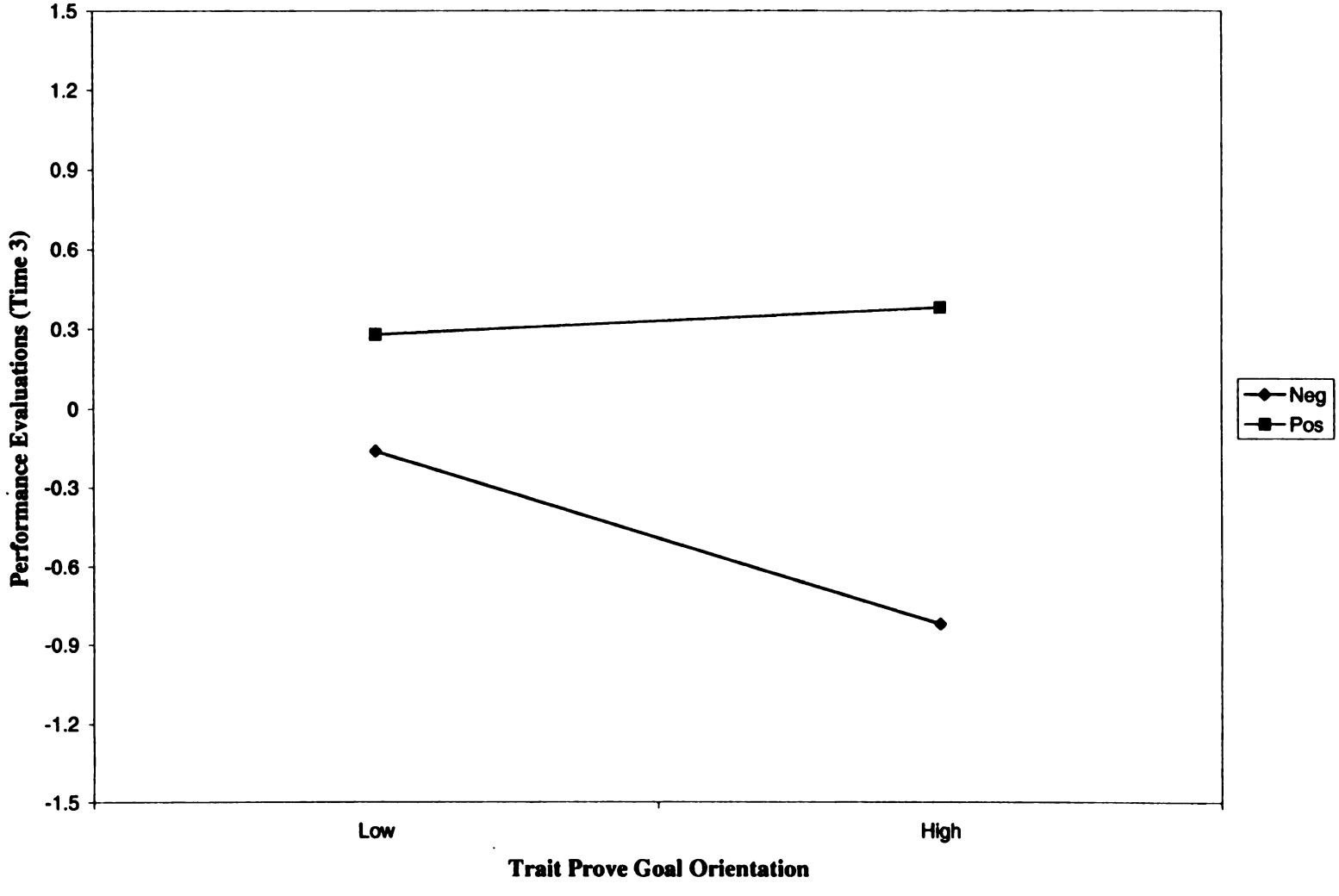


Figure 6. *Interaction between trait prove goal orientation and feedback sign on performance evaluations (Time 3)*

increased positive feedback led to performance evaluations of success and negative feedback led to performance evaluations of failure (see Figure 7). Step 1 of the second set of hierarchical regression analyses for avoid goal orientation consisted of subjects' performance evaluations at Time 2 as the criterion and their performance evaluations at Time 1 as the predictor ($\underline{R}^2 = .1624$, $\underline{F}\ (1, 308) = 59.74$, $\underline{p} < .01$). Next, trait avoid goal orientation at Time 2 and feedback sign at Time 2 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign ($\underline{t}\ (306) = 12.63$, $\underline{p} < .01$) but no effect of trait avoid goal orientation ($\underline{t}\ (306) = 0.36$, $\underline{p} > .05$). Further, the addition of an interaction term among trait avoid goal orientation and feedback sign to the model in Step 3 resulted in a significant increment in R^2 ($\Delta\underline{R}^2 = .0097$, $\underline{F}\ (1, 305) = 5.48$, $\underline{p} < .05$). As hypothesized, as trait avoid goal orientation increased positive feedback led to performance evaluations of success and negative feedback led to performance evaluations of failure (see Figure 8).

Finally, Step 1 of the third set of hierarchical regression analyses for avoid goal orientation consisted of subjects' performance evaluations at Time 3 as the criterion and their performance evaluations at Time 2 as the predictor ($\underline{R}^2 = .2696$, $\underline{F}\ (1, 308) = 113.70$, $\underline{p} < .01$). Next, trait avoid goal orientation at Time 3 and feedback sign at Time 3 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign ($\underline{t}\ (306) = 10.41$, $\underline{p} < .01$) but no effect of trait avoid goal orientation ($\underline{t}\ (306) = -0.22$, $\underline{p} > .05$). Further, the addition of an interaction term among trait avoid goal orientation and feedback sign to the model in Step 3 resulted in a marginally significant increment in R^2 ($\Delta\underline{R}^2 = .0065$, $\underline{F}\ (1, 305) = 3.72$, $\underline{p} = .0540$).

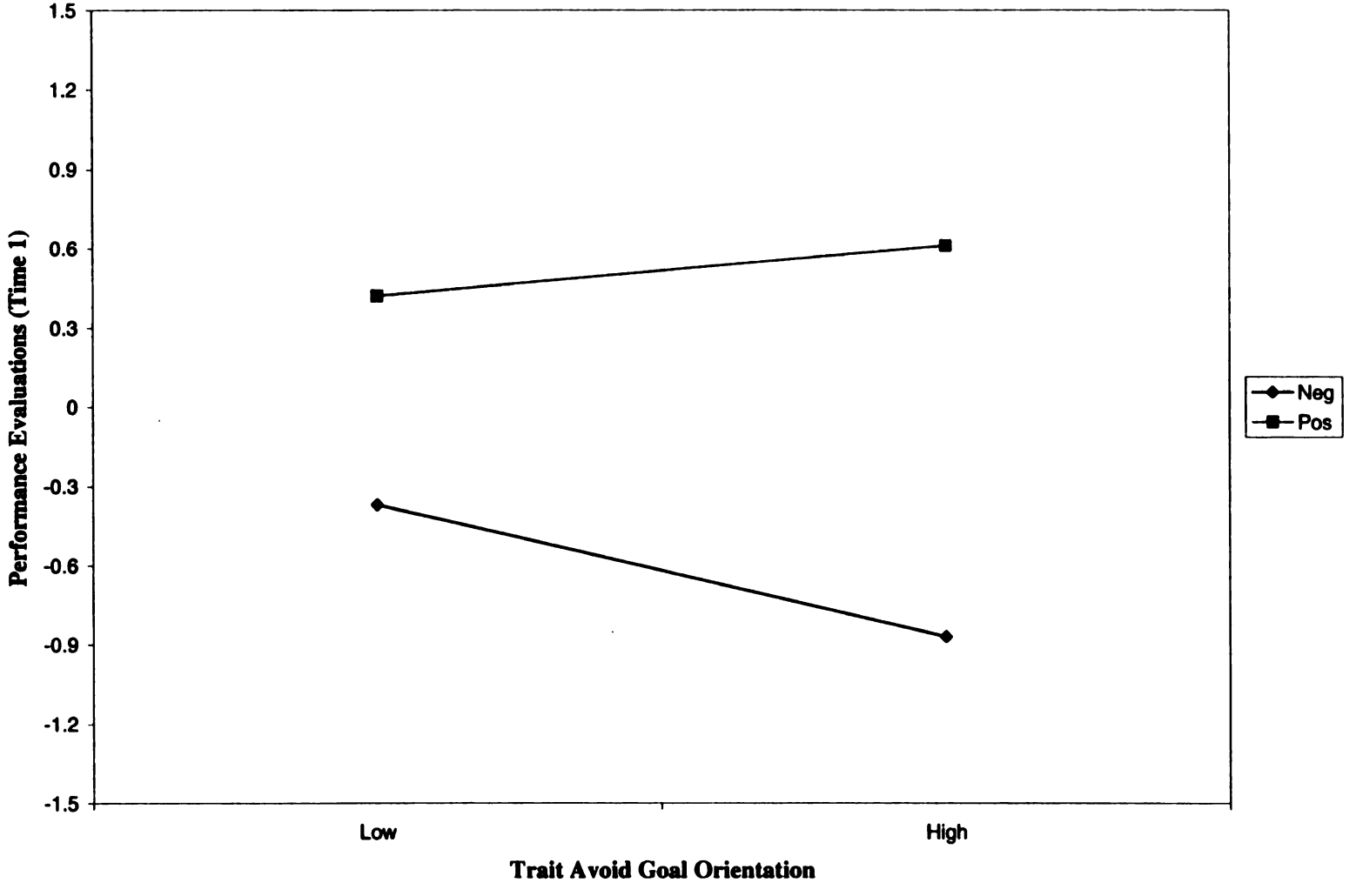


Figure 7. *Interaction between trait avoid goal orientation and feedback sign on performance evaluations (Time 1)*

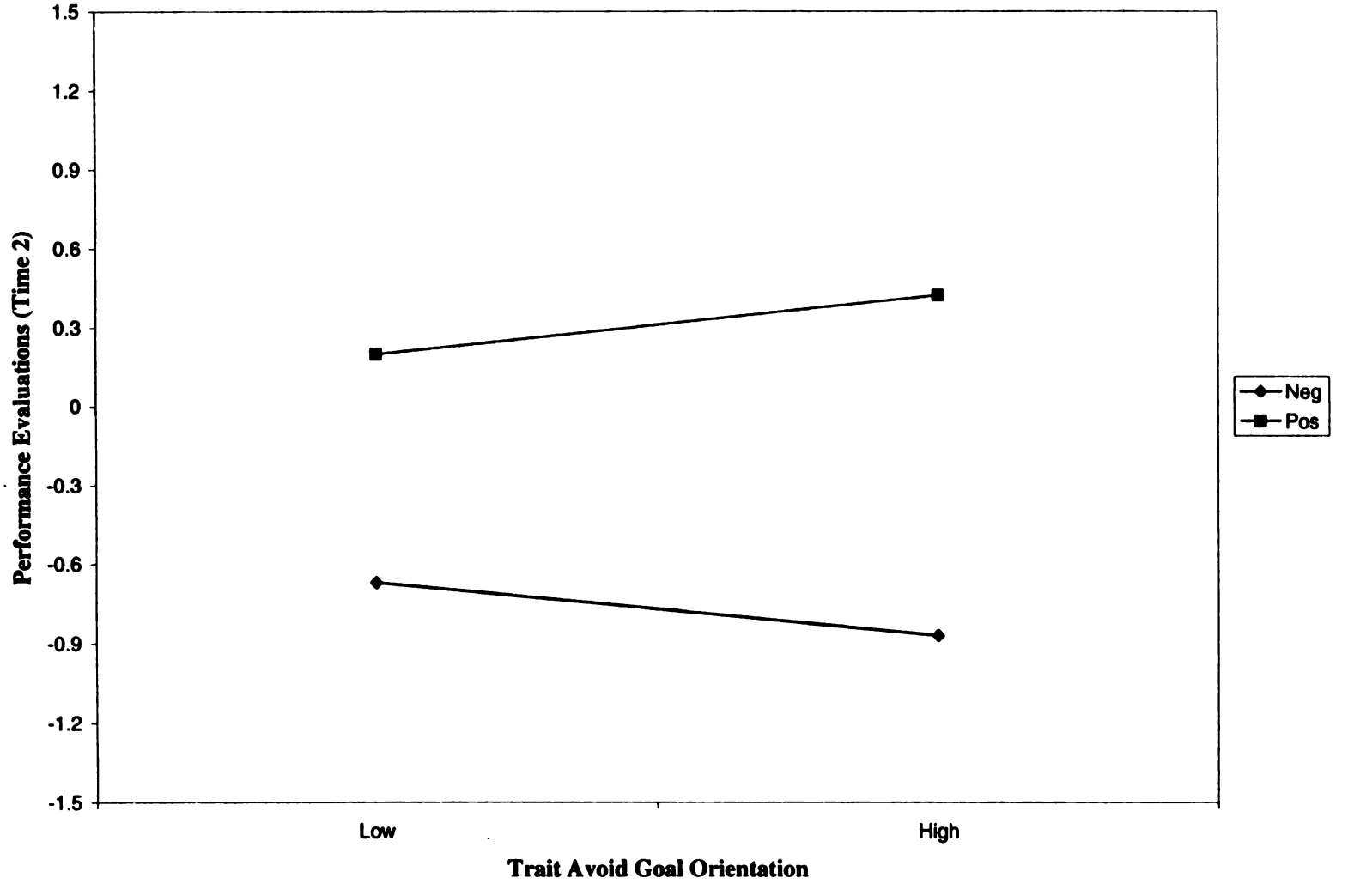


Figure 8. *Interaction between trait avoid goal orientation and feedback sign on performance evaluations (Time 2)*

As predicted by Hypothesis 5, as trait avoid goal orientation increased positive feedback led to performance evaluations of success and negative feedback led to performance evaluations of failure (see Figure 9). Thus, the hypothesized interaction between trait avoid goal orientation and feedback sign was observed at Times 1, 2, and 3 (marginal). Further, across all three goal orientations, Hypothesis 5 received partial support.

State Goal Orientations, Feedback Sign, and Affective Reactions

Hypothesis 6 predicted that state goal orientations and feedback sign would interact in their effects on individuals' experience of affect. To analyze this hypothesis, three sets of hierarchical regression analyses (i.e., one set each for Time 1, Time 2, and Time 3) were conducted with respect to state mastery, prove, and avoid goal orientations. Further, for Times 2 and 3, affective reactions from Times 1 and 2 (respectively) were partialled before proceeding with the analyses. The results of these analyses are described in detail below and are summarized in Tables 12-14 for mastery, prove, and avoid goal orientations, respectively.

Mastery goal orientation. With respect to mastery goal orientation, Hypothesis 6 predicted that as individuals' levels of state mastery goal orientation increased, positive feedback would lead to positive levels of joy (i.e., elation) and negative feedback would lead to negative levels of joy (i.e., depression). Step 1 of the first set of hierarchical regression analyses for mastery goal orientation consisted of subjects' levels of joy at Time 1 as the criterion, and state mastery goal orientation at Time 1 and feedback sign at Time 1 as predictors ($R^2 = .2372$, $F(2, 307) = 47.73$, $p < .01$). The results of this step revealed a significant main effect of feedback sign ($t(307) = 9.53$, $p < .01$) but no effect of state mastery goal orientation ($t(307) = -1.85$, $p > .05$). Adding an interaction term

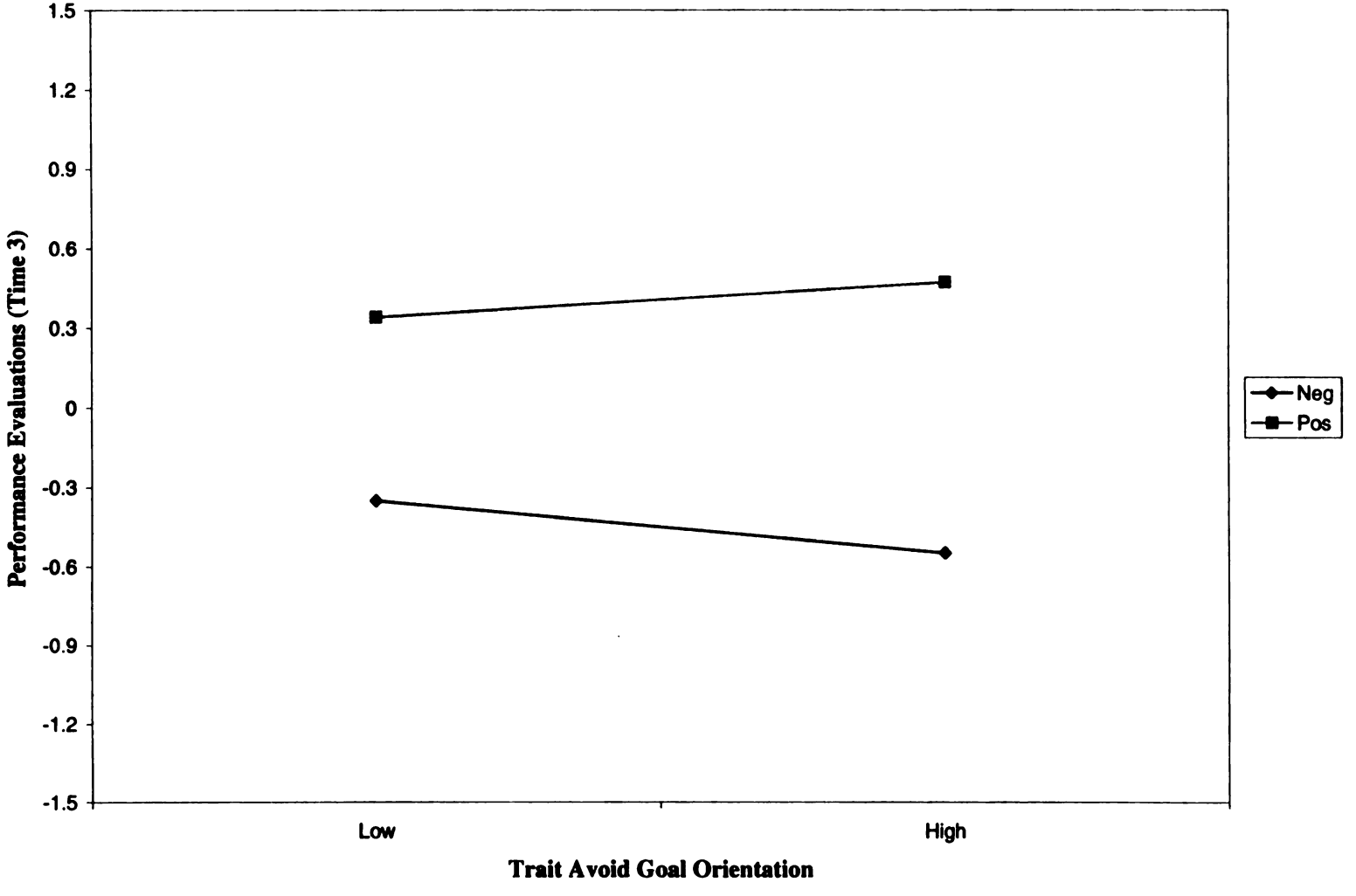


Figure 9. *Interaction between trait avoid goal orientation and feedback sign on performance evaluations (Time 3)*

Table 12

Summary of Hierarchical Regression Analyses for State Mastery Goal Orientation, Feedback Sign, and the Experience of Joy

Model	β	R^2	ΔR^2	F
Time 1				
Step 1		.2372		47.73**
State mastery goal orientation	-.094			
Feedback sign	.963**			
Step 2		.2372	.0000	0.00
State mastery goal orientation * Feedback sign	-.003			
Time 2				
Step 1		.2160		84.88**
Joy (Time 1)	.464**			
Step 2		.3858	.1698	42.30**
State mastery goal orientation	.014			
Feedback sign	.865**			
Step 3		.3863	.0005	0.21
State mastery goal orientation * Feedback sign	.044			
Time 3				
Step 1		.2980		130.78**
Joy (Time 2)	.544**			
Step 2		.4095	.1115	28.89**
State mastery goal orientation	.082			
Feedback sign	.660**			
Step 3		.4125	.0030	1.54
State mastery goal orientation * Feedback sign	.115			

* $p < .05$; ** $p < .01$

Table 13

Summary of Hierarchical Regression Analyses for State Prove Goal Orientation, Feedback Sign, and the Experience of Joy

Model	β	R^2	ΔR^2	F
Time 1				
Step 1		.2549		52.51**
State prove goal orientation	-.164**			
Feedback sign	1.012**			
Step 2		.2558	.0009	0.40
State prove goal orientation * Feedback sign	.063			
Time 2				
Step 1		.2160		84.88**
Joy (Time 1)	.464**			
Step 2		.3878	.1718	42.94**
State prove goal orientation	.047			
Feedback sign	.851**			
Step 3		.3901	.0023	1.14
State prove goal orientation * Feedback sign	.099			
Time 3				
Step 1		.2980		130.78**
Joy (Time 2)	.544**			
Step 2		.4038	.1058	27.15**
State prove goal orientation	-.013			
Feedback sign	.655**			
Step 3		.4198	.0160	8.41**
State prove goal orientation * Feedback sign	.266**			

* $p < .05$; ** $p < .01$

Table 14

Summary of Hierarchical Regression Analyses for State Avoid Goal Orientation, Feedback Sign, and the Experience of Distress

Model	β	R^2	ΔR^2	F
Time 1				
Step 1		.1860		35.07**
State avoid goal orientation	-.063			
Feedback sign	.878**			
Step 2		.2247	.0387	15.29**
State avoid goal orientation * Feedback sign	.406**			
Time 2				
Step 1		.2806		120.15**
Distress (Time 1)	.531**			
Step 2		.3680	.0874	21.16**
State avoid goal orientation	-.082			
Feedback sign	.617**			
Step 3		.3692	.0012	0.59
State avoid goal orientation * Feedback sign	-.072			
Time 3				
Step 1		.3943		200.47**
Distress (Time 2)	.626**			
Step 2		.4337	.0394	10.64**
State avoid goal orientation	-.064			
Feedback sign	.383**			
Step 3		.4530	.0193	10.76**
State avoid goal orientation * Feedback sign	2.90**			

* $p < .05$; ** $p < .01$

among these two variables to the model in Step 2 did not result in a significant increment in R^2 ($\Delta R^2 = .0000$, $F(1, 306) = 0.00$, $p > .05$).

Step 1 of the second set of hierarchical regression analyses for mastery goal orientation consisted of subjects' levels of joy at Time 2 as the criterion and their levels of joy at Time 1 as the predictor ($R^2 = .2160$, $F(1, 308) = 84.88$, $p < .01$). Next, state mastery goal orientation at Time 2 and feedback sign at Time 2 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign ($t(306) = 9.19$, $p < .01$) but no effect of state mastery goal orientation ($t(306) = 0.31$, $p > .05$). Further, the addition of an interaction term among state mastery goal orientation and feedback sign to the model in Step 3 did not result in a significant increment in R^2 ($\Delta R^2 = .0005$, $F(1, 305) = 0.21$, $p > .05$).

Finally, Step 1 of the third set of hierarchical regression analyses for mastery goal orientation consisted of subjects' levels of joy at Time 3 as the criterion and their levels of joy at Time 2 as the predictor ($R^2 = .2980$, $F(1, 308) = 130.78$, $p < .01$). Next, state mastery goal orientation at Time 3 and feedback sign at Time 3 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign ($t(306) = 7.46$, $p < .01$) but no effect of state mastery goal orientation ($t(306) = 1.75$, $p > .05$). Again, the addition of an interaction term among state mastery goal orientation and feedback sign to the model in Step 3 did not result in a significant increment in R^2 ($\Delta R^2 = .0030$, $F(1, 305) = 1.54$, $p > .05$). Thus, the hypothesized interaction between state mastery goal orientation and feedback sign was not observed at Times 1, 2, or 3.

Prove goal orientation. Similar to state mastery goal orientation, Hypothesis 6 predicted that as individuals' levels of state prove goal orientation increased, positive feedback would lead to positive levels of joy (i.e., elation) and negative feedback would lead to negative levels of joy (i.e., depression). Step 1 of the first set of hierarchical regression analyses for prove goal orientation consisted of subjects' levels of joy at Time 1 as the criterion, and state prove goal orientation at Time 1 and feedback sign at Time 1 as predictors ($R^2 = .2549$, F (2, 307) = 52.51, $p < .01$). The results of this step revealed significant main effects of state prove goal orientation (t (307) = -3.29, $p < .01$) and feedback sign (t (307) = 10.05, $p < .01$). Adding an interaction term among these two variables to the model in Step 2 did not result in a significant increment in R^2 ($\Delta R^2 = .0009$, F (1, 306) = 0.40, $p > .05$).

Step 1 of the second set of hierarchical regression analyses for prove goal orientation consisted of subjects' levels of joy at Time 2 as the criterion and their levels of joy at Time 1 as the predictor ($R^2 = .2160$, F (1, 308) = 84.88, $p < .01$). Next, state prove goal orientation at Time 2 and feedback sign at Time 2 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign (t (306) = 9.00, $p < .01$) but no effect of state prove goal orientation (t (306) = 1.03, $p > .05$). Further, the addition of an interaction term among state prove goal orientation and feedback sign to the model in Step 3 did not result in a significant increment in R^2 ($\Delta R^2 = .0023$, F (1, 305) = 1.14, $p > .05$).

Finally, Step 1 of the third set of hierarchical regression analyses for prove goal orientation consisted of subjects' levels of joy at Time 3 as the criterion and their levels of joy at Time 2 as the predictor ($R^2 = .2980$, F (1, 308) = 130.78, $p < .01$). Next, state

prove goal orientation at Time 3 and feedback sign at Time 3 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign (t (306) = 7.37, $p < .01$) but no effect of state prove goal orientation (t (306) = -0.29, $p > .05$). The addition of an interaction term among state prove goal orientation and feedback sign to the model in Step 3 resulted in a significant increment in R^2 ($\Delta R^2 = .0160$, F (1, 305) = 8.41, $p < .01$). As seen in Figure 10, with an increase in state prove goal orientation positive feedback led to positive levels of joy and negative feedback led to negative levels of joy, as hypothesized. Thus, the hypothesized interaction between state prove goal orientation and feedback sign was observed at Time 3 but not at Times 1 or 2.

Avoid goal orientation. With respect to avoid goal orientation, Hypothesis 6 predicted that as individuals' levels of state avoid goal orientation increased, positive feedback would lead to positive levels of distress (i.e., relief) and negative feedback would lead to negative levels of distress (i.e., anxiety). Step 1 of the first set of hierarchical regression analyses for avoid goal orientation consisted of subjects' levels of distress at Time 1 as the criterion, and state avoid goal orientation at Time 1 and feedback sign at Time 1 as predictors ($R^2 = .1860$, F (2, 307) = 35.07, $p < .01$). The results of this step revealed a significant main effect of feedback sign (t (307) = 8.37, $p < .01$) but no effect of state avoid goal orientation (t (307) = -1.22, $p > .05$). Further, the addition of an interaction term among these two variables to the model in Step 2 resulted in a significant increment in R^2 ($\Delta R^2 = .0387$, F (1, 306) = 15.29, $p < .01$). As hypothesized, increases in state avoid goal orientation led to positive levels of distress when subjects received

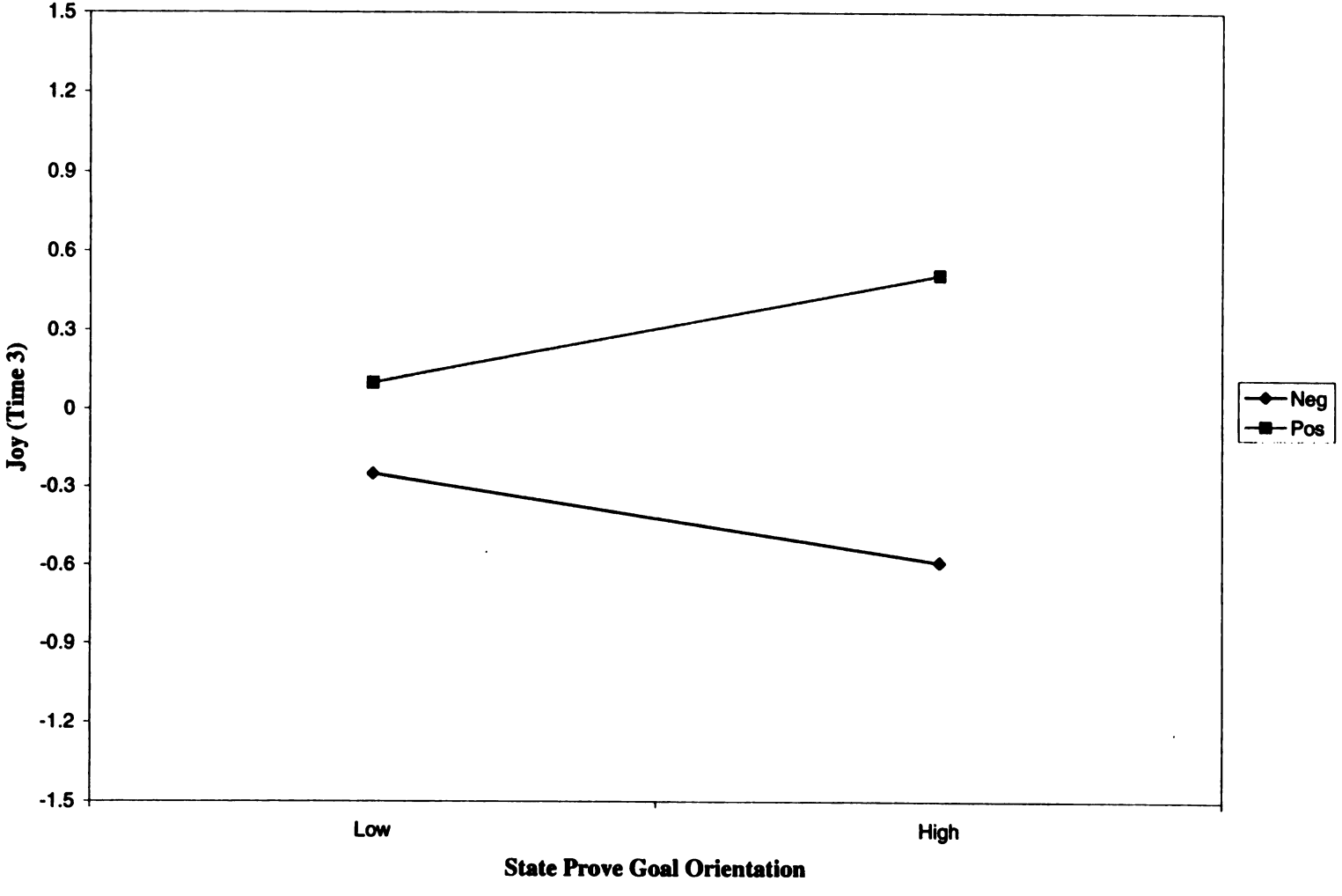


Figure 10. *Interaction between state prove goal orientation and feedback sign on joy (Time 3)*

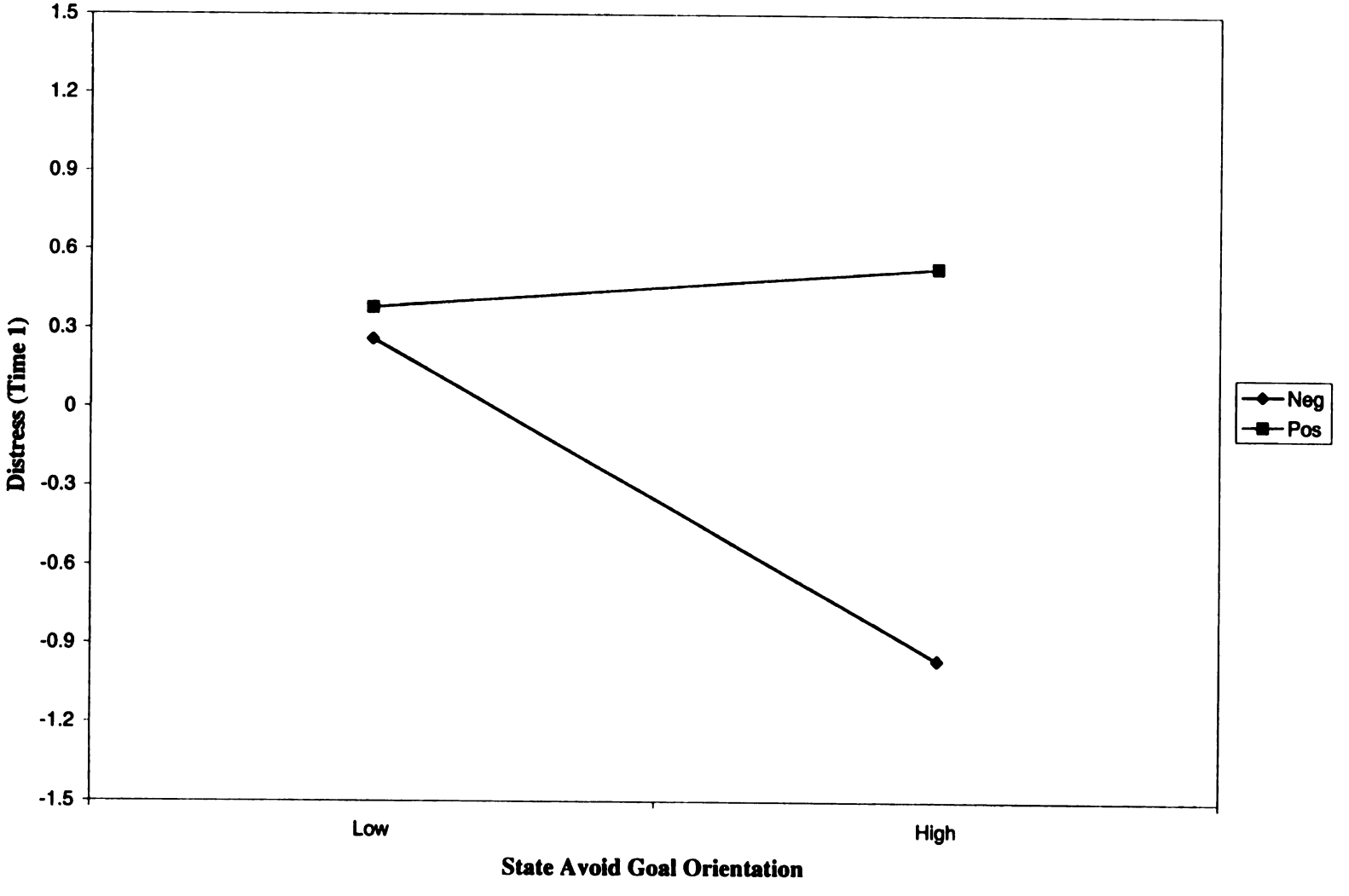


Figure 11. *Interaction between state avoid goal orientation and feedback sign on distress (Time 1)*

positive feedback and negative levels of distress when they received negative feedback (see Figure 11).

Step 1 of the second set of hierarchical regression analyses for avoid goal orientation consisted of subjects' levels of distress at Time 2 as the criterion and their levels of distress at Time 1 as the predictor ($\underline{R}^2 = .2806$, $\underline{F}\ (1, 308) = 120.15$, $\underline{p} < .01$). Next, state avoid goal orientation at Time 2 and feedback sign at Time 2 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign ($\underline{t}\ (306) = 6.40$, $\underline{p} < .01$) but no effect of state avoid goal orientation ($\underline{t}\ (306) = -1.79$, $\underline{p} > .05$). Further, the addition of an interaction term among state avoid goal orientation and feedback sign to the model in Step 3 did not result in a significant increment in R^2 ($\Delta\underline{R}^2 = .0012$, $\underline{F}\ (1, 305) = 0.59$, $\underline{p} > .05$).

Finally, Step 1 of the third set of hierarchical regression analyses for avoid goal orientation consisted of subjects' levels of distress at Time 3 as the criterion and their levels of distress at Time 2 as the predictor ($\underline{R}^2 = .3943$, $\underline{F}\ (1, 308) = 200.47$, $\underline{p} < .01$). Next, state avoid goal orientation at Time 3 and feedback sign at Time 3 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign ($\underline{t}\ (306) = 4.38$, $\underline{p} < .01$) but no effect of state avoid goal orientation ($\underline{t}\ (306) = -1.42$, $\underline{p} > .05$). Similar to Time 1, the addition of an interaction term among state avoid goal orientation and feedback sign to the model in Step 3 resulted in a significant increment in R^2 ($\Delta\underline{R}^2 = .0193$, $\underline{F}\ (1, 305) = 10.76$, $\underline{p} < .01$). In support of Hypothesis 6, increases in state avoid goal orientation led to positive levels of distress when subjects received positive feedback and negative levels of distress when they received negative feedback (see Figure 12). Thus, the hypothesized interaction between

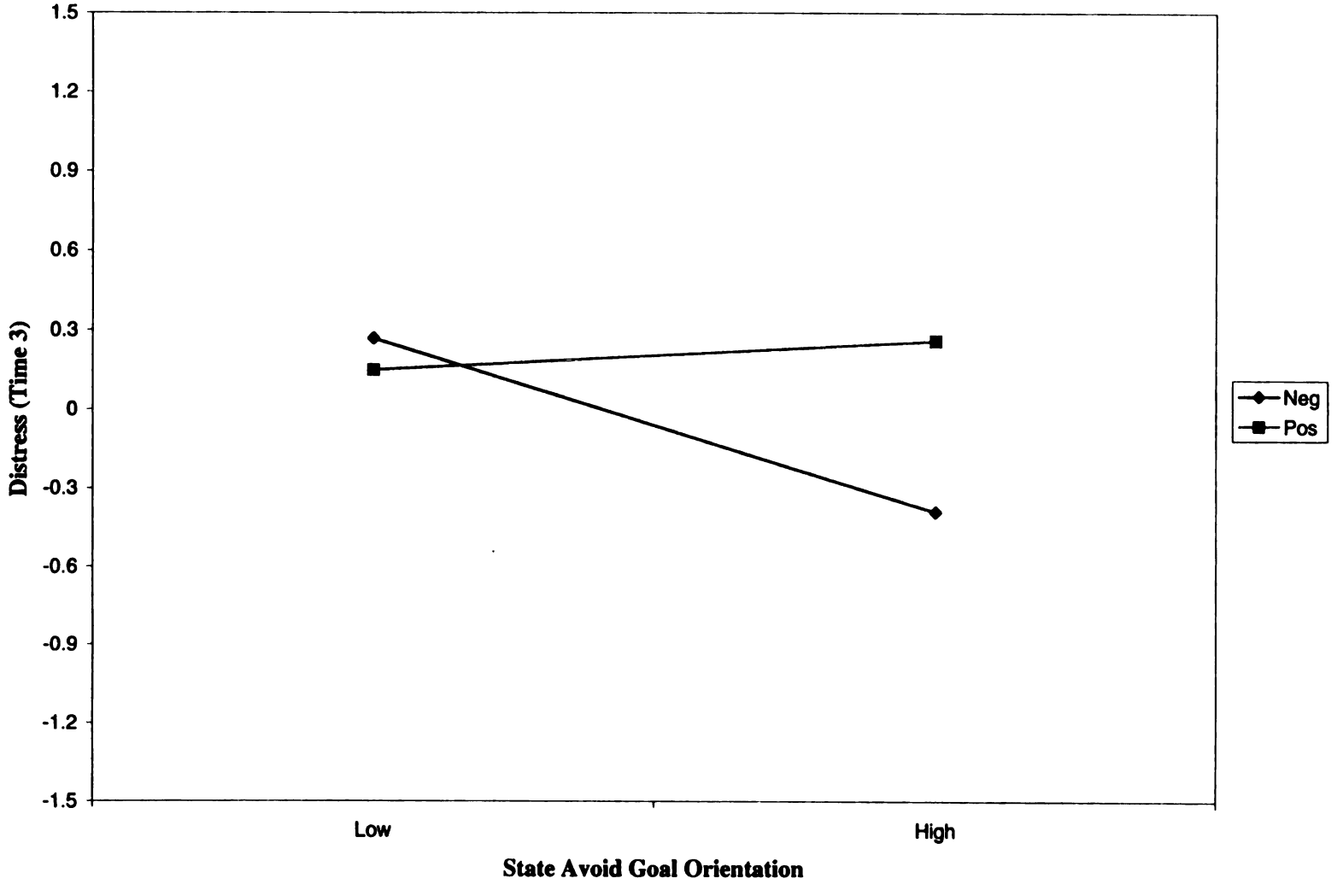


Figure 12. *Interaction between state avoid goal orientation and feedback sign on distress (Time 3)*

state avoid goal orientation and feedback sign was observed at Times 1, and 3 but not at Time 2. Further, collapsing across all three goal orientations, Hypothesis 6 received partial support.

Trait Goal Orientations, Feedback Sign, and Affective Reactions

Similar to Hypothesis 6 with respect to state goal orientations, Hypothesis 7 predicted that trait goal orientations and feedback sign would interact in their effects on individuals' experience of affect. Again, three sets of hierarchical regression analyses (i.e., one set each for Time 1, Time 2, and Time 3) were conducted with respect to trait mastery, prove, and avoid goal orientations. Further, for Times 2 and 3, affective reactions from Times 1 and 2 (respectively) were partialled before proceeding with the analyses. The results of these analyses are described in detail below and are summarized in Tables 15-17 for mastery, prove, and avoid goal orientations, respectively.

Mastery goal orientation. With respect to mastery goal orientation, Hypothesis 7 predicted that as individuals' levels of trait mastery goal orientation increased, positive feedback would lead to positive levels of joy (i.e., elation) and negative feedback would lead to negative levels of joy (i.e., depression). Step 1 of the first set of hierarchical regression analyses for mastery goal orientation consisted of subjects' levels of joy at Time 1 as the criterion, and trait mastery goal orientation at Time 1 and feedback sign at Time 1 as predictors ($\underline{R}^2 = .2287$, $\underline{F}\ (2, 307) = 45.51$, $\underline{p} < .01$). The results of this step revealed a significant main effect of feedback sign ($\underline{t}\ (307) = 9.53$, $\underline{p} < .01$) but no effect of trait mastery goal orientation ($\underline{t}\ (307) = 0.04$, $\underline{p} > .05$). Adding an interaction term among these two variables to the model in Step 2 did not result in a significant increment in R^2 ($\Delta\underline{R}^2 = .0008$, $\underline{F}\ (1, 306) = 0.34$, $\underline{p} > .05$).

Table 15

Summary of Hierarchical Regression Analyses for Trait Mastery Goal Orientation, Feedback Sign, and the Experience of Joy

Model	β	R^2	ΔR^2	F
Time 1				
Step 1		.2287		45.51**
Trait mastery goal orientation	.002			
Feedback sign	.969**			
Step 2		.2295	.0008	0.34
Trait mastery goal orientation * Feedback sign	-.059			
Time 2				
Step 1		.2160		84.88**
Joy (Time 1)	.464**			
Step 2		.3863	.1703	42.46**
Trait mastery goal orientation	.026			
Feedback sign	.865**			
Step 3		.3865	.0002	0.10
Trait mastery goal orientation * Feedback sign	.030			
Time 3				
Step 1		.2980		130.78**
Joy (Time 2)	.544**			
Step 2		.4036	.1056	27.09**
Trait mastery goal orientation	-.003			
Feedback sign	.655**			
Step 3		.4045	.0009	0.45
Trait mastery goal orientation * Feedback sign	.059			

* $p < .05$; ** $p < .01$

Table 16

Summary of Hierarchical Regression Analyses for Trait Prove Goal Orientation, Feedback Sign, and the Experience of Joy

Model	β	R^2	ΔR^2	F
Time 1				
Step 1		.2444		49.64**
Trait prove goal orientation	-.126*			
Feedback sign	.972**			
Step 2		.2446	.0002	0.10
Trait prove goal orientation * Feedback sign	-.032			
Time 2				
Step 1		.2160		84.88**
Joy (Time 1)	.464**			
Step 2		.3879	.1719	42.97**
Trait prove goal orientation	.048			
Feedback sign	.863**			
Step 3		.3931	.0052	2.62
Trait prove goal orientation * Feedback sign	.149			
Time 3				
Step 1		.2980		130.78**
Joy (Time 2)	.544**			
Step 2		.4062	.1082	27.88**
Trait prove goal orientation	-.051			
Feedback sign	.650**			
Step 3		.4129	.0067	3.46
Trait prove goal orientation * Feedback sign	.164			

* $p < .05$; ** $p < .01$

Table 17

Summary of Hierarchical Regression Analyses for Trait Avoid Goal Orientation, Feedback Sign, and the Experience of Distress

Model	β	R^2	ΔR^2	F
Time 1				
Step 1		.1866		35.22**
Trait avoid goal orientation	-.067			
Feedback sign	.864**			
Step 2		.1933	.0067	2.53
Trait avoid goal orientation * Feedback sign	.165			
Time 2				
Step 1		.2806		120.15**
Distress (Time 1)	.531**			
Step 2		.3711	.0905	22.02**
Trait avoid goal orientation	-.100*			
Feedback sign	.609**			
Step 3		.3716	.0005	0.25
Trait avoid goal orientation * Feedback sign	-.048			
Time 3				
Step 1		.3943		200.47**
Distress (Time 2)	.626**			
Step 2		.4307	.0364	9.78**
Trait avoid goal orientation	.026			
Feedback sign	.383**			
Step 3		.4307	.0000	0.00
Trait avoid goal orientation * Feedback sign	-.001			

* $p < .05$; ** $p < .01$

Step 1 of the second set of hierarchical regression analyses for mastery goal orientation consisted of subjects' levels of joy at Time 2 as the criterion and their levels of joy at Time 1 as the predictor ($\underline{R}^2 = .2160$, $\underline{F}\ (1, 308) = 84.88$, $\underline{p} < .01$). Next, trait mastery goal orientation at Time 2 and feedback sign at Time 2 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign ($\underline{t}\ (306) = 9.21$, $\underline{p} < .01$) but no effect of trait mastery goal orientation ($\underline{t}\ (306) = 0.58$, $\underline{p} > .05$). Further, the addition of an interaction term among trait mastery goal orientation and feedback sign to the model in Step 3 did not result in a significant increment in R^2 ($\Delta\underline{R}^2 = .0002$, $\underline{F}\ (1, 305) = 0.10$, $\underline{p} > .05$).

Finally, Step 1 of the third set of hierarchical regression analyses for mastery goal orientation consisted of subjects' levels of joy at Time 3 as the criterion and their levels of joy at Time 2 as the predictor ($\underline{R}^2 = .2980$, $\underline{F}\ (1, 308) = 130.78$, $\underline{p} < .01$). Next, trait mastery goal orientation at Time 3 and feedback sign at Time 3 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign ($\underline{t}\ (306) = 7.36$, $\underline{p} < .01$) but no effect of trait mastery goal orientation ($\underline{t}\ (306) = -0.08$, $\underline{p} > .05$). Again, the addition of an interaction term among trait mastery goal orientation and feedback sign to the model in Step 3 did not result in a significant increment in R^2 ($\Delta\underline{R}^2 = .0009$, $\underline{F}\ (1, 305) = 0.45$, $\underline{p} > .05$). Thus, the hypothesized interaction between trait mastery goal orientation and feedback sign was not observed at Times 1, 2, or 3.

Prove goal orientation. Similar to trait mastery goal orientation, Hypothesis 7 predicted that as individuals' levels of trait prove goal orientation increased, positive feedback would lead to positive levels of joy (i.e., elation) and negative feedback would

lead to negative levels of joy (i.e., depression). Step 1 of the first set of hierarchical regression analyses for prove goal orientation consisted of subjects' levels of joy at Time 1 as the criterion, and trait prove goal orientation at Time 1 and feedback sign at Time 1 as predictors ($\underline{R}^2 = .2444$, $\underline{F}\ (2, 307) = 49.64$, $\underline{p} < .01$). The results of this step revealed significant main effects of trait prove goal orientation ($\underline{t}\ (307) = -2.53$, $\underline{p} < .01$) and feedback sign ($\underline{t}\ (307) = 9.67$, $\underline{p} < .01$). Adding an interaction term among these two variables to the model in Step 2 did not result in a significant increment in R^2 ($\Delta\underline{R}^2 = .0002$, $\underline{F}\ (1, 306) = 0.10$, $\underline{p} > .05$).

Step 1 of the second set of hierarchical regression analyses for prove goal orientation consisted of subjects' levels of joy at Time 2 as the criterion and their levels of joy at Time 1 as the predictor ($\underline{R}^2 = .2160$, $\underline{F}\ (1, 308) = 84.88$, $\underline{p} < .01$). Next, trait prove goal orientation at Time 2 and feedback sign at Time 2 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign ($\underline{t}\ (306) = 9.20$, $\underline{p} < .01$) but no effect of trait prove goal orientation ($\underline{t}\ (306) = 1.07$, $\underline{p} > .05$). Further, the addition of an interaction term among trait prove goal orientation and feedback sign to the model in Step 3 did not result in a significant increment in R^2 ($\Delta\underline{R}^2 = .0052$, $\underline{F}\ (1, 305) = 2.62$, $\underline{p} > .05$).

Finally, Step 1 of the third set of hierarchical regression analyses for prove goal orientation consisted of subjects' levels of joy at Time 3 as the criterion and their levels of joy at Time 2 as the predictor ($\underline{R}^2 = .2980$, $\underline{F}\ (1, 308) = 130.78$, $\underline{p} < .01$). Next, trait prove goal orientation at Time 3 and feedback sign at Time 3 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign ($\underline{t}\ (306) = 7.32$, $\underline{p} < .01$) but no effect of trait prove goal orientation ($\underline{t}\ (306)$

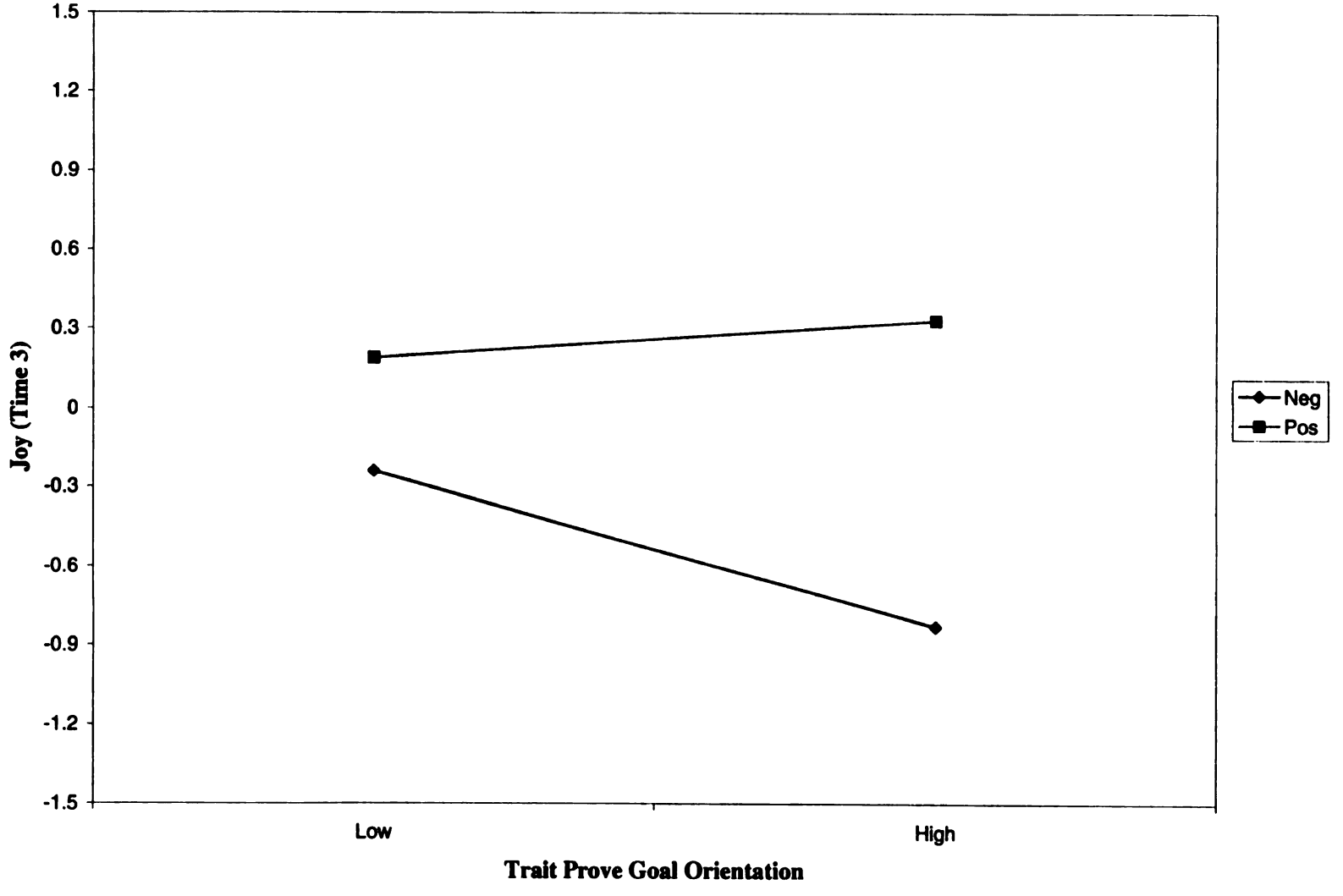


Figure 13. *Interaction between trait prove goal orientation and feedback sign on joy (Time 3)*

= -1.15, $p > .05$). The addition of an interaction term among trait prove goal orientation and feedback sign to the model in Step 3 resulted in a marginally significant increment in R^2 ($\Delta R^2 = .0067$, F (1, 305) = 3.46, $p = .0637$). As seen in Figure 13, with an increase in trait prove goal orientation positive feedback led to positive levels of joy and negative feedback led to negative levels of joy, as hypothesized. Thus, the hypothesized interaction between trait prove goal orientation and feedback sign was observed only at Time 3 (i.e., marginally).

Avoid goal orientation. With respect to avoid goal orientation, Hypothesis 7 predicted that as individuals' levels of trait avoid goal orientation increased, positive feedback would lead to positive levels of distress (i.e., relief) and negative feedback would lead to negative levels of distress (i.e., anxiety). Step 1 of the first set of hierarchical regression analyses for avoid goal orientation consisted of subjects' levels of distress at Time 1 as the criterion, and trait avoid goal orientation at Time 1 and feedback sign at Time 1 as predictors ($R^2 = .1866$, F (2, 307) = 35.22, $p < .01$). The results of this step revealed a significant main effect of feedback sign (t (307) = 8.30, $p < .01$) but no effect of trait avoid goal orientation (t (307) = -1.31, $p > .05$). Further, the addition of an interaction term among these two variables to the model in Step 2 did not result in a significant increment in R^2 ($\Delta R^2 = .0067$, F (1, 306) = 2.53, $p > .05$).

Step 1 of the second set of hierarchical regression analyses for avoid goal orientation consisted of subjects' levels of distress at Time 2 as the criterion and their levels of distress at Time 1 as the predictor ($R^2 = .2806$, F (1, 308) = 120.15, $p < .01$). Next, trait avoid goal orientation at Time 2 and feedback sign at Time 2 were added to the model as predictors in Step 2. The results of this second step revealed significant

main effects of trait avoid goal orientation sign (t (306) = -2.17, $p < .05$) and feedback sign (t (306) = 6.36, $p < .01$). Further, the addition of an interaction term among trait avoid goal orientation and feedback sign to the model in Step 3 did not result in a significant increment in R^2 ($\Delta R^2 = .0005$, F (1, 305) = 0.25, $p > .05$).

Finally, Step 1 of the third set of hierarchical regression analyses for avoid goal orientation consisted of subjects' levels of distress at Time 3 as the criterion and their levels of distress at Time 2 as the predictor ($R^2 = .3943$, F (1, 308) = 200.47, $p < .01$). Next, trait avoid goal orientation at Time 3 and feedback sign at Time 3 were added to the model as predictors in Step 2. The results of this second step revealed a significant main effect of feedback sign (t (306) = 4.37, $p < .01$) but no effect of trait avoid goal orientation (t (306) = 0.61, $p > .05$). Similar to Time 1, the addition of an interaction term among trait avoid goal orientation and feedback sign to the model in Step 3 did not result in a significant increment in R^2 ($\Delta R^2 = .0000$, F (1, 305) = 0.00, $p > .05$). Thus, the hypothesized interaction between trait avoid goal orientation and feedback sign was not observed at Times 1, 2, or 3. Further, collapsing across all three goal orientations, Hypothesis 7 received only partial support (i.e., the marginally significant interaction between trait prove goal orientation and feedback sign at Time 3).

Performance Evaluations and Affective Reactions

Hypothesis 8 predicted that individuals' performance evaluations would have a main effect on affective reactions. Specifically, it was predicted that positive performance evaluation (i.e., evaluations of success) would lead to positive levels of joy (i.e., elation) and distress (i.e., relief) whereas negative performance evaluations (i.e., evaluations of failure) would lead to negative levels of joy (i.e., depression) and distress

(i.e., anxiety). For Times 2 and 3, affective reactions from Times 1 and 2 (respectively) were partialled; thus, results reported with respect to Hypothesis 8 are based on Type I SS.

Joy. As expected, performance evaluations at Time 1 were positively related to joy at Time 1 ($r = .73$, $p < .01$). To test for this relationship at Time 2, joy at Time 2 was entered into a regression analysis as the criterion, and joy at Time 1 and performance evaluations at Time 2 were entered as predictors. Results revealed that after partialling the effects of joy at Time 1 (t (307) = 13.18, $p < .01$), performance evaluations at Time 2 had a significant main effect on joy at Time 2 (t (307) = 17.95, $p < .01$). Finally, joy at Time 3 was entered into a regression analysis as the criterion, and joy at Time 2 and performance evaluations at Time 3 were entered as predictors. As expected, results revealed that after partialling the effects of joy at Time 2 (t (307) = 14.28, $p < .01$), performance evaluations at Time 3 had a significant main effect on joy at Time 3 (t (307) = 13.16, $p < .01$).

Distress. Also as expected, performance evaluations at Time 1 were positively related to distress at Time 1 ($r = .61$, $p < .01$). Again, to test for this relationship at Time 2, distress at Time 2 was entered into a regression analysis as the criterion, and distress at Time 1 and performance evaluations at Time 2 were entered as predictors. Results revealed that after partialling the effects of distress at Time 1 (t (307) = 12.88, $p < .01$), performance evaluations at Time 2 had a significant main effect on distress at Time 2 (t (307) = 10.87, $p < .01$). Finally, distress at Time 3 was entered into a regression analysis as the criterion, and distress at Time 2 and performance evaluations at Time 3 were entered as predictors. Again, results revealed that after partialling the effects of distress

at Time 2 (t (307) = 15.53, $p < .01$), performance evaluations at Time 3 had a significant main effect on distress at Time 3 (t (307) = 7.97, $p < .01$). Thus, Hypothesis 8 received full support.

Performance Evaluations and Subsequent Self-Efficacy

Hypothesis 9 predicted that individuals' performance evaluations would have a main effect on their subsequent (i.e., Times 2-4) self-efficacy. Specifically, Hypothesis 9 predicted that positive performance evaluation (i.e., evaluations of success) would lead to high levels of self-efficacy whereas negative performance evaluations (i.e., evaluations of failure) would lead to low levels of self-efficacy. Self-efficacy from the previous iteration of the cycle was partialled before examining the hypothesized relationship at Times 2-4; thus, results reported with respect to Hypothesis 9 are based on Type I SS.

First, self-efficacy at Time 2 was entered into a regression analysis as the criterion, and self-efficacy at Time 1 and performance evaluations at Time 1 were entered as predictors. Results revealed that after partialling the effects of self-efficacy at Time 1 (t (307) = 14.24, $p < .01$), performance evaluations at Time 1 had a significant main effect on self-efficacy at Time 2 (t (307) = 14.65, $p < .01$). Next, self-efficacy at Time 3 was entered into a regression analysis as the criterion, and self-efficacy at Time 2 and performance evaluations at Time 2 were entered as predictors. As expected, results revealed that after partialling the effects of self-efficacy at Time 2 (t (307) = 26.05, $p < .01$), performance evaluations at Time 2 had a significant main effect on self-efficacy at Time 3 (t (307) = 10.92, $p < .01$). Finally, self-efficacy at Time 4 was entered into a regression analysis as the criterion, and self-efficacy at Time 3 and performance evaluations at Time 3 were entered as predictors. As hypothesized, results revealed that

after partialling the effects of self-efficacy at Time 3 (t (307) = 30.53, $p < .01$), performance evaluations at Time 3 had a significant main effect on self-efficacy at Time 4 (t (307) = 9.30, $p < .01$). Thus, Hypothesis 9 received full support.

Affective Reactions and Subsequent State Goal Orientations

Mastery goal orientation. With respect to mastery goal orientation, Hypothesis 11 predicted that increases in affective reactions of joy (i.e., elation) would lead to increases in subsequent state mastery goal orientation. To test this relationship at Time 2 in the cycle, state mastery goal orientation at Time 2 was entered into a regression analysis as the criterion, and state mastery goal orientation at Time 1 and joy at Time 1 were entered as predictors. After partialling the effects of state mastery goal orientation at Time 1 (t (307) = 13.64, $p < .01$), joy at Time 1 had a main effect on state mastery goal orientation at Time 2 (t (307) = 2.51, $p < .05$; Type I SS).

Next, state mastery goal orientation at Time 3 was entered into a regression analysis as the criterion, and state mastery goal orientation at Time 2 and joy at Time 2 were entered as predictors. After partialling the effects of state mastery goal orientation at Time 2 (t (307) = 19.09, $p < .01$), joy at Time 2 had a main effect on state mastery goal orientation at Time 3 (t (307) = 3.94, $p < .01$; Type I SS).

Finally, state mastery goal orientation at Time 4 was entered into a regression analysis as the criterion, and state mastery goal orientation at Time 3 and joy at Time 3 were entered as predictors. After partialling the effects of state mastery goal orientation at Time 3 (t (307) = 24.89, $p < .01$), joy at Time 3 had a main effect on state mastery goal orientation at Time 4 (t (307) = 4.63, $p < .01$; Type I SS). Thus, the hypothesized

relationship between joy and subsequent state mastery goal orientation was observed at all three time periods.

Prove goal orientation. Similar to mastery goal orientation, Hypothesis 11 predicted that increases in affective reactions of joy (i.e., elation) would lead to increases in subsequent state prove goal orientation. To test this relationship, state prove goal orientation at Time 2 was entered into a regression analysis as the criterion, and state prove goal orientation at Time 1 and joy at Time 1 were entered as predictors. After partialling the effects of state prove goal orientation at Time 1 (t (307) = 17.34, $p < .01$), joy at Time 1 did not have a main effect on state prove goal orientation at Time 2 (t (307) = 1.61, $p > .05$; Type I SS).

Next, state prove goal orientation at Time 3 was entered into a regression analysis as the criterion, and state prove goal orientation at Time 2 and joy at Time 2 were entered as predictors. After partialling the effects of state prove goal orientation at Time 2 (t (307) = 22.24, $p < .01$), joy at Time 2 did not have a main effect on state prove goal orientation at Time 3 (t (307) = 0.90, $p > .05$; Type I SS).

Finally, state prove goal orientation at Time 4 was entered into a regression analysis as the criterion, and state prove goal orientation at Time 3 and joy at Time 3 were entered as predictors. Again, after partialling the effects of state prove goal orientation at Time 3 (t (307) = 23.91, $p < .01$), joy at Time 3 did not have a main effect on state prove goal orientation at Time 4 (t (307) = -0.93, $p > .05$; Type I SS). Thus, the hypothesized relationship between joy and subsequent state prove goal orientation was not observed at any of the three time periods.

Hypothesis 11 also predicted that increases in affective reactions of distress (i.e., relief) would lead to increases in subsequent state prove goal orientation. To test this relationship at Time 2, state prove goal orientation at Time 2 was entered into a regression analysis as the criterion, and state prove goal orientation at Time 1 and distress at Time 1 were entered as predictors. After partialling the effects of state prove goal orientation at Time 1 (t (307) = 17.29, $p < .01$), distress at Time 1 did not have a main effect on state prove goal orientation at Time 2 (t (307) = 0.92, $p > .05$; Type I SS).

Next, state prove goal orientation at Time 3 was entered into a regression analysis as the criterion, and state prove goal orientation at Time 2 and distress at Time 2 were entered as predictors. After partialling the effects of state prove goal orientation at Time 2 (t (307) = 22.23, $p < .01$), distress at Time 2 did not have a main effect on state prove goal orientation at Time 3 (t (307) = 0.62, $p > .05$; Type I SS).

Finally, state prove goal orientation at Time 4 was entered into a regression analysis as the criterion, and state prove goal orientation at Time 3 and distress at Time 3 were entered as predictors. Again, after partialling the effects of state prove goal orientation at Time 3 (t (307) = 24.02, $p < .01$), distress at Time 3 did not have a main effect on state prove goal orientation at Time 4 (t (307) = -1.96, $p > .05$; Type I SS). Thus, similar to joy, the hypothesized relationship between distress and subsequent state prove goal orientation was not observed at any of the three time periods.

Avoid goal orientation. With respect to avoid goal orientation, Hypothesis 11 predicted that decreases in affective reactions of joy (i.e., depression) would lead to increases in subsequent state avoid goal orientation. To test this relationship at Time 2 in the cycle, state avoid goal orientation at Time 2 was entered into a regression analysis as

the criterion, and state avoid goal orientation at Time 1 and joy at Time 1 were entered as predictors. After partialling the effects of state avoid goal orientation at Time 1 (t (307) = 20.48, $p < .01$), joy at Time 1 did not have a main effect on state avoid goal orientation at Time 2 (t (307) = 0.26, $p > .05$; Type I SS).

Next, state avoid goal orientation at Time 3 was entered into a regression analysis as the criterion, and state avoid goal orientation at Time 2 and joy at Time 2 were entered as predictors. After partialling the effects of state avoid goal orientation at Time 2 (t (307) = 25.28, $p < .01$), joy at Time 2 had a main effect on state avoid goal orientation at Time 3 (t (307) = -2.51, $p < .05$; Type I SS).

Finally, state avoid goal orientation at Time 4 was entered into a regression analysis as the criterion, and state avoid goal orientation at Time 3 and joy at Time 3 were entered as predictors. After partialling the effects of state avoid goal orientation at Time 3 (t (307) = 28.90, $p < .01$), joy at Time 3 did not have a main effect on state avoid goal orientation at Time 4 (t (307) = -0.63, $p < .01$; Type I SS). Thus, the hypothesized relationship between joy and subsequent state avoid goal orientation was observed only at Time 3.

Hypothesis 11 also predicted that decreases in affective reactions of distress (i.e., anxiety) would lead to increases in subsequent state avoid goal orientation. To test this relationship, state avoid goal orientation at Time 2 was entered into a regression analysis as the criterion, and state avoid goal orientation at Time 1 and distress at Time 1 were entered as predictors. After partialling the effects of state avoid goal orientation at Time 1 (t (307) = 20.55, $p < .01$), distress at Time 1 did not have a main effect on state avoid goal orientation at Time 2 (t (307) = -1.38, $p > .05$; Type I SS).

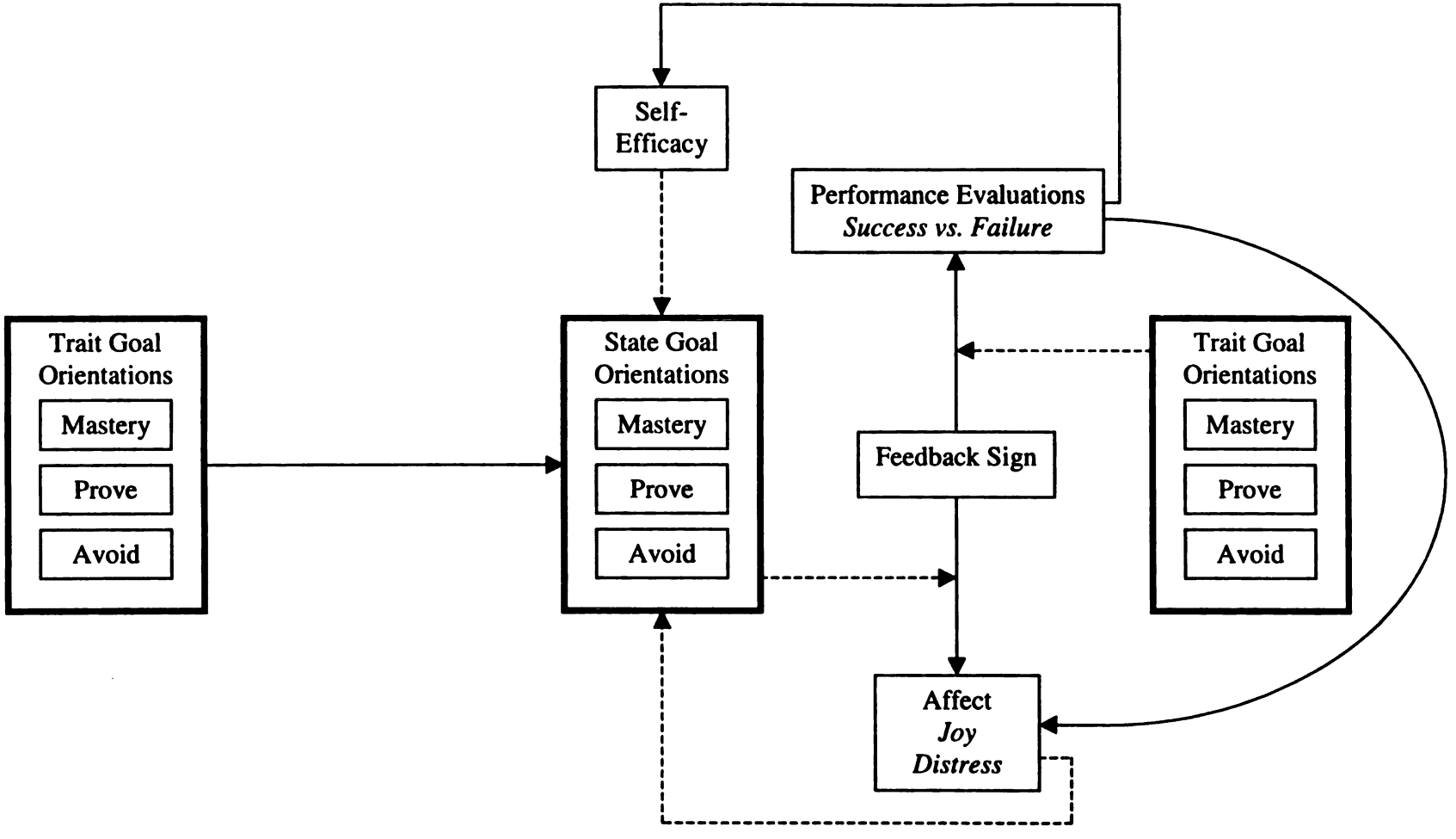
Next, state avoid goal orientation at Time 3 was entered into a regression analysis as the criterion, and state avoid goal orientation at Time 2 and distress at Time 2 were entered as predictors. After partialling the effects of state avoid goal orientation at Time 2 (t (307) = 25.39, $p < .01$), distress at Time 2 had a main effect on state avoid goal orientation at Time 3 (t (307) = -3.04, $p < .01$; Type I SS).

Finally, state avoid goal orientation at Time 4 was entered into a regression analysis as the criterion, and state avoid goal orientation at Time 3 and distress at Time 3 were entered as predictors. Again, after partialling the effects of state avoid goal orientation at Time 3 (t (307) = 28.99, $p < .01$), distress at Time 3 did not have a main effect on state avoid goal orientation at Time 4 (t (307) = -1.50, $p > .05$; Type I SS). Thus, the hypothesized relationship between distress and subsequent state avoid goal orientation was observed only at Time 2. Further, collapsing across the three goal orientations, Hypothesis 11 received partial support.

Summary of Results

Figure 14 summarizes the linkages that were supported consistently (but not necessarily fully) in the current study. Some of the relationships in the figure were supported each time they were assessed (e.g., positive relationship between performance evaluations and subsequent self-efficacy) whereas other relationships were supported only sometimes (e.g., positive relationship between affect and subsequent state goal orientations was only observed between affective reactions of *joy* and state *mastery* goal orientation, but this relationship was observed at each time period).

Predictors of initial state goal orientations. As noted above, the hypothesized interactions between trait goal orientations and situational factors (i.e., goal orientation



Note: Solid lines represent fully supported linkages. Dotted lines represent partially supported linkages.

Figure 14. *Summary of supported linkages in the theoretical and operational models*

manipulation) as well as between trait goal orientations and individual differences (i.e., openness to experiences, agreeableness, self-monitoring) on initial state goal orientations were not supported. In fact, the only consistent predictors of subjects' initial state goal orientations were their trait goal orientations. Subjects' pre-task self-efficacy was also a significant predictor of their initial state mastery and prove goal orientations but only a marginally significant predictor of subjects' initial state avoid goal orientation.

Effects on performance evaluations and affective reactions. In all three waves of data, positive feedback was associated with performance evaluations of success and affective reactions of elation (i.e., positive joy) and relief (i.e., positive distress), and negative feedback was associated with performance evaluations of failure and affective reactions of depression (i.e., negative joy) and anxiety (i.e., negative distress). Further, the relationship between feedback sign and performance evaluations was moderated by trait prove and avoid goal orientations fairly consistently across the three waves of data. Specifically, as subjects' levels of trait prove and avoid goal orientations increased, positive feedback was associated with performance evaluations of success and negative feedback was associated with performance evaluations of failure.

Additionally, the relationship between feedback sign and affective reactions was moderated by state avoid goal orientations fairly consistently across the three waves of data. Specifically, as subjects levels of state avoid goal orientations increased, positive feedback was associated with positive levels of distress (i.e., relief) and negative feedback was associated with negative levels of distress (i.e., anxiety). The moderating effects of state goal orientations on the relationship between feedback sign and affective reactions was also observed for state prove goal orientation at Wave 3 (i.e., as state prove

goal orientation increased, positive feedback was associated with positive levels of joy and negative feedback was associated with negative levels of joy). However, this effect was not as consistent as the aforementioned moderating effect of state avoid goal orientation.

Finally, the hypothesized relationship between performance evaluations and affect was observed at all three waves of data (see Figure 14). That is, performance evaluations of success (i.e., positive performance evaluations) were associated with affective reactions of elation (i.e., positive joy) and relief (i.e., positive distress). In contrast, performance evaluations of failure (i.e., negative performance evaluations) were associated with affective reactions of depression (i.e., negative joy) and anxiety (i.e., negative distress).

Self-efficacy revisited. As shown in Figure 14, the hypothesized relationship between performance evaluations and subsequent self-efficacy was observed in all three waves of data. Specifically, performance evaluations of success were associated with high levels of subsequent self-efficacy, and performance evaluations of failure were associated with low levels of subsequent self-efficacy. Further, as noted earlier, pre-task self-efficacy was related to initial state goal orientations (only marginally significant with respect to state avoid goal orientation). Likewise, self-efficacy at later points in the study were also associated with subsequent state goal orientations. However, as with initial state goal orientations, self-efficacy was *significantly* related only to subsequent state mastery and prove goal orientations.

Affective reactions and subsequent state goal orientations. The hypothesized linkage from affective reactions to subsequent state goal orientations received only partial

support. First, the proposed relationship between affective reactions of joy and subsequent state mastery goal orientation was observed in all three waves of data. Specifically, affective reactions of elation (i.e., positive joy) were associated with high levels of subsequent state mastery goal orientation, and affective reactions of depression (i.e., negative distress) were associated with low levels of subsequent state mastery goal orientation.

Second, the hypothesized relationship between affective reactions and subsequent state avoid goal orientation was also observed (although, not as consistently as state mastery goal orientation). For example, as affective reactions of depression (i.e., negative joy) increased, subsequent state avoid goal orientation increased; this relationship, however, was observed only at Time 3. Similarly, as affective reactions of anxiety (i.e., negative distress) increased, subsequent state avoid goal orientation increased; again, this relationship was observed only at one time period (i.e., Time 2). Regardless, the current data provide some support of the hypothesized linkage from affective reactions to subsequent state goal orientations.

DISCUSSION

Summary of Research Goals

The goals and questions of interest in this study fall primarily into two categories. The first area of interest was an examination of potential factors that may lead to individuals' initial state goal orientations when they encounter a situation. As shown in the conceptual and operational models (Figures 1 and 2, respectively), these potential factors include 1) individuals' levels of trait goal orientations, 2) situational cues or influences, 3) other personality variables that might represent the malleability of an individual's behavior and motivation, and 4) self-efficacy (based on any information that individuals may have about the situation).

The second area of interest was an examination of changes that occur to individuals' state goal orientations as they progress through time and gain experience at a given task. Of particular interest in the current study was how individuals' state goal orientations change after they receive feedback regarding their progress and performance on a problem-solving task. Understanding how different individuals interpret and respond to positive and negative performance feedback (and how these responses translate into future motivation) is a fruitful area of research.

Review of Goal 1 Attainment

The lack of effects of the goal orientation manipulation on any of the state goal orientation scales at any of the time periods suggests that it may have failed to alter individuals' attitudes and motivation related to performance on the task. This is surprising considering that the current manipulation was developed by combining elements of previous successful manipulations. For example, on a computerized version

of the problem-solving board game MASTERMIND, Chambers et al. (2000) induced a mastery goal orientation by telling subjects that the game was "an opportunity for them to improve [their] logical reasoning skills" and a performance goal orientation by telling subjects that the game was "an opportunity to demonstrate [their] logical reasoning skills. Having subjects solve a series of word-find puzzles, Elliot and Harachiewicz (1996) induced a prove goal orientation by telling subjects that "some students stand out because they do quite well on the puzzles" and an avoid goal orientation by telling subjects that "some students stand out because they do quite poorly on the puzzles." Using a simple pattern recognition task, Elliott and Dweck (1988) induced a mastery goal orientation by telling subjects "you'll probably learn a lot of new things...but you'll probably make a bunch of mistakes" and a performance goal orientation by telling subjects "although you won't learn new things, it will really show me what kids can do." Further, in a 3-hour computer training course, Martocchio (1994) induced a mastery goal orientation by telling subjects to "remember that the more practice you have, the more capable you will become" and a performance goal orientation by telling subjects to "remember that learning how to use microcomputers is based on skills that you already possess." Finally, using a computerized class scheduling task, Steele-Johnson et al. (2000) induced a mastery goal orientation by telling subjects that "skills on problem solving tasks like the class scheduling task are developed through practice...the more people practice, the more capable they become...you can expect to make some mistakes...you should see your performance improve with practice" and a performance goal orientation by telling subjects that "performance on problem solving tasks like the class scheduling task

reflects basic cognitive capabilities...The higher their underlying cognitive capacities, the better is their problem solving."

A close examination of the aforementioned goal orientation manipulations and the manipulations employed in the current study reveal great similarities—the current manipulations were developed based on these previous manipulations. However, in developing the current manipulations, key phrases were taken from the aforementioned studies and combined to form a "powerful" manipulation. In doing so, however, it is possible that subjects became confused because they were not given enough information to understand the manipulations. For example, subjects in the prove and avoid conditions were told "remember, you already have the ability." What does this mean? Is this enough for subjects to get the idea that their ability is fixed and practicing will not lead to increased competence and performance? Similarly, consider the mastery manipulation, in which subjects were first told that "we can learn from our mistakes" and later told to "focus [their] attention on developing [their] skills and mastering the task rather than on the mistakes that [they] make." These two phrases are inconsistent. Hearing the second phrase may have led subjects to think "but you just told me that I can learn from my mistakes and now you're telling me to ignore my mistakes...how am I supposed to learn?" Thus, although the current manipulations were developed with the intent of "hitting subjects over the head" with powerful words and phrases, it is quite possible that subjects were instead confused and baffled how they should translate the manipulations into actions. Post-experiment interviews with subjects could provide insight regarding the extent to which this explanation is plausible--i.e., the extent to which subjects did or did not construe the situation in a similar fashion based on the task instructions.

Unfortunately, such a strategy is not possible for the current study; however, future researchers may wish to take this advice. To the extent that individuals construe the situation differently, the manipulation has failed.

A second potential reason for this manipulation failure could be that the manipulations were too powerful (rather than not powerful enough as the previous explanation proposed) and thus unbelievable—i.e., they were transparent. For example, the prove and avoid manipulations stressed to participants that they "already have the ability." Considering that college students served as subjects in the current study and throughout college individuals are taught that they can learn new things and that studying leads to better grades, subjects in these conditions may not have believed what they were being told.

A third potential reason for the manipulation failure could be that two of the three conditions were extremely similar to each other. The only difference between the prove and avoid manipulations was "Some students really stand out because they do so much better than everyone else; if you perform better than most other students do, this would indicate that you have more ability than they do" (prove) vs. "Some students really stand out because they do so much worse than everyone else; if you perform worse than most other students do, this would indicate that you have less ability than they do" (avoid). This difference may not have been enough to elicit a difference in motivational attitudes. That is, subjects in the two conditions may have perceived these sentences as the same.

The model displayed in Figure 14 illustrates the linkages that were supported in the current study. As discussed, the goal orientation manipulation has been removed from this model since it did not have any main or interactive (with trait goal orientations)

effects on individuals' initial state goal orientations. Also not included in the revised model are the three personality variables (openness to experiences, extraversion, and self-monitoring). Similar to the goal orientation manipulation, none of these variables had their hypothesized interactive (with trait goal orientations) effects on individuals' initial state goal orientations. The lack of support for these hypothesized effects is not necessarily inconsistent with the bulk of the theory discussed and tested in the current study—in fact, there is no known empirical support for these effects. However, the lack of effects associated with the goal orientation manipulation is surprising, as noted. Previous research has consistently been able to influence individuals' motivational beliefs and attitudes through the use of task instructions. Thus, the model shown in Figure 14 is not necessarily a proposed model to be tested with future research. Instead, it simply highlights the supported linkages and suggests some relationships that future research may seek to replicate.

The final linkage shown in Figure 14 relevant to the discussion of predictors of initial state goal orientations is self-efficacy. As noted above, the relationship between pre-task self-efficacy and initial state goal orientations was observed with respect to state mastery and prove goal orientations (the relationship was marginal with respect to state avoid goal orientation). Thus, individuals' trait goal orientations and pre-task self-efficacy were the best predictors of their initial state goal orientations.

Review of Goal 2 Attainment

Contrary to the lack of effects associated with the goal orientation manipulation, the feedback manipulation yielded many hypothesized and theoretically sound effects. For example, it is not surprising that positive feedback was associated with positive affect

and performance evaluations of success (and vice versa). Nor is it surprising that these performance evaluations were associated with subsequent self-efficacy, such that more positive performance evaluations were associated with higher levels of self-efficacy and more negative performance evaluations were associated with lower levels of self-efficacy.

The results regarding subsequent state goal orientations, however, are not as clear. Similar to initial state goal orientations, subsequent state goal orientations were predicted, in part, by self-efficacy. Specifically, there was a positive relationship between self-efficacy and subsequent state mastery and prove goal orientations—i.e., as self-efficacy increased, state mastery and prove goal orientations also increased. There was no relationship, however, between self-efficacy and subsequent state avoid goal orientation. It was hypothesized that as individuals' self-efficacy beliefs increased (i.e., individuals thought that they could meet the demands of the task), their attention would shift away from trying to avoid failure (i.e., state avoid goal orientation would decrease). However, such patterns of results were not observed.

With regard to the relationship between affect and subsequent state goal orientations, the only consistent finding observed in the current study was between the experience of joy and subsequent state mastery goal orientation. Specifically, more positive levels of joy (i.e., elation) were associated with higher levels of subsequent state mastery goal orientation. It was hypothesized that the experience of both joy and distress would be positively related to subsequent state prove goal orientation, such that more positive levels of joy (i.e., elation) and distress (i.e., relief) would be associated with higher levels of subsequent state prove goal orientation. Neither joy nor distress was

associated with subsequent state prove goal orientation. Finally, similar hypotheses predicted that the exact opposite relationships would exist with respect to subsequent state avoid goal orientation, such that more negative levels of joy (i.e., depression) and distress (i.e., anxiety) would be associated with higher levels of subsequent state avoid goal orientation. This relationship was observed for affective experiences of joy at Time 3 and distress at Time 2.

As seen in the revised model shown in Figure 14 (and the conceptual and operational models shown in Figures 1 and 2, respectively), the only direct antecedents of subsequent state goal orientations are self-efficacy and affect (and previous state goal orientations, which were treated as covariates in all of the analyses). Further, as was just discussed, neither self-efficacy nor affect were reliable predictors of subsequent state avoid goal orientations. Moreover, self-efficacy was the only reliable predictor of subsequent state prove goal orientation, and this effect was, as hypothesized, identical to the effect on subsequent state mastery goal orientation. Thus, because the effects of affect on subsequent state prove goal orientation were not observed, the current model cannot account for differences between subsequent state mastery and prove goal orientations. Such a shortcoming warrants future research.

An additional area of ambiguity in the current model lies in the interactive effects of goal orientations and feedback on performance evaluations and affect. It was hypothesized that both state and trait goal orientations would interact with feedback (i.e., positive vs. negative) in their effects on performance evaluations and affect. Instead, trait goal orientations had a fairly reliable moderating effect only on performance evaluations. Likewise was true for state goal orientations with respect to affect. Neither of these

dependent variables should be any more susceptible to the effects of state or trait goal orientations than the other. Such inconsistencies in results suggest that perhaps the measures developed to assess performance evaluations and affect in the current study tapped into constructs other than those intended. Again, these results warrant additional research.

Thus, with regard to the second primary goal of the current study, state goal orientations did in fact change over time; however, the current data do not provide a clear explanation of *why* they changed over time. Not only is it important to assess *whether* state goal orientations change as a function of time (and possibly performance feedback), but identifying the processes through which these changes occur is a useful endeavor. With such information, we can better predict how different individuals may behave on the job when they are subjected to varying conditions.

Future Directions

Even after conducting the current study, an important question still remains: What determines an individual's state goal orientation when he/she first encounters a situation? The strongest predictors of individuals' initial state goal orientations in the current study were their trait goal orientations. Trait mastery, prove, and avoid goal orientations accounted for 14.5%, 27.3%, and 24.1% of the variance in initial state mastery, prove, and avoid goal orientations (respectively). This should be no surprise—the best predictor of future behavior is past behavior. However, even after adding self-efficacy as a predictor, only 19.2%, 29.1%, and 24.2% of the variance in initial state mastery, prove, and avoid goal orientations (respectively) was explained. This leaves approximately 81% of the variance in initial state mastery goal orientation, 71% of the variance in initial state

prove goal orientation, and 76% of the variance in initial state avoid goal orientation unexplained. Most likely, random and measurement error do not account for all of this unexplained variance.

The current study examined the potential influences of situational factors and other individual difference variables on individuals' initial state goal orientations. Although none of these variables had any impact on state goal orientations, question has been raised regarding the adequacy of the goal orientation manipulation (i.e., situational influences). As noted, previous research (e.g., Chambers et al., 2000; Elliot & Harackiewicz, 1996; Elliott & Dweck, 1988; Jagacinski & Nicholls, 1984; Koestner & Zuckerman, 1994; Martocchio, 1994; Steele-Johnson et al., 2000) has successfully manipulated individual's state goal orientations through the use of task instructions very similar to those used in the current study.

One reason for the manipulation failure in the current study, as suggested previously, could be that subjects did not believe the task instructions because they were transparent—i.e., they realized that the instructions were bogus. It is quite possible that subjects enter psychology experiments with the expectation that they will be lied to or manipulated, and are thus skeptical of everything that they see and hear throughout the experiment.

To avoid the transparency of verbal manipulations, researchers should explore the use of using more subtle, indirect means of manipulating state goal orientations, such as performance feedback and the task environment itself. For example, providing individuals with feedback that compares themselves to other individuals could be used to elicit high levels of state prove or avoid goal orientations. In contrast, performance

feedback that informs subjects where and how they are improving compared to previous performance could be used to elicit high levels of state mastery goal orientation. Similarly, constructing the task environment as a competition among members could be used to elicit high levels of state prove or avoid goal orientations, whereas constructing the task environment as a cooperative atmosphere that facilitates and condones learning could be used to elicit high levels of state mastery goal orientation. Manipulations such as these have been successful in previous research (e.g., feedback: (Butler, 1988); task environment: (Butler, 1989; Roberts, 1992)), but they have not been used as frequently as task instructions.

A second area that future research should explore, as highlighted above, is the process by which state goal orientations change over time. In the current study, state goal orientations did indeed change, but these changes were not fully explained. For example, perhaps the influence of individuals' interest in the task should be explored. Fisher (Fisher, 1998) found that individuals' interest in an academic course had a main effect on their state mastery goal orientation (regarding the course) at the beginning of the semester, but a moderating effect (with trait mastery goal orientation) toward the end of the semester. No specific hypotheses or propositions are offered at this time, but the roles of interest and other variables in the dynamic processes of state goal orientations should be explored.

Finally, there exists informal debate among members of the research community regarding whether individuals can be motivated by multiple state goal orientations at the same time. Some argue that at a specific moment in time, an individual can be working toward only one goal whereas others argue that it is possible for an individual to be

working toward multiple goals at the same time. Support for the former argument would be strong negative correlations between state goal orientations measured at the same point in time—if an individual is high on one dimension, he/she will be low on the others. In contrast, support for the latter argument would exist if correlations between state goal orientations measured at the same point in time were near zero—an individual's level of one state goal orientation does not necessitate any specific level of other state goal orientations. In the current study, intercorrelations among state goal orientations measured at the same point in time ranged from -.04 to .72 ($\underline{M}$ = .30). Additional research should be conducted to explore these competing hypotheses.

Limitations

Related to the last suggested direction for future research, a measure of state goal orientations was developed specifically for this study, yet researchers do not completely understand the nature of state goal orientations. Additionally, we do not yet know what a good measure of state goal orientations should look like. Should it mimic measures of trait goal orientations, changing only the point of reference to "in this situation" or "on this task"? Should it be measured *while* the individual is engaged in the situation or task rather than *after* he/she completes a wave or block? Without answers to questions such as these, researchers cannot accept results of their state goal orientations measures as fact. Thus, the measure of state goal orientations developed for the current study may not have yielded an accurate assessment of state goal orientations.

A second limitation of the current study is that the task may have been too difficult. For example the MCPL task in the current study consisted of five cues; most MCPL research uses two (DeShon & Alexander, 1996; O'Connor, Doherty, & Tweney,

1989) or three cues (Earley, Connolly, & Ekegren, 1989; Earley, Connolly, & Lee, 1989; Taylor, Hall, Cosier, & Goodwin, 1996). Across the three trial blocks, performance (i.e., average prediction error) did not change (F (2, 618) = 1.10, $p > .05$); thus, individuals did not improve with practice. Additionally, subjects' levels of self-efficacy actually decreased throughout the experiment (F (3, 927) = 96.24, $p < .01$). Thus, there is reason to believe that subjects eventually gave up at the task. One reason for this could be that subjects did not believe there was actually a formula used to predict the stock prices. In fact, many subjects upon completing the experiment said, "Once I realized that the stock prices were random, I just started guessing and then I did better!" Despite telling subjects to ignore any previous information that they may already know about the stock market, subjects may have concluded that stock prices in the current study were random when prices (and algorithms) appeared inconsistent with what they already knew.

Finally, conducting multiple univariate analyses assumes that the dependent variables are independent. To the extent that this is not true (i.e., dependent variables are correlated), Type I error increases (Tabachnick & Fidell, 2001). In the current study, state goal orientations (i.e., the primary dependent variables of interest) at Time 1 ranged from -.04 to .65, state goal orientations at Time 2 ranged from 0.00 to .65, state goal orientations at Time 3 ranged from .09 to .68, and state goal orientations at Time 4 ranged from .10 to .72. This lack of independence among dependent variables poses a limitation to the interpretation of univariate results.

Implications and Conclusion

In a variety of work settings, individuals' state goal orientations can have drastic implications for job performance. For example, high levels avoid goal orientation are

crucial for workers on a nuclear submarine—mistakes can be deadly. In contrast, high levels of mastery goal orientation are desirable for jobs in which learning and adapting are important. The current study found that giving individuals negative feedback regarding their performance leads them to evaluate their performance as a failure and experience negative affect. These negative performance evaluations and affect, in turn, lead individuals to adopt lower levels of state mastery goal orientation in the future (the effects of performance evaluations are mediated by self-efficacy). This suggests that managers, when providing their subordinates with negative feedback, should frame it in a positive light; this would likely reduce the extent to which individuals interpret the feedback as an indication of failure and experience negative affect.

In addition, the current study found that individuals' trait goal orientations continue to affect state goal orientations and their inherent processes even after initial exposure to a task. Specifically, individuals' trait mastery goal orientation moderates the extent to which individuals interpret positive and negative feedback as an indication of success vs. failure. Again, these performance evaluations have effects on subsequent state mastery goal orientation (through self-efficacy). This suggests that managers cannot assume that they can simply mold their employees to possess high levels of mastery goal orientation—individuals' traits continue to influence their task-specific motivation even after exposure to the task. Thus, incorporating trait goal orientations into the selection context may prove useful for managers who desire for their employees to approach their jobs with a focus on mastering their work and learning to adapt to new circumstances. Based on the results discussed in this paper, the current study contributes to the goal

orientation literature by providing some insight into the processes involved in the dynamic nature of state goal orientations.

Appendix A

Sample Trial

Number of Outstanding Shares: 500,000
Previous Earnings (Last Year): $1,500,400
Projected Earnings (Current Year): $2,000,000
Total Assets: $9,500,000
Total Liabilities: $750,000

What is the closing stock price (per share)?

Appendix B

Pilot Study

Purpose of Study

One of the primary issues of interest in the main study was subjects' reactions to the reception of positive vs. negative performance feedback. As such, it was imperative that relatively equal numbers of individuals received positive and negative performance feedback. In order to provide subjects with normative performance feedback that was accurate and believable, a norm had to be established.

Method

Subjects. Forty-nine undergraduate students participated as subjects in the pilot study in exchange for research participation points to be applied toward their introductory psychology class. Seven subjects were removed from analyses because they did not finish the experiment. Of the 42 subjects in the final sample, 56% were female, 34% were freshmen, and their mean age was 19.7 years (SD = 1.46). Thus, these subjects were representative of the subjects employed in the main study.

Procedure. After subjects provided their written consent to participate in the experiment (see Appendix K), they were asked to respond to the demographics survey. Upon completion of the survey, subjects read some instructions on their computer screens. These instructions included a general overview of the task as well as necessary information for performing the MCPL task. Subjects were then asked to complete three trial blocks (i.e., 45 trials). Subsequent to each trial, individuals were provided with the accuracy feedback (i.e., direction and magnitude) as described in the main study; however, positive vs. negative normative performance feedback was not provided. Upon

completion of the study, subjects were debriefed completely (see Appendix L) and thanked for their participation.

Results

Because normative data would be provided to subjects in the main study in the form of percentiles (e.g., "You scored at the 86th percentile"), it was imperative that the particular norms employed for each block came from normal distributions of error scores. To achieve this goal, outliers (i.e., individuals who scored at least three standard deviations from the mean) were eliminated on a block-by-block basis. This method resulted in a total of 35 subjects in Block 1, 40 subjects in Block 2, and 39 subjects in Block 3. Resulting univariate statistics for each distribution of error scores are displayed in the table below. The means and standard deviations were used for the respective norms in the main study.

Block	n	Mean	St. Dev.	Median	Skewness	Kurtosis
1	35	20.76	9.95	16.93	1.36	1.02
2	40	17.42	4.18	17.23	.32	.31
3	39	10.90	3.52	9.77	1.47	2.84

Appendix C

State Goal Orientations
(Adapted from VandeWalle, 1997)

INSTRUCTIONS: Please read the following statements carefully, and indicate the extent to which you agree or disagree with each statement using the scale provided. There are no right or wrong answers to these questions.

1 = strongly disagree
2 = disagree
3 = neutral
4 = agree
5 = strongly agree

1. I'm concerned about letting others realize that I have low ability on this task. **(A)**
2. I'm concerned about showing that I can perform better than others on this task. **(P)**
3. I think that this task has the opportunity for me to develop new skills and knowledge. **(M)**
4. My goal on this task is to avoid doing poorly. **(A)**
5. On this task, I am more concerned with avoiding a show of low ability than learning a new skill. **(A)**
6. I enjoy engaging in this task because I think it requires a high level of ability and talent. **(M)**
7. On this task, I am more concerned with proving my ability than with learning a new skill. **(P)**
8. My goal on this task is to develop my skills. **(M)**
9. On this task, the development of my ability is important enough to take risks. **(M)**
10. On this task, I try to figure out what it takes to prove my ability to others. **(P)**
11. I am concerned with hiding the fact that I do not know what I am doing on this task. **(A)**
12. My goal on this task is to perform well. **(P)**

Note: M = mastery; P = prove; A = avoid

Appendix D

Trait Goal Orientations
(VandeWalle, 1997)

INSTRUCTIONS: Please read the following statements carefully, and indicate the extent to which you agree or disagree with each statement using the scale provided. There are no right or wrong answers to these questions.

1 = strongly disagree
2 = disagree
3 = neutral
4 = agree
5 = strongly agree

1. I'm concerned about taking on a task at school if my performance would reveal that I had low ability.
2. I'm concerned with showing that I can perform better than my peers. **(P)**
3. I am willing to select a challenging assignment that I can learn a lot from. **(M)**
4. I often look for opportunities to develop new skills and knowledge. **(M)**
5. Avoiding a show of low ability is more important to me than learning a new skill. **(A)**
6. I prefer to avoid situations at school where I might perform poorly. **(A)**
7. I prefer to work engage in situations that require a high level of ability and talent. **(M)**
8. For me, development of my ability is important enough to take risks. **(M)**
9. I try to figure out what it takes to prove my ability to others. **(P)**
10. I enjoy challenging and difficult tasks where I'll learn new skills. **(M)**
11. I enjoy it when others are aware of how well I am doing. **(P)**
12. I prefer to work on projects where I can prove my ability to others. **(P)**
13. I would avoid taking on a new task if there was a chance that I would appear rather incompetent to others. **(A)**

Note: M = mastery; P = prove; A = avoid

Appendix E

Self-Efficacy
(Kozlowski et al., in press)

INSTRUCTIONS: Please read the following statements carefully, and indicate the extent to which you agree or disagree with each statement using the scale provided. There are no right or wrong answers to these questions.

1 = strongly disagree
2 = disagree
3 = neutral
4 = agree
5 = strongly agree

1. I can meet the challenges of this task.
2. I am confident in my understanding of how information cues are related to decisions.
3. I can deal with decisions under ambiguous conditions.
4. I am certain that I can manage the requirements of this task.
5. I believe I will fare well in this task if the workload is increased.
6. I am confident that I can cope with this task if it becomes more complex.
7. I believe I can develop methods to handle changing aspects of this task.
8. I am certain I can cope with task components competing for my time.

Appendix F

Openness to Experiences
(Costa & McRae, 1992)

INSTRUCTIONS: Please read the following statements carefully, and indicate the extent to which you agree or disagree with each statement using the scale provided. There are no right or wrong answers to these questions.

1 = strongly disagree
2 = disagree
3 = neutral
4 = agree
5 = strongly agree

1. I don't like to waste my time daydreaming. (-)
2. Once I find the right way to do something, I stick to it. (-)
3. I am intrigued by the patterns I find in art and nature.
4. I believe letting students hear controversial speakers can only confuse and mislead them. (-)
5. Poetry has little or no effect on me. (-)
6. I often try new and foreign foods.
7. I seldom notice the moods or feelings that different environments produce. (-)
8. I believe we should look to our religious authorities for decisions on moral issues. (-)
9. Sometimes when I am reading poetry or looking at a work of art, I feel a chill or wave of excitement.
10. I have little interest in speculating on the nature of the universe or the human condition. (-)
11. I have a lot of intellectual curiosity.
12. I often enjoy playing with theories or abstract ideas.

Note: - = reverse keyed item

Appendix G

Agreeableness
(Costa & McRae, 1992)

INSTRUCTIONS: Please read the following statements carefully, and indicate the extent to which you agree or disagree with each statement using the scale provided. There are no right or wrong answers to these questions.

1 = strongly disagree
2 = disagree
3 = neutral
4 = agree
5 = strongly agree

1. I try to be courteous to everyone I meet.
2. I often get into arguments with my family and co-workers. (-)
3. Some people think I'm selfish and egotistical. (-)
4. I would rather cooperate with others than compete with them.
5. I tend to be cynical and skeptical of others' intentions. (-)
6. I believe that most people will take advantage of you if you let them. (-)
7. Most people I know like me.
8. Some people think of me as cold and calculating. (-)
9. I'm hard-headed and tough-minded in my attitudes. (-)
10. I generally try to be thoughtful and considerate.
11. If I don't like people, I let them know it. (-)
12. If necessary, I am willing to manipulate people to get what I want. (-)

Note: - = reverse keyed item

Appendix H

Self-Monitoring
(Snyder, 1974)

INSTRUCTIONS: Please read the following statements carefully, and indicate the extent to which you agree or disagree with each statement using the scale provided. There are no right or wrong answers to these questions.

1 = strongly disagree
2 = disagree
3 = neutral
4 = agree
5 = strongly agree

1. I find it hard to imitate the behavior of other people. (-)
2. My behavior is usually an expression of my true inner feelings, attitudes, and beliefs. (-)
3. At parties and social gatherings, I do not attempt to do or say things that others will like. (-)
4. I can only argue for the ideas which I already believe. (-)
5. I can make impromptu speeches even on topics about which I have almost no information.
6. I guess I put on a show to impress or entertain people.
7. When I am uncertain how to act in a social situation, I look to the behavior of others for cues.
8. I would probably make a good actor.
9. I rarely need the advice of my friends to choose movies, books, or music. (-)
10. I sometimes appear to others to be experiencing deeper emotions than I actually am.
11. I laugh more when I watch a comedy with others than when alone.
12. In a group of people I am rarely the center of attention. (-)
13. In different situations and with different people, I often act like a very different person.
14. I am not particularly good at making other people like me. (-)
15. Even if I am not enjoying myself, I often pretend to be having a good time.
16. I'm not always the person I appear to be.
17. I would not change my opinions (or the way I do things) in order to please someone else of win their favor. (-)
18. I have considered being an entertainer.
19. In order to get along and be liked, I tend to be what people expect me to be rather than anything else.
20. I have never been good at games like charades or improvisational acting. (-)
21. I have trouble changing my behavior to suit different people and different situations. (-)
22. At a party I let others keep the jokes and stories going. (-)
23. I feel a bit awkward in company and do not show up quite so well as I should. (-)

24. I can look anyone in the eye and tell a lie with a straight face (if for a right end).
25. I may deceive people by being friendly when I really dislike them.

Note: - = reverse keyed item

Appendix I

Performance Evaluations

INSTRUCTIONS: Please read the following statements carefully, and indicate the extent to which you agree or disagree with each statement using the scale provided. There are no right or wrong answers to these questions.

1 = strongly disagree
2 = disagree
3 = neutral
4 = agree
5 = strongly agree

1. I think my performance on this task was a success.
2. I do not think I performed well on this task. (-)
3. I think I succeeded at this task.
4. I think my performance on this task was poor. (-)
5. I think I performed well on this task.

Note: - = reverse keyed item

Appendix J

Affect (Elation vs. Depression; Relief vs. Anxiety)

INSTRUCTIONS: Please read the following statements carefully, and indicate the extent to which you agree or disagree with each statement using the scale provided. There are no right or wrong answers to these questions.

1 = strongly disagree
2 = disagree
3 = neutral
4 = agree
5 = strongly agree

1. My performance on this task makes me sad. **(J -)**
2. I am excited about my performance on this task. **(J)**
3. Thinking about my performance on task depresses me. **(J -)**
4. My performance on this task makes me happy. **(J)**
5. I am happy when I think about my performance on this task. **(J)**
6. I am relieved when I think about my performance on this task. **(D)**
7. My performance on this task agitates me. **(D -)**
8. Thinking about my performance on this task makes me anxious. **(D -)**
9. I am nervous when I think about my performance on this task. **(D -)**
10. My performance on this task lifts a burden off of my chest. **(D)**

Note: J = joy (elation vs. depression); D = distress (relief vs. anxiety); - = reverse keyed item

Appendix K

Feedback Believability

INSTRUCTIONS: Please read the following statements carefully, and indicate the extent to which you agree or disagree with each statement using the scale provided. These items refer to the feedback that you received indicating whether you achieved your goal and how you did compared to other people. There are no right or wrong answers to these questions.

1 = strongly disagree
2 = disagree
3 = neutral
4 = agree
5 = strongly agree

1. I think that the feedback was accurate.
2. I think that the feedback was an overestimate of my performance. (-)
3. I think that the feedback was believable.
4. I think that the feedback was inaccurate. (-)
5. I think that the feedback was an underestimate of my performance. (-)

Note: - = reverse keyed item

Appendix L

Demographics

INSTRUCTIONS: Please read each of the following questions carefully and provide the most accurate answer that you can.

1. What is your sex?
   a) Male
   b) Female
2. What is your age?
3. What is your year in school?
   a) Freshman
   b) Sophomore
   c) Junior
   d) Senior
4. What is your major?
   a) Business
   b) Communications
   c) Education
   d) Engineering
   e) Mathematics
   f) Psychology
   g) Sociology
   h) Other
5. What is your overall GPA? (Indicate "No GPA" if you do not have a GPA yet)
   a) 0.0-0.5
   b) 0.6-1.0
   c) 1.1-1.5
   d) 1.6-2.0
   e) 2.1-2.5
   f) 2.6-3.0
   g) 3.1-3.5
   h) 3.6-4.0
   i) No GPA
6. What was your ACT or SAT score? (If you took both tests, please report your SAT score.)
7. What are your plans after graduation?
   a) Graduate school
   b) Work
   c) Don't know

Appendix M

Informed Consent

Subject's Name: _____ **Date:** _____

Project Title:	Can You Make It On Wall Street?
Investigators' Names:	Brad Chambers and Dr. Richard DeShon
Description and Explanation of Procedure:	This study investigates how individuals use multiple sources of information when making decisions. In this experiment, you will be asked to predict stock market prices based on a variety of factors as well as answer several questions.
Estimated time required:	2 hours (4 half-hour credits)
Risks and discomforts:	None

Thank you for participating in our study! If you have any questions or concerns about this study, please feel free to contact either Brad Chambers at 355-2171 or Professor Richard DeShon at 353-4626. If, at any time, you feel your questions have not been adequately answered, you may speak with the Head of the Department of Psychology (Dr. Neal Schmitt, 355-9563), or the University Committee on Research Involving Human Subjects (Dr. David E. Wright, 355-2180). Your participation in this research is voluntary. You are free to withdraw this consent and discontinue participation in this project at any time without penalty. If you choose to withdraw from the study prior to its completion, you will receive credit only for the time you have spent in the study. You can be removed from the study for disruptive behavior. If you are removed from the study, you will not receive credit for your participation. Within one year of your participation, a copy of this consent form will be provided to you upon request.

I freely give permission for my participation in this study.

_____

Signature

Appendix N

Task Instructions

In this study, you will be asked to assume the role of a stockbroker. Basically, a *stockbroker* is someone who buys and sells stocks on the stock market for other people--a stockbroker is hired by an investor to take care of all the technical stuff.

Often times, stockbrokers are asked by their clients (the investors) to predict the closing price of certain stocks. The *closing price* of a stock is the amount of money that the stock is worth at the end of the day. When stockbrokers are asked to predict the closing price of stocks, they take many things into consideration. Specifically, the following factors are important when predicting the closing prices of stocks:

1) *Number of Outstanding Shares:* The total number of shares ('pieces' of a stock) that are owned by stock holders.
2) *Previous Earnings (for last year):* The total amount of money that a company earned last year.
3) *Projected Earnings (for the current year):* The total amount of money that a company estimates that it will earn in the current year.
4) *Total Assets:* The total value (in dollars) of a company's assets, including property, inventory, profits, etc.
5) *Total Liabilities:* The total value (in dollars) of a company's liabilities (what it owes), including building rent, wages, utility costs, loans, etc.

It is very important that you ignore any information that you may already know about the stock market and how these various factors influence stock prices.

As you may have already guessed, it is very important for a stockbroker to be able to make accurate predictions. If he/she overestimates the closing price of a stock, people may hold onto their stocks for too long because they think it will be worth more later--in this case, they would lose money because they should have sold the bad stock and bought

a better one. If the stockbroker underestimates the closing price of a stock, people may sell the stock too early--in this case, they would also lose money because they sold the stock too soon. In either case, the investor would lose money because the stockbroker's prediction was not accurate.

In this study, you will be asked to predict the closing prices of some stocks based on the five factors that I described earlier. For example, you will be presented with the following information, and you will be asked to predict the stock price.

The following is the information for the XYZ company.
Number Outstanding Shares: $ 500,000
Previous Earnings (last year): $ 1,500,400
Projected Earnings (current year): $ 2,000,000
Total Assets: $ 9,500,000
Total Liabilities: $ 750,000

You will have to figure out how all of the different factors and information go together to come up with the stock prices. Again, it is very important that you ignore anything that you may already know about the stock market and how stock prices are created (except for the information that I have given to you).

You will be able to use some scrap paper and the calculator on your computer. To switch between the experiment and the calculator, hold down the ALT key then press the TAB key at the same time. Please be careful not to close either window, just switch between the two. Does everyone understand what I am talking about?

Throughout this study, you will receive two kinds of feedback. First, after each stock price that you predict, you will be told how accurate your predictions are compared to the actual stock prices. Second, at various times throughout the study, you will be

given feedback indicating how accurate your predictions are compared to the predictions of other people.

As you have probably learned in your psychology classes, the feedback that researchers provide to participants regarding their performance is often inaccurate or deceptive. That is, researchers often "lie" to their participants as part of their studies. The study that you are participating in today is not like these other studies. Instead, the feedback that you are given today will be 100% truthful. It is very important that you realize this.

In addition to predicting the stock prices, you will be asked to answer several questions at various points throughout the study. In doing so, you will answer some of the same questions more than once. Even though it may seem tedious, these questions are very important, so please answer each item carefully and honestly each time.

ONE OF THE THREE GOAL ORIENTATION MANIPULATIONS

MASTERY: Successful performance on this task requires the use of skills that must be developed and practiced. At first, you should expect to make a lot of mistakes, but this is ok because you can learn from your mistakes. Through practice, though, you will be able to develop the necessary skills to increase your performance. It is important for you to remember that the more practice you have, the better you will be able to perform on this task. Thus, you should focus your attention on developing your skills and mastering the task rather than on the mistakes that you make.

PROVE: Successful performance on this task is based on skills and abilities that either you do or do not already have. We are interested in comparing your performance on this task to that of other individuals so that we can examine different individuals' underlying abilities to perform this task. Some students really stand out because they do so much better than everyone else; if you perform better than most other students do, this would indicate that you have more ability than they do. So you should really focus on demonstrating how good you are. Remember, you already have the ability.

AVOID: Successful performance on this task is based on skills and abilities that either you do or do not already have. We are interested in comparing your performance on this task to that of other individuals so that we can examine different individuals' underlying abilities to perform this task. Some students really stand out because they do so much worse than everyone else; if you perform worse than most other students do, this would indicate that you have less ability than they do. So you should avoid making mistakes that will make you appear incompetent. Remember, you already have the ability.

Now that I have described to you what you will be doing today, I would like for you to answer a few more questions.

Appendix O

Debrief

The experiment you just completed was concerned with how individuals' motivation changes across time and after receiving feedback about their performance. The problems that you were asked to solve were designed so that they would be impossible for you to solve. The algorithm used to determine stock prices in this experiment was nearly impossible to guess. Thus, because the experiment was designed in this manner, you had very little chance (if any) of success. It is very important that you realize that your performance in this experiment was not an accurate depiction of your actual abilities.

Please do not discuss this experiment with anyone else, for it is important that future subjects know nothing about the experiment before they begin.

The data you provided today is important to us, and we appreciate your help. If you have any questions or comments about today's experiment, please talk to the experimenter now or contact Brad Chambers, Department of Psychology, 22 Baker Hall, (517) 355-2171.

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