NOTE TO USERS

DISSERTATION

AFFECT, DISPOSITION, AND COGNITION IN MOTIVATION: LINKING THEM BACK TOGETHER

Submitted by

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In partial fulfillment of the requirements

For the Degree of Doctor of Philosophy

Colorado State University

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Spring 2005

COLORADO STATE UNIVERSITY

March 31st, 2005

WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY J. RAGAN WARD NEILSON ENTITLED AFFECT, DISPOSITION, AND COGNITION IN MOTIVATION: LINKING THEM BACK TOGETHER BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

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ABSTRACT OF DISSERTATION

AFFECT, DISPOSITION, AND COGNITION IN MOTIVATION:

LINKING THEM BACK TOGETHER

In modern motivation literature, studies of the affective and dispositional components of motivation have been relatively scarce. Therefore, this study examines how motivational traits and mood jointly influence the self-selection of level of goal difficulty. The participants ($N = 294$, 73% female, 84% Caucasian) were undergraduate students from a large public university in the western United States. The Motivational Trait Questionnaire (MTQ) was administered as a measure of trait motivation. Participants' moods were measured with the PA scale of the Positive and Negative Affect Schedule (PANAS). Participants were introduced to a problem-solving task and asked to self-set goals for their performance on this task. Results of the analyses indicated that personal mastery and competitive excellence were positively correlated with self-set level of goal difficulty, while motivation anxiety was uncorrelated with self-set level of goal difficulty. PA was positively correlated with the self-set level of goal difficulty. Moderated regression analyses revealed that PA moderated the relationship between competitive excellence and self-set level of goal difficulty; however, the nature of this interaction was not as predicted. The results indicated that as PA increased the relationship between competitive excellence and self-set level of goal difficulty decreased. The limitations and conclusions of this study are discussed.

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DEDICATION

This manuscript is dedicated to my husband, Kerry, my parents, Robert and Barbara Ward, and my sisters, Michelle Alvey and Carlye Wannenmacher. Their constant encouragement, love, support, and understanding is what allowed me to accomplish this goal. I thank my parents for passing to me a passion for learning and an appreciation for education. Their influence and constant support led me to set my goals high. I thank my sisters for listening to my complaints and encouraging me when the road to success seemed impossible. I thank my husband for loving me when I have been difficult to love and for having so much faith in me that I had the self-confidence to press on towards my goal.

I also dedicate this manuscript in memory of Rita Ward and the triplets, Sophie, Naomi, and Ezra. In the loss of these beloved, I gained clarity of the big picture and perspective on what is important in life.

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CHAPTER 1: INTRODUCTION AND OVERVIEW

Early motivation research emphasized both affect and disposition in explaining motivated behavior (e.g., McClelland, Atkinson, Clark, & Lowell, 1953; Tomkins, 1968). However, as various perspectives in psychology took their turn at center stage (e.g., Behaviorism and Cognitive Psychology), research involving the affective and dispositional components of motivation virtually disappeared and were replaced by cognitive approaches to motivation (e.g., goal setting theory). Recently, there has been a resurgence of interest in the dispositional approach to motivation (e.g., VandeWalle, Brown, Cron, & Slocum, 1999), but affect, with respect to motivation, has remained relatively scarce in the literature. Modern motivation research often divides the motivational process into two components: (1) goal setting and (2) goal striving. This study focuses on goal setting. Specifically, in this paper I explore how moods, dispositions, and cognitions might jointly influence the goal setting component of the motivational process (see Figure 1).

A Brief History

Joint Influence of Affect and Disposition in Motivation

McClelland[1] and his colleagues (McClelland, et al., 1953) believed that achievement motivation was based on both affect and disposition. With their model, which they called

[1] A more complete presentation of McClelland and his colleagues' arguments for the affective basis of motivation can be found in *The Achievement Motive* (McClelland, Atkinson, Clark, & Lowell, 1953).

the *Affect Arousal Model*, they theorized that humans are born with the desire to feel good and avoid feeling badly. This constant desire for positive affect is referred to as the hedonic motive. McClelland et al. went on to say that individuals develop achievement dispositions based on early associations between affect and behavior. If achievement behavior was repeatedly associated with positive affect, individuals developed an *approach disposition*, which means they viewed achievement situations as a chance to satisfy the hedonic motive (i.e., increase or maintain positive affect). In contrast, if achievement behavior was repeatedly associated with negative affect, individuals developed an *avoid disposition*, which means they viewed achievement situations as threatening or unsatisfactory to the hedonic motive (i.e., increase or maintain a negative affect). Within the framework of the *Affect Arousal Model*, every time an achievement situation is presented, individuals' learned dispositions and affects (hedonic desires) jointly form the basis of their motivation. That is to say, disposition and affect influence whether or not we will be motivated to pursue a particular endeavor.

John Atkinson (1957), a student of McClelland, developed his own theory of achievement motivation that was more behavioral in nature. Like McClelland, Atkinson referred to internal motives; however, he developed a formula for achievement motivation which included elements of motive (i.e., a disposition to strive), expectancy (i.e., an anticipation that behavior leads to a consequence), and incentive (i.e., attractiveness of the consequence of a behavior). Although he did not specifically address the ways in which affect impacts motivation in his theory, the joint influence of disposition and affect are still present. According to Atkinson (1957), a "motive" is conceptualized as "a disposition to strive for a certain kind of satisfaction, as a

satisfaction in the attainment of a certain class of incentives" (p. 360). Satisfaction is descriptive of an affective or mood state; when one is satisfied they are experiencing positive affect. Therefore, a rewording of Atkinson's description of the motive component would be: a disposition to strive for positive affect. At this point in the evolution of the achievement motivation literature, affect and disposition are still tied together to jointly influence motivation.

Through the 1960's, there was at least one researcher who continued to view affect as primary to motivation. Tomkins (1968) theorized that affects are essential for human motivation, stating that "affects, rather than drives, are the primary human motives" (p. 324). Tomkins presented physiologically-based arguments for the importance of emotions to motivation, and in contrast with McClelland and Atkinson, there is no dispositional component to Tomkins' theory. However, his ideas did not catch on in mainstream motivation research.

The Fall of Dispositions and Affect in Motivation

A primary reason why dispositional theories of motivation fell out of favor was because personality theory as a whole came under fire. Beginning in the 1960s, a debate on the merits of disposition versus situation ensued for over two decades. Some psychologists (e.g., Bourne, 1977; Farber, 1964; Mischel, 1968; Nisbett & Ross, 1980) argued against the notion that stable dispositions direct behavior. These psychologists believed instead that personality psychologists had failed to adequately consider the power of the situation, or environment, to direct human behavior. As social and cognitive psychology grew in popularity in the literature, research on personality became unpopular and scarce. Cognitive theories of motivation dominated the literature during this time,

which left little room for not only dispositional approaches to motivation, but also for affective theories of motivation.

The cognitive perspective influenced all of psychology in the 1960s and 1970s, including motivation research. Vroom's (1964) VIE theory, along with Locke's goal-setting theory (1968), became two popular frameworks for studying achievement motivation. Vroom, like Atkinson, developed a quantifiable formula for predicting motivated behavior. This formula stated that valence (i.e., anticipated satisfaction with outcome), instrumentality (i.e., belief that performance leads to rewards), and expectancy (i.e., belief that effort leads to performance) multiplicatively determine motivation. Also similar to Atkinson, Vroom indirectly included an element of affectivity in his model with his valence component. This affective element was couched in cognitive terminology, as valence was defined as the *anticipation* of *satisfaction*, (recall that satisfaction is a label for positive affect). Another way to word Vroom's definition of valence is to say that it is the anticipation that positive affect is associated with the outcome. Although affect is still indirectly included in Vroom's model of motivation, disposition is entirely absent; there are no references to internal motives or drives in Vroom's model.

Working from the cognitive perspective, Locke and his colleagues (Locke, 1968; Locke & Latham, 1984) developed goal setting theory, which at its core suggests that specific, challenging goals lead to better performance than "do your best" goals (Bryan & Locke, 1967; LaPorte & Nath, 1976; Latham & Baldes, 1975). Goal setting theory purports that people's cognitions are what drives their actions, and these cognitions often take the form of goals. Goal setting theory has been one of the most widely implemented

theories of motivation in applied settings (Spector, 2000), particularly in the workplace (e.g., Nicol & Hantula, 2001; Strickland & Galimba, 2001; Wang, 2002) and in sport and exercise (e.g., Boyce, Wayda, Johnson, Bunker, & Elliot, 2001; Lane & Streeter, 2003; Ward, & Carnes, 2002; Weinberg, 2002). Being purely cognitive in nature, all elements of affect and disposition are absent from this theory.

The Reawakening of Dispositions and Affect in Motivation

Beginning in the 1980's, many achievement motivation researchers began refocusing on motivational traits (e.g., Button, Mathieu, & Zajac, 1996; Dweck, 1986; Dweck & Legget, 1988; Heggestad & Kanfer, 2000; Kanfer & Heggestad, 1997; VandeWalle, 1997). This modern trait approach to motivation was clearly derived from the dispositional motivational theories of McClelland and Atkinson. Much of the modern research on motivational traits has focused on the dimensionality of achievement motivation (the dimensionality of achievement motivation will be discussed later in more detail). The influence of disposition in motivation has been studied across domains such as sport psychology (e.g., Duda & Nicholls, 1992; Standage & Treasure, 2002) and industrial and organizational psychology (e.g., Button, Mathieu, & Zajac, 1996; VandeWalle, Brown, Cron, & Slocum, 1999).

In addition to the disposition approach, there has been a renewed interest in integrating affect into both empirical studies of motivation (e.g., Erez & Isen, 2002; Gendolla & Krüsken, 2002; Rhoades et al., 2001) and motivational theory (e.g., Gendolla, 2000; Linnenbrink & Pintrich, 2002; Schwarz & Bohner, 1996). Most of the current literature has focused on integrating affect and cognitive aspects of motivation. For example, Erez and Isen (2002) investigated the impact of affect on expectancy theory,

finding that positive affect improves performance by increasing perceptions of expectancy, valence, and instrumentality. Gendolla and Krüsken (2002) examined the impact of mood on cognitive evaluations of the amount of effort needed to perform a task. They demonstrated that effort towards a task was highest when: (1) individuals were in a negative mood, (2) the task was perceived as difficult, and (3) a reward was contingent upon performance. Linnenbrink and Pintrich (2000) proposed a model for a bidirectional relationship between affect and achievement goals, citing evidence that affect influences achievement goal adoption and achievement goal adoption influences subsequent affect. So, affect has begun to reemerge in the modern motivation literature.

However, an investigation of the history of the achievement motivation literature suggests to this author that there is a need to jointly consider multiple aspects of achievement motivation when predicting human behavior—cognition, disposition, and affect. While some researchers have examined the impact of disposition and cognition on the motivational process (e.g., VandeWalle et al., 1999) and others have studied the joint influence of affect and cognition on motivation (e.g., Erez & Isen, 2002), this author can find no empirical examination of all three aspects—cognition, disposition, and affect—as they relate to the motivational process. Therefore, the purpose of the present theory and research is to link the affective and trait approaches to a popular cognitive model of motivation, goal-setting theory, to better understand individuals' achievement motivation. I will begin by reviewing Locke's goal-setting theory. I will provide a summary of the contemporary motivational trait theories, followed by a review of the literature connecting affect to motivation. Finally, I will discuss the proposed relationship among

these three aspects of motivation (i.e., trait, affect, and cognition) and state the specific hypotheses to be examined in this study.

Goal-Setting Theory

The underlying assumption of Locke's goal-setting theory is that peoples' cognitions or thoughts can regulate their actions. These cognitions can be expressed in the form of goals, which represent what people would like to attain at some point in the future. By setting goals, individuals create direction for their behavior. Locke and Latham (2002) summarized the core findings of goal-setting research, helping us to understand the mechanisms through which goals motivate individuals towards improved performance: (1) goals energize and direct behavior (e.g., Bryan & Locke, 1967a; Locke & Bryan, 1969), (2) goals work best to motivate behavior when they are specific and challenging (e.g., Latham & Baldes, 1975; Winters & Latham, 1996), and (3) goals increase effort and persistence (e.g., LaPorte & Nath, 1976).

Goals direct behavior by helping individuals to focus their attention on goal-relevant activities and information (Rothkopf & Billington, 1979). When people adopt a goal, they are more likely to pay attention to information that relates to that goal than information that is unrelated to the goal. This focused attention is one mechanism through which goals can lead to better performance.

Research has shown that to improve performance, goals need to be specific (versus general) and difficult or challenging (versus easy; e.g., Latham & Baldes, 1975; Latham & Saari, 1982; Locke & Latham, 1990; Punnett, 1986; Tubbs, 1986). For example, Punnett (1986) assigned a group of female seamstresses to one of two conditions. In the first condition the seamstresses were told to "do your best", while in the second condition

they were assigned a challenging, but attainable, specific goal. The seamstresses in the specific, challenging goal condition outperformed those in the general goal condition. The reason that specific and difficult goals lead to better performance is because they produce greater effort or striving. According to Locke and Latham (2002), goal specificity leads to improved effort and performance because it reduces the ambiguity over what individuals are actually striving toward.

Another important factor to goal setting is whether goals are assigned or self-set (participatively set goals). Goals can be assigned by any number of people, such as experimenters, managers, athletic coaches, teachers or parents. Some researchers have found that assigned goals are equally effective as, or even more effective than, self-set goals in improving performance (e.g., Boyce & Wayda, 1994; Latham & Steele, 1983; Racicot, Day, & Lord, 1991). In contrast, others have found that self-set goals lead to better performance than assigned goals (e.g., Erez, 1986; Erez & Kanfer, 1983). In an attempt to clear up these conflicting findings, Latham, Erez, and Locke (1988) conducted experiments which concluded that when goals are assigned with an explanation or justification they are just as effective at improving performance as are self-set goals.

However, the literature also suggests that the influence of assigned goals on performance is *mediated* by personal, self-set goals (Locke, 1991; Locke, 2001). It seems that even when an individual is assigned a goal, she must choose to make it a personal goal in order for it to improve performance. The notion of goal commitment is essential here; an individual must decide to be personally committed to an assigned goal in order for that goal to impact performance. The present study concerned only self-set or personal goals. The focus on self-set goals was not only due to the research findings

discussed above, but also because in many workplace situations (and sport, educational, and family situations) individuals are often not assigned goals and must develop their own goals. My interest is in the factors that influence goal adoption in situations where no assigned goal has been provided.

Goal-setting theory has become one of the most dominant theories of motivation in workplace psychology (Donovan, 2002; Spector, 2000), and therefore is accepted as one of the best explanations of the mechanism underlying motivation. The question that is important to this study is why some people choose to self-set specific and difficult goals while others choose to self-set general goals, easy goals, or reject goal-setting all together. Personal variables such as self-efficacy (e.g., White & Locke, 2000), conscientiousness (e.g., Barrick, Mount, & Strauss, 1993), and achievement motivation (e.g., Matsui, Okada, & Kakuyama, 1982; VandeWalle, Cron, & Slocum, 2001) have been found to be related to goal-setting. In this study, the relationships among trait achievement motivation, mood, and goal-setting theory were examined.

Trait Achievement Motivation

Approach vs. Avoidance Motivation

Dispositional or trait achievement motivation (referred to as "Motivational traits" in this study) can be organized into two broad categories: (1) approach motivation, and (2) avoidance motivation. Broadly speaking, approach motivation is described as being motivated to personally excel or to exceed the performance of others, while avoidance motivation is described as being motivated to avoid failure-threatening situations or tasks. This distinction is quite old and can be seen in several historical theories of achievement

motivation, including Murray's (1938, 1943), McClelland's (1953), and Atkinson's (1957) motivation theories.

McClelland believed that motivational dispositions developed in childhood through the associations between affective states and achievement situations. As children, achievement standards are imposed upon individuals by the adults in the environment. Caregivers will place *standards of excellence*, as defined by that particular culture, on a child. For example, parents expect their children to master the use of eating utensils and feed themselves by a certain age. A child experiences an affective state in response to meeting this standard (i.e., positive affectivity) or failing to meet this standard (i.e., negative affectivity). McClelland and his colleagues believed that the accumulation of multiple associations between achievement standards and affective responses led to the formation of a particular achievement motivation disposition in adulthood, either an approach disposition or an avoidance disposition. For individuals who associated achievement behavior predominantly with positive affect, an approach disposition formed. For individuals who associated achievement behavior predominantly with negative affect, an avoidance disposition formed.

Atkinson's conceptualization of approach and avoidance motives built greatly off of the work of McClelland (McClelland, 1951; McClelland, Atkinson, Clark, & Lowell, 1953). Atkinson (1957) viewed motives as stable dispositions that are formed during early childhood. He described the approach motive as a disposition to approach success and described the avoidance motive as a disposition to avoid pain or actions that may subject one to pain. He stated that people who have a strong avoidance motive have a "capacity for experiencing shame and humiliation as a consequence of failure" (p. 360).

Atkinson made predictions about the relationship between individuals' motivational dispositions and goal setting behavior. He developed the risk-taking theory (Atkinson, 1957; Atkinson, 1958), which is the theory that individuals higher in approach motive than avoidance motive will prefer moderate goals, while individuals higher in avoidance motive than approach motive will prefer extremely easy goals, extremely difficult goals, or prefer to avoid task-engagement altogether. It other words, individuals with a stronger approach motive will take calculated risks by setting goals that are challenging, yet obtainable. Those with stronger avoidance motives than approach motives, if forced to set a goal, will prefer to set safe goals where there is no risk of failure or impossible goals with extreme risk. Atkinson reasoned that someone with a stronger avoidance motive would set an impossible goal with extreme risk because there would be no shame in not obtaining such a goal; no one would be likely to obtain it. However, if an individual with a stronger avoidance motive is left to self-set goals, they would avoid specific goal setting and prefer to just do their best. Atkinson's theory gives great insight into how individuals may determine the goals they will initiate. There are other, more contemporary, trait motivation theories that incorporate ideas of approach and avoidance trait motivation that must be discussed.

Modern Motivational Trait Theory

Building off of their predecessors, a more recent conceptualization of approach and avoidance motivation is seen in the work of Kanfer and Heggestad (Kanfer & Heggestad, 1997; Heggestad & Kanfer, 2000). They theorized that motivational traits[2] fall under one

[2] Heggestad and Kanfer (2000) also theorized that there are motivational *skills*, which they define as "integrated, self-regulatory competencies engaged during goal striving" (p. 753). Motivational skills are not stable and trans-situational like

of two broad categories: (1) the achievement trait complex, or (2) the anxiety trait complex. Motivational traits are defined as "stable, trans-situational individual differences in preferences related to approach and avoidance of goal-directed effort expenditures" (Heggestad & Kanfer, 2000, p. 753). The *achievement trait complex* includes all motivational traits that can be characterized by approach tendencies; specifically, Kanfer and Heggestad (1997) propose the traits of personal mastery and competitive excellence. Individuals high on the personal mastery trait are self-referent in terms of evaluating their own improvement. They seek to set higher and higher achievement goals for themselves, even in the face of obstacles. Individuals high on the competitive excellence trait are other-referent in terms of evaluating their success. In setting performance goals, these individuals seek to outperform others and demonstrate their abilities to others. Most researchers (e.g., Dweck, 1996; VandeWalle, 1997; Button et al. 1996) consider personal mastery and competitive excellence to be independent traits, therefore people can be high on either or both simultaneously.

The *anxiety trait complex* includes all motivational traits that can be characterized by avoidance tendencies. Specifically, Kanfer and Heggestad (1997) proposed the traits of failure avoidance and achievement anxiety. Individuals high on the failure avoidance trait actively try to avoid achievement goals and situations. Individuals high on the achievement anxiety trait have a tendency to respond with anxiety-emotions when confronted with achievement goals or situations where failure is a potential outcome of behavior. Failure avoidance trait and achievement anxiety trait have not been empirically distinguishable (see Study 1 and Study 2 in Heggestad & Kanfer, 2000) and therefore are

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motivational traits. They are considered to be influenced by motivational traits and the immediate environment and are also considered malleable through development.

combined to form the motivation anxiety trait. Heggestad and Kanfer provided evidence for the validity of the distinction and relative independence of the three motivational traits: personal mastery, competitive excellence, and motivation anxiety.

Trait Achievement Motivation and Goal Setting

Based on the definitions of the motivational traits, one can make predictions about how they influence goal-setting, specifically the nature and difficulty of the goals people choose. Since personal mastery and competitive excellence are approach dispositions, individuals high in either of these traits should set moderately challenging goals. Individuals who are high in personal mastery should prefer to set goals that are personally challenging so that they can acquire new information and improve their personal performance. For example, a salesperson who is high in personal mastery may set a goal of increasing the number of sales he or she makes in comparison to last year's personal sales record. Individuals who are high in competitive excellence should also prefer to set moderately challenging goals; however, the frame-of-reference for the goals they adopt may differ from the goals set by individuals low in competitive excellence. The goals set by individuals high in competitive excellence should reflect a desire to outperform others or demonstrate one's knowledge, skill, or ability to others, which makes the standard other-referenced or normative. For example, salespeople who are high in competitive excellence may set goals of selling more than other salespeople in the office. Individuals who are low in competitive excellence would most likely refrain from adopting goals that are other-referenced, instead preferring self-referenced goals (if high in personal mastery) or avoiding goal setting altogether (if high in motivation anxiety).

One can also make predictions about individuals high in the avoidance trait, motivation anxiety. Individuals high on this trait should prefer to reject goal-setting all together if that is an option. Because of the anxiety they associate with achievement situations and achievement goals, they avoid adopting achievement goals, especially if they are challenging, yet obtainable. If they feel pressured to set a goal, individuals high in motivation anxiety may adopt very easy or extremely difficulty goals, as both are considered non-threatening. Very easy goals should be easily obtained and extremely difficult goals are viewed as unobtainable by virtually anyone, which means there is no disappointment or shame in failing to meet such a goal.

Need for achievement is an approach disposition and may be considered roughly equivalent to a combination of personal mastery and competitive excellence. A number of studies have examined the relationship between dispositional need for achievement and goal setting (e.g., Matsui, Okada, & Kakuyama, 1982;Yukl & Latham, 1978). All of these studies found that individuals with high need for achievement set more difficult goals than individuals with low need for achievement. For example, Matsui et al. (1982) measured undergraduate, Japanese-speaking students' need for achievement and their self-set goal levels for a perceptual speed task. Matsui and colleagues found that need for achievement was positively correlated with level of goal difficulty. Furthermore, they found that goal difficulty was positively correlated with total number of attempts on the task (effort), which supports goal setting theory. However, Matsui et al. did not break down achievement motivation into the separate traits of personal mastery or competitive excellence, nor did they examine motivation anxiety.

VandeWalle and his colleagues (VandeWalle, Brown, Cron, & Slocum, 1999; VandeWalle, Cron, & Slocum, 2001) have studied the relationship between trait achievement motivation and goal setting. In a 1999 field study, VandeWalle et al. measured trait achievement motivation of sales representatives and found that learning goal orientation (similar to personal mastery) was positively related to goal setting; those high in learning goal orientation set high personal sales goals. In 2001, VandeWalle et al. conducted a study where they measured students' trait achievement motivation and goal setting in terms of setting letter grade goals for a college course. Once again, they found a positive relationship between learning goal orientation and level of goal setting. Similar to their 1999 study, those with high learning goal orientation set high letter grade goals. VandeWalle et al. (2001) found a non-significant relationship between proving goal orientation (similar to competitive excellence) and goal setting. This result is not surprising given their measure of goal-setting; the type of goals the participants of the VandeWalle et al. (2001) study were asked to adopt were more learning or mastery in nature. Finally, they found a negative relationship between avoidance goal orientation (similar to motivation anxiety) and goal setting; those with high avoidance goal orientation set low letter-grade goals. In this particular study, those participants who were high in avoidance goal orientation and wanted to avoid goal setting altogether would have to drop out of the study. If they stayed in the study, there was no opportunity to set an unobtainable, high, letter-grade goal, as it is likely that several students receive 'A's in their courses. Therefore, it fits with traditional achievement motivation theory that the participants high in avoidance goal orientation adopted easily obtainable, low letter grade goals.

Hypotheses Regarding Traits and Goal Setting

Based on the review of the literature on trait achievement motivation as it relates to goal setting, specific hypotheses are made for the current study. This study used a laboratory design to investigate the relationships among motivational traits and goal setting, specifically, goal difficulty selection. First, participants' personal mastery, competitive excellence, and motivation anxiety were measured. Then participants were introduced to the experimental task and asked to select a goal level, ranging in difficulty from extremely easy to extremely difficult goals. They were also given an option of, "I prefer not to set a goal."

Based on the review of the literature, trait personal mastery and trait competitive excellence should have a direct impact on goal setting. People high in personal mastery and/or competitive excellence should set higher goals than people who are low on these traits.

H1: The personal mastery trait correlates positively with the level of self-set goal difficulty.

H2: The competitive excellence trait correlates positively with the level of self-set goal difficulty.

Participants who are high in trait motivation anxiety should seek to avoid achievement goal setting all together. Therefore, individuals who are high in trait anxiety should set no goal (i.e., "I prefer not to set a goal") or very low-difficulty goals more often than people low on this trait. When these individuals adopt a goal, they should set lower goals than individuals who are low in trait anxiety.

H3: There is a higher mean level of the trait motivation anxiety among the participants who choose the *no goal* option than among the participants who choose to set a goal.

H4: The motivation anxiety trait correlates negatively with goal difficulty.

Affect and Motivation

There are several theories and models for how emotions impact motivation (e.g., McClelland et al., 1953; Tomkins, 1968), especially motivation-related cognitions (e.g., Atkinson, 1957, 1964; Forgas, 1995a; Gendolla, 2000; Linnenbrink & Pintrich, 2002). An overview of two modern theories that relate to this study are discussed; however, first the definitions of affect, mood, and emotion are provided and the distinctions among these constructs made.

Affect, Emotion, and Mood

According to Rosenberg (1998), the term affect is a general term that encompasses three constructs: affective traits, emotions, and moods. Affective traits are relatively stable across the life-span and are pervasive to one's disposition. Individuals may have positive affectivity (positive affective trait) or negative affectivity (negative affective trait) (Watson & Tellegen, 1985). Emotions, in contrast, are intense affective experiences that are relatively short in duration and are tied to specific events. With emotions, individuals are usually aware of why they are experiencing the affectivity as they can attribute the experience directly to a particular event. Finally, moods are less intense affective experiences that are relatively long in duration compared to emotions, but less enduring than affective traits. Additionally, they are diffuse, meaning they cannot be readily attributed to a specific event. Individuals may experience moods in a range of intensity,

but they cannot easily determine why they are experiencing it. In this study, I will focus on moods, as it has been suggested that the relationship between moods and motivated behavior is least understood (Gendolla & Krüsken, 2002).

The Mood-Behavior Model

Gendolla (2000) proposed an intriguing model of how mood influences motivated behavior. He theorized that mood impacts one's effort and persistence because of its "informational impact." Informational impact simply refers to the idea that moods can affect our cognitions. Gendolla reasoned that mood is one piece of information individuals will use in making judgments or decisions. How much weight people give to mood in making judgments will depend on the nature of the judgment and how much other decision-relevant information is available. Basically, the more subjective the judgment (i.e., it is evaluative in nature and we have little other information to inform us), the more weight people give to their moods in influencing their judgments or decisions. In the context of judging how much effort or persistence to give on a task, mood should influence this judgment if the task is unfamiliar or not very well known.

Gendolla also theorized that moods influence individuals' levels of effort and persistence through the priming of memory. Moods are considered here as nodes in individuals' memory networks and when a mood node is activated, associated memory nodes will also be activated. Therefore, moods may influence how much effort and persistence individuals put towards a task because they bring forth certain memories that may influence these decisions. A positive mood could activate memories of success on a similar task. This may lead one to decide to put forth greater effort or persistence on the task, believing this effort will pay off. Alternatively, a negative mood could activate

memories of failure on a similar task, which may lead one to decide to lower effort or terminate the task altogether. However, the central concern in this study was not with effort or persistence towards a goal, but was with goal choice or initiation.

More relevant to goal choice, Gendolla's mood-behavior model also proposed that mood influences one's decision to initiate a task because mood has a "directive impact." A directive impact refers to the idea that moods influence our hedonic motive. Once again, hedonic motive is defined as peoples' tendencies to attempt to maximize their positive affect and minimize their negative affect; people strive to feel good and avoid feeling badly. Note that this notion is identical to the aforementioned argument given by McClelland et al. (1953) for why affect is the basis for motivation. According to Gendolla, how much influence our hedonic motive has on the initiation of a task depends on: (1) how salient our current moods are, (2) how intense our current moods are, and (3) how instrumental we perceive the task to be in achieving the hedonic motive.

There are many times when individuals are faced with an achievement situation and must decide whether or not to initiate a goal. They may also have to decide how difficult of a goal they will initiate. Using the "directive impact" component of the mood-behavior model for a framework, individuals should first evaluate (unconsciously or consciously) their current mood as either positive or negative. Then individuals determine how instrumental each goal option would be in maintaining or elevating his or her current mood. Because of the hedonic motive, individuals should choose the goal that he or she perceives as being most instrumental in maintaining a positive mood or repairing a negative mood. Of course, all of this may be happening outside of individuals' conscious awareness. For example, consider a student who is setting a goal for how much studying

to accomplish in one day. According to the mood-behavior model, the student would evaluate their current mood state. If currently in a positive mood, the student will need to set a goal that will maintain or increase this positive mood. It is generally considered more difficult to maintain or increase a positive mood, so the student may have to adopt a challenging, yet attainable study goal in order to satisfy the hedonic motive. If currently in a negative mood, the student will need to set a goal that will repair this mood. It is generally thought that when in a negative mood, almost any task will elevate that mood. Therefore, the student can set an easy study goal and still satisfy the hedonic motive. Research by Gendolla and Krüsken (2002) has provided initial support for some of the basic tenets of the mood-behavior model.

The Affect Infusion Model

Forgas (1995a) developed the Affect Infusion Model (AIM), in which he proposed four cognitive processing strategies that individuals may use when making decisions: *direct access*, *motivated*, *heuristic*, and *substantive* processing. Cognitive processing strategies refer to the way in which we use information, thoughts, feelings, memories, etc. to form judgments or decisions. According to the AIM, the type of processing strategy an individual adopts is influenced by moods, among other things (e.g., personal variables, task characteristics, and situational factors). The *direct access processing strategy* is theorized to be uninfluenced by moods, so it will not be discussed in this summary of AIM.

The *motivated processing strategy* is characterized by individuals using a goal to guide their judgments or decisions. Individuals using this strategy are said to "adopt a highly targeted, selective thinking style" (Forgas & George, 2001, p. 11). AIM suggests

that affect will have very little impact on cognition and behavior when using the motivated processing strategy. However, the model allows for the fact that individuals may adopt the specific goal of maintaining a positive mood or repairing a negative mood. It is my supposition that one's current mood state necessarily informs an individual whether such a maintenance or repair goal is needed. In other words, if using the motivated processing strategy, an individual could unconsciously or consciously adopt the specific goal of either improving her current mood or maintaining her current mood, in accordance with the hedonic motive.

The *heuristic processing strategy* is characterized by individuals using mental shortcuts, or heuristics, to inform their judgments and decisions. AIM suggests that affect impacts cognition and behavior when individuals are using this processing strategy, especially when a mood-as-information heuristic is used. A mood-as-information heuristic means that an individual's mental shortcut is to use their current mood state to assess the desirability of different possible decisions. Alternatives to a decision should be assessed as more desirable when the individual is in a positive mood and less desirable when the individual is in a negative mood (Gollwitzer & Bargh, 1996). According to this processing strategy, if an individual is trying to decide what type of goal to adopt, the goal choices should seem more desirable if she is in a positive mood and should seem less desirable if she is in a negative mood.

Finally, the *substantive processing strategy* is characterized by individuals using highly constructive processing in their decision making. According to Forgas and George (2001), it "involves relying on memory-based procedural rules and combining stored knowledge structures with new stimulus information in order to create a new response"

(p. 8-9). AIM suggests that affect will have a very large impact on cognition and behavior using this processing strategy. Mostly, the impact of affect will occur in the form of memory priming, which has already been discussed with Gendolla's mood-behavior model. When in a positive mood, positive memories associated with a task are primed and an individual is more likely to evaluate the task positively. When in a negative mood, negative memories associated with a task are primed and an individual is more likely to evaluate the task negatively.

Personal variables, task characteristics, and situational factors are proposed to determine which processing strategy an individual uses. According to AIM, mood is one of the personal variables that will influence choice of processing strategy. The idea is that individuals who are in a negative mood engage in a processing style that is bottom-up, meaning it is effortful, systematic, and does not rely on short-cuts. Considering the four processing strategies proposed in AIM, this means that individuals in a negative mood should be more likely to use a substantive processing strategy. In contrast, individuals in a positive mood engage in top-down processing style, meaning it is non-effortful and relies heavily on mental short-cuts. It follows that individuals in a positive mood should use a heuristic processing strategy. Similar conclusions regarding how mood influences processing style have been made by other researchers (e.g., Higgins, 1989; Schwarz, 1990).

In a cognitive-based motivational paradigm, such as goal-setting theory, AIM predicts that those individuals in a negative mood are most likely to use a substantive processing strategy when engaged in goal-setting. This means these individuals should fully search all available information to inform their judgments. In an achievement situation, this may

mean the individual will consider how others have performed on the task, how they have performed on similar tasks, or any information relating to the chance of success on the task. Individuals using substantive processing may also be influenced by priming. With priming, individuals will recall information and memories that are congruent with their current mood. These are individuals who are in a negative mood, which led them to the substantive processing strategy in the first place, so it follows that they would bring to mind (through priming) memories of their performance undertaken when in a previous negative mood or recall negatively-valenced memories related to their performance ability. Therefore, it was expected that individuals in a negative mood would lower their achievement goals or avoid setting achievement goals altogether because they were cognizant of poor past performance or ability.

It must be mentioned that an opposite result to the one discussed above has also been observed in the AIM-related literature (e.g., Berkowitz, Jaffee, Jo, & Traccoli, 2000). Some individuals who are in a negative mood shift to a motivated processing strategy, adopting the specific goal of repairing their negative mood state (i.e., the hedonic motive). Berkowitz et al. (2000) found that individuals who were in a negative mood, and who were made aware of their mood, purposefully engaged in positive cognitions to improve their mood state. So it seems that using AIM as a framework, two predictions can be made for individuals in a negative mood as they are faced with an achievement task: (1) they could use a substantive processing strategy, which would lead them to avoid the achievement situation, in congruency with their negative cognitions about their abilities; *or* (2) they could focus on the hedonic motive and set goals that could potentially elevate their moods (i.e., mood-repair). Further research is needed to understand what the

relationship is between negative moods and goal difficulty selection and under what conditions this relationship changes. In this study, I attempted to address this need and the predictions regarding the relationship between negative mood and goal setting are based on the idea that those in a negative mood use substantive processing strategies. Two, opposing hypotheses are possible and I decided to choose one to hypothesize and test.

But what does the AIM have to say about the adoption of goals for those individuals in a positive mood? These individuals should use a top-down processing strategy, such as heuristic processing. AIM actually has more to say about how mood-as-information heuristic influences *effort* and *striving* towards a goal than it does about the initiation of a goal. However, I speculate that if an individual uses a positive mood as a heuristic, they should decide to initiate a challenging goal. The positive mood heuristic acts to inform an individual that his or her goal options are more desirable than those same options would seem if the individual were in a neutral or negative mood. Individuals in a positive mood, using mood-as-information heuristic, should also positively assess their own ability and past achievements. Additionally, individuals in a positive mood must consider how to satisfy the hedonic motive. Because they are in a positive mood, they need a mood-maintenance goal. When someone is in a positive mood and is trying to maintain that current mood state (or possibly improve it), he or she should generally set challenging, yet attainable goals.

Again, it must be pointed out that a mood-as-information heuristic is not the only heuristic option these individuals have. There are other possible mental short-cuts they may use, such as relying on prototypical experience from similar achievement situations.

It is difficult to predict what the use of these other heuristics might lead to in terms of goal difficulty selection. Individuals' dispositions or past experiences will influence this relationship. For example, if one's personality or past experience tells him or her that challenging goals are undesirable, he or she should lower the goal difficulty. If a person's personality or past experience tells him or her that challenging goals are desirable, he or she should raise goal difficulty.

Summary of Mood Models

Even though Gendolla's (2000) mood-behavior model and Forgas (1995a) affect infusion model explain the influence of moods on motivation in different terminology and by using different constructs, the conclusions that can be drawn from both models are in accord. Using the frameworks of both models, the prediction can be made that, generally speaking, individuals in a positive mood should choose to adopt moderate- to high-difficulty goals, while individuals in a negative mood should choose to adopt low-difficulty goals or no goals.

In the current study, participants were briefly introduced to the experimental task and then asked to self-set goal difficulty. The relationship between the participants' moods and goal difficulty selections were examined. According to the mood-behavior model, in order to satisfy the hedonic motive, individuals in a negative mood should set low difficulty goals in order to improve their mood, while individuals in a positive mood should set moderate to high difficulty goals in order to maintain or improve their mood. According to the AIM, individuals in a negative mood should use a substantive processing strategy, which should lead them to avoid goal setting or set low difficulty goals. Conversely, individuals in a positive mood should use heuristic processing strategy,

which should lead them to set moderate to high difficulty goals. Based on the review of the mood literature, a specific hypothesis regarding mood and self-set goal difficulty is made.

H5: The mean of self-set goal difficulty is higher for participants in a positive mood than for participants in a negative mood.

Joint influence of Disposition and Mood

Independently, trait theories and mood theories are insufficient for determining the difficulty level of self-set goals. Therefore, the focus of this study is to obtain a more complete picture for how goal difficulty is selected, by examining how motivational traits and moods interact to influence goal setting.

Personal Mastery and Mood.

It was hypothesized the individuals high in personal mastery should set high difficulty goals. In this study, the interaction of personal mastery and mood is examined. First consider individuals who are high in personal mastery and in a positive mood. Using AIM as a framework for making predictions, people in a positive mood are more likely to use top-down processing strategies, such as the heuristic processing style. As previously stated, using a heuristic processing style means these individuals rely on mental shortcuts to inform their decisions. This could mean relying on a mood-as-information heuristic, which is positive mood in this case, or prototypical experience with similar achievement tasks to inform decisions regarding choice of goal difficulty. If individuals high in personal mastery and positive mood use their positive mood as a heuristic, any goal options are positively appraised, even difficult goals. According to the "directive impact" of the mood-behavior model, individuals high in positive mood should seek to make large

accomplishments, such as meeting a difficult goal. A mild accomplishment, such as meeting an easy goal, should have little effect on the hedonic motive for individuals in a positive mood. Furthermore, these individuals are not only in a positive mood, they are also high in personal mastery. Individuals high in personal mastery should have positive feelings towards this achievement task because it gives them an opportunity to acquire or improve their skills. Because of their trait standing, these individuals' prototypical experience should be consistent with the personal mastery orientation. Individuals high in personal mastery should have a history of engaging in challenging achievement situations, as their dispositions lead them to enjoy achievement situations. They should also have a history of setting personally challenging goals in order to improve their skills or increase their knowledge. Therefore, if using their previous pattern of behavior to inform their decisions, individuals who are high in personal mastery should decide to adopt moderate to high difficulty goals. For individuals with high positive mood and high personal mastery, the joint influence of their mood and trait standing should increase the likelihood that they will self-set a challenging goal.

Now consider individuals who are high in personal mastery and high in negative mood. The relationship between personal mastery and level of self-set goal difficulty should be weakened for individuals in a negative mood. When people are in a negative mood, they are more likely to use a bottom-up processing style, such as substantive processing. This means that they consider all relevant information when making decisions or judgments, such as experience with the task, past performance on the task, and past performance on similar tasks. The hedonic motive and memory priming may also influence decisions under substantive processing. In this experiment, the participants

have had very little direct experience with the task prior to setting their goals; they will have only worked through two example items. Thus they are likely to give less weight to their personal past performance on this specific task when choosing level of goal difficulty. Given that these individuals are high in trait personal mastery, they should have a history of setting personally challenging goals for achievement tasks. Yet, their negative mood and subsequent substantive processing style should lead them to consider the fact that they have limited experience with this particular task. Since they have limited experience with this task, they should not set too high of expectations for their performance. Additionally, through the substantive processing strategy, a negative mood primes an individual's memory to recall similar tasks where negative moods were experienced (i.e., mood-congruent memory). Such mood-congruent memories for an individual high in personal mastery may bring to mind experiences when self-improvement was not achieved. Recalling times when personally challenging goals were not achieved should lead individuals to lower their performance goals on the present task. Satisfying the hedonic motive must also be considered. It is believed that when people are in a negative mood it does not take much of an accomplishment to improve their mood, thus satisfying the hedonic motive. For individuals with high negative mood and high personal mastery, the joint influence of their mood and trait standing should decrease the likelihood that they will self-set a challenging goal. Therefore, these individuals should self-set a lower level of goal difficulty than individuals who are high in personal mastery and high in positive mood.

H6: Mood moderates the relationship between the personal mastery trait and level of difficulty of the goal set such that the positive correlation between the personal

mastery trait and goal difficulty is stronger for individuals in a positive mood than it is for individuals in a negative mood.

Competitive Excellence and Mood

It was hypothesized that people who are high in trait competitive excellence should set high difficulty goals. This study also examines how mood interacts with the competitive excellence trait to influence goal difficulty. First consider individuals who are high in competitive excellence and in a positive mood. Once again, when in a positive mood people are more likely to use top-down processing strategies, such as the heuristic style. This means that they rely on their current mood state, which is a positive mood, or prototypical experiences in achievement situations to inform their judgments. When using a positive mood as a heuristic, any goal options is likely to be positively appraised, even difficult goals. According to the "directive impact" of the mood-behavior model, individuals high in positive mood should seek to make large accomplishments, such as meeting a difficult goal. A mild accomplishment, such as meeting an easy goal, should have little effect on the hedonic motive for individuals in a positive mood. Furthermore, these individuals are not only in a positive mood, they are also high in competitive excellence. Individuals high in competitive excellence should have positive feelings towards the task used in this study. Participants in the current study were told that when the study was completed they would be offered normative performance information, telling them how participants performed on average on this task. This allowed the participants to compete with other task performers or demonstrate their ability to the experimenter. Given their trait standing, these individuals' patterns of behavior on similar tasks should be consistent with the competition orientation. This means they have a

history of adopting challenging, competitive goals in achievement situations. Therefore, if using their previous pattern of behavior as a prototype to inform their decisions, individuals who are high in competitive excellence should choose to adopt moderate to high difficulty goals. For individuals with high positive mood and high competitive excellence, the joint influence of their mood and trait standing should increase the likelihood that they will self-set a challenging goal.

Now consider individuals who are high in competitive excellence and in a negative mood. A negative mood should moderate the relationship between competitive excellence and goal difficulty, but in a way that weakens this relationship. When people are in a negative mood, they are more likely to use the substantive processing strategy, which means that they put effort into considering all relevant information when making their judgments. In this experiment, the participants have had very little experience with the task; only exposure to some sample items. Given their high trait competitive excellence, they should value setting goals that demonstrate their ability to others, but their bottom-up processing strategy directs them to consider their lack of experience with this task. Additionally, their negative mood primes mood-congruent memory, which would lead them to recall past experiences when they did not outperform others or failed to demonstrate their ability to others. This suggests that individuals high in competitive excellence who are in a negative mood should lower their goal difficulty. Finally, when people are in a negative mood it does not take much of an accomplishment to satisfy the hedonic motive. Achieving even a very easy goal should improve mood. Therefore, the relationship between competitive excellence and goal difficulty is lowered when people are in a negative mood as compared to a positive mood.

H7: Mood moderates the relationship between the competitive excellence trait and the level of goal difficulty such that the positive correlation between the competitive excellence trait and goal difficulty is higher for individuals in a positive mood than it is for individuals in a negative mood.

Motivation Anxiety and Mood

Individuals high in trait motivation anxiety desire to avoid goal setting altogether due to their fear of failure and high emotionality in achievement situations. A high trait standing on motivational anxiety forces individuals to see very little instrumentality for achievement goals to satisfy the hedonic motive. Based on this information, it was hypothesized that there is a higher mean level of trait motivation anxiety among individuals who choose the "no goal" option than there is among individuals who choose to set a goal. Also, it was hypothesized that there is a negative correlation between trait motivation anxiety and the level of goal difficulty selected.

Once again, when a person is in a positive mood they are using heuristic processing. They may ignore situational information or peripheral information, preferring instead to rely on pre-existing knowledge structures and mental shortcuts to make judgments. For an individual who is high in motivation anxiety, their pre-existing knowledge structure tells them that they will not succeed at achievement tasks; that they will fail. Therefore, for these individuals to satisfy their hedonic motive, it would be best for them to avoid goal setting or choose low-difficulty goals. Although it may seem counterintuitive, the integration of the affect and trait literatures (e.g., Forgas, 1995, Heggestad & Kanfer, 2000) suggests that for individuals in a positive mood, the negative relationship between trait motivation anxiety and goal difficulty is strengthened as compared to individuals in

a negative mood. People with high motivation anxiety who are in a positive mood should perceive that the best way to satisfy the hedonic motive of mood maintenance is to avoid achievement goal setting or set very low difficulty goals.

AIM states that negative moods will most likely activate more bottom-up processing styles, such as substantive processing. When a person is using a substantive processing strategy they are very detail-oriented, paying attention to both internal cues (e.g., thoughts, memories, affect, etc.) and external cues (e.g., performance of others, statistical likelihood of goal attainment, etc.). Of course, individuals who are high in trait motivation anxiety still exhibit a fear of failure; however, a negative mood should force a realistic appraisal of their chances for success. Taking into account their hedonic motive, these individuals should also consider that accomplishing a goal, no matter how easy, would help improve their negative mood state. These individuals should calculate that by setting a goal, failure will not lead to further anxiety or guilt because they are aware that they have had relatively little experience with the current task. They may tell themselves that because they have had little experience with this task there is no shame in not doing well. Therefore, for individuals in a negative mood, the negative relationship between trait motivation anxiety and goal difficulty is weakened as compared to individuals in a positive mood.

H8: Mood moderates the relationship between the motivation anxiety trait and goal difficulty such that the negative correlation between the motivation anxiety trait and goal difficulty is stronger for individuals in a positive mood than for individuals in a negative mood.

CHAPTER 2: PILOT STUDIES

Goal Setting Pilot Study

In the main study it was assumed, based on previous research on goal setting theory, that specific and challenging goals would lead to improved task performance over the adoption of no goals. It was necessary to make certain that this assumption would hold true for the problem-solving task used in this study. Therefore, a pilot study was conducted to test this assumption.

Method

Participants

Participants in a goal setting pilot study were randomly assigned to either a "no goal" condition ($n = 33$) or a "specific and challenging goal" condition ($n = 31$). No demographic information was collected from the pilot study participants.

Procedures

All participants were first given a description of a problem-solving task along with two sample items from this task. Next, participants in the no goal condition were immediately given 52 problem-solving items to work through. Participants in the specific and challenging goal condition were told that they were assigned a goal of correctly answering 45 of the 52 task items and then they were given the 52 problem-solving items to work through. Both the performance (i.e., number of items answered correctly) and the effort (i.e., number of items attempted) were recorded for all participants.

Problem-Solving Task

The task was made up of problem-solving items that included algebra word problems, pattern recognition, matching tasks, finding discrepancies, and logic games. A number of these items were taken from the problem-solving task used in Mueller-Hanson, Heggestad, and Thornton (2003). There were 52 problem-solving items and participants had a maximum of 45 minutes to work on these problems (See Appendix A for sample problems). The problem-solving task was computerized, using a web-page design. Therefore, each of the 52 items was presented on a computer screen. When participants were finished with an item, they could click on a "continue" button to go on to the next item or they could click on a "finished with the task" button if they were ready to stop the problem-solving task. All participants were given scrap paper and a pencil to use to work out the problems.

The problem-solving items were somewhat challenging and tedious. Pilot testing conducted by Mueller-Hanson, Heggestad, and Thornton (2003) indicated that average adults could solve all of these problem-solving items if they took time to carefully work through them. All participants were given the following information and directions for the problem-solving task before they reviewed two sample items:

> You are about to receive a performance test. This test has 52 problems for you to solve. Participating in this performance test will give you an opportunity to improve your problem-solving skills. The problem-solving skills that this test measures are similar to skills you may need to perform well on a job or on certain exams (e.g., GRE, LSAT, GMAT). If you are interested in how well participants perform on this task, you may email the experimenter to obtain normative

performance information (i.e., average performance & performance percentages). The experimenter's email is given on the debriefing form you will receive at the conclusion of this study.

You will have a maximum of 45 minutes to work on the problem-solving task. You do NOT need to complete all of the items; only answer as many items as you want. You will now have an opportunity to review and work through two sample items. After you have reviewed these items, you may begin the problem-solving task.

This information regarding the task was provided to activate both personal mastery and competitive excellence motivation within the participants. The performance task directions emphasized that participants did not have to complete all of the items on the test. This was purposely done to allow for the goal condition (specific and challenging goal or no goal) to influence performance on the task.

Results

An independent samples t-test was used to test whether the participants' task performance differed between the two goal conditions. There was a significant difference between the performance of the no goal ($M = 34.18$, $SD = 10.75$) and specific and challenging goal ($M = 38.94$, $SD = 7.70$) conditions ($t_{62} = 2.02$, $p < .05$, $d = .52$). Although the difference between the effort of the no goal ($M = 45.42$, $SD = 12.33$) and specific and challenging goal ($M = 49.29$, $SD = 7.72$) conditions was in the predicted direction, this difference was not significant ($t_{62} = 1.47$, $p <$ ns, $d = .39$). Given that the problem-solving task was computerized, it was rather easy for participants to guess

answers by selecting one of the multiple choice options and moving on to the next question. The only way to measure "effort" was to measure the number of items participants answered. Participants could have answered items without putting any effort into choosing the correct answer. It seems that the most important distinction to make was that the two goal conditions significantly differed in their performance on the problem-solving task, which was supported with this pilot study. The pilot study results provided evidence that the problem-solving task was a suitable performance task to use for this study of motivational processes.

Mood Induction Pilot Study

The main study presented in this paper included a commonly used mood induction technique. However, it was necessary to ensure this mood induction technique was appropriate to use with this participant sample and laboratory study. Therefore, a pilot study of the mood induction technique was conducted.

Method

Participants

The same individuals who participated in the goal setting pilot study were asked to participate in a second study, which was the mood induction pilot study. They were not informed of the purpose of this study, but were told they would be asked to engage in a story-writing task. Three of these individuals declined and left before the mood induction pilot study began. The remaining participants were randomly assigned to one of three conditions (i.e., positive mood condition, $n = 28$; neutral mood condition, $n = 13$; and negative mood condition, $n = 20$). No demographic information was collected from these pilot study participants.

Procedures

All of the participants were asked to take a maximum of 10 minutes to write a one-page essay. The assigned content of these essays varied depending on the mood condition to which participants were assigned. After their essays were written, participants were administered a measure of their current mood state via a computer.

Mood Manipulation

Participants were randomly assigned to one of three mood conditions: positive, negative, or neutral. They engaged in an autobiographical memory-recall, story-writing task to activate one of these three mood states. In the positive mood condition, participants were instructed to "please take a moment to remember a happy memory from your life." In the negative mood condition, participants were instructed to "please take a moment to remember a sad memory from your life." In the neutral mood condition, participants were instructed to "please take a moment to think about how you typically prepare for a college exam." Participants in all conditions were told that they had 10 minutes to write a one-page essay describing their memory or how they prepare for college exams. The participants were supplied with paper and pencils to write out their essays. All participants were assured that the essays would not be used to identify them (See Appendix B). This is a common technique for mood induction and has been successful in past research (e.g., Gendolla & Krüsken, 2002; McFarland & Bueler, 1998; Schwarz & Clore, 1983; Strack, Schwarz, & Gschneidinger, 1985).

Measures

Mood. A manipulation check of the mood conditions was administered using a modified version of the Positive and Negative Affect Schedule (PANAS; Watson, et al.,

1988). The PANAS was administered on the computer, using a web-based design. The instructions of the PANAS were modified to measure a transient mood state rather than affective trait. The PANAS contains a list of 20 adjectives that could describe one's feelings, moods, or emotions. Ten of these adjectives describe positive feelings, moods, or emotions, and the other ten adjectives describe negative feelings, moods, or emotions. Participants were asked to indicate to what extent they feel this way right now, that is, at the present moment (these are the instructions measuring a transient mood state) for each adjective. The response options were in the form of a five-point Likert scale (1 = *Very slightly or not at all*, 3 = *Moderately*, 5 = *Extremely*). The PANAS PA scale and NA scale had high internal reliability in a previous study (PA, $\alpha = .86$; NA, $\alpha = .87$; Watson et al., 1988).

Research supports the construct validity of the PANAS scales. Watson et al. conducted factor analysis of the responses to items found on six different measures of PA and NA. Two dominant factors emerged—positive affectivity and negative affectivity. Then they examined the convergent and discriminant correlations between each of these measures' PA and NA scales and the factor scores from the factor analysis. Watson et al. found that the PA and NA scales of the PANAS are valid measures of the underlying constructs of positive affectivity and negative affectivity, respectively. The PA scale of the PANAS had a high, positive correlation with the positive affect factor score ($r = .92$) and low, negative correlation with the negative affect factor score ($r = -.08$). The NA scale of the PANAS had a high, positive correlation with the negative affect factor score ($r = .94$) and a low, negative correlation with the positive affect factor score ($r = -.08$).

Results

The data collected to test the mood manipulation were analyzed using one-way ANOVAs. The 20 items of the PANAS compose two scales: (1) PA scale, and (2) NA scale. First, the group differences on the PA scale were considered. *A priori* contrast coefficients were used with the one-way ANOVA to test whether the mean levels of PA differed significantly among the three mood induction conditions. Significant group differences were found among the positive ($M = 30.18$, $SD = 7.06$), neutral ($M = 22.69$, $SD = 6.91$), and negative ($M = 20.60$, $SD = 7.32$) mood conditions ($F_{(2, 58)} = 11.81$, $p < .01$, $\eta_p^2 = .29$). Additionally, the *a priori* test of contrast coefficient was significant ($t_{58} = 4.60$, $p < .01$). Second, the group differences on the NA scale were considered. Once again, *a priori* contrast coefficients were used with the one-way ANOVA to test whether the mean levels of NA differed significantly among the three mood induction conditions. Although the mean levels of NA for each mood condition were in the expected direction in relation to one another, no significant group differences were found among the negative ($M = 17.95$, $SD = 6.40$), neutral ($M = 15.00$, $SD = 4.80$), and positive ($M = 14.64$, $SD = 5.49$) mood conditions ($F_{(2, 58)} = 2.15$, p = ns, $\eta_p^2 = .07$).

At first glance, it may seem that the failure to find significant group differences on the NA scale, among the three mood conditions was a problem. However, Watson and his colleagues (1988) described Negative Affect as "subjective distress and unpleasurable engagement that subsumes a variety of aversive mood states, including anger, contempt, disgust, guilt, fear, and nervousness, with low NA being a state of calmness and serenity" (p. 1063). It is unlikely that this story-writing laboratory mood manipulation technique is capable of inducing this strong of a negative affective response. It is more likely that the negative mood manipulation technique used in this study induces the lower end of the PA

scale. Watson and his colleagues described Positive Affect as "the extent to which a person feels enthusiastic, active, and alert. High PA is a state of high energy, full concentration, and pleasurable engagement, whereas low PA is characterized by sadness and lethargy" (p. 1063). Considering these definitions, it was deemed acceptable for the purpose of this study to consider only the PA scale of the PANAS. Low scores on the PA scale reflect slightly negative affect, as opposed to high scores on the NA scale, which reflect strong negative affect.

Based on this pilot study, it was conclude that the autobiographic story-writing technique was a suitable mood induction for this laboratory study. In the current study, only the positive and negative mood inductions were used; the neutral mood induction was removed because it did not provide any additional useful information. It must also be noted that it is possible that the results of the analysis of the impact of the mood induction conditions on the PA scale are an overestimate of the effect. The pilot study participants were asked to write a mood-relevant story and then they were asked to complete a questionnaire containing mood descriptors. It would be relatively easy for them to put together the purpose of the story-writing task and the questionnaire. It is possible that the effect found for the impact of mood induction conditions on PA was actually due to demand characteristics.

CHAPTER 3: MAIN STUDY METHOD

Participants

Participants ($N = 294$) were undergraduate students enrolled in General Psychology at a large university in the western United States. They volunteered to participate in this study to satisfy a research requirement for the General Psychology course. Twenty-seven percent of the participants were male ($n = 79$). Information on the ethnicity of participants was obtained at the time of the study (Caucasian = 84%; Latino = 6.8%; Asian = 6.1%; African American = 1.4%; other = 1.7%). The majority of participants (68%) did not work in addition to attending college.

Overview of Procedures

A laboratory design was used to address the hypotheses of this study. Participants signed up for study sessions of their choosing. Each study session was randomly assigned to be either a positive mood condition or a negative mood condition. There were 163 individuals who participated in the positive mood condition and 131 individuals who participated in the negative mood condition. Upon arrival, participants were seated at a desk containing a computer, scrap paper, and a pencil. The majority of the study took place on the computers. Participants completed the study at varying rates, but all of the participants completed the study within one and a half hours.

When all of the enrolled participants had arrived for the study session, the laboratory assistant obtained informed consent and read a pre-scripted cover story. The cover story

explained that this study was examining the relationship between personality, memory, and task performance. In an attempt to reduce demand characteristics, participants were not told that their mood would be induced. Next, participants were asked to complete a measure of motivational traits, specifically, personal mastery, competitive excellence and motivation anxiety. After they completed this measure, participants' moods were induced according to the assigned condition of the study session they attended. Participants were then given instructions about the problem-solving task they would perform in this study and they had an opportunity to review and practice two sample items of the task. Then, participants engaged in goal setting. They were asked to choose a goal relating to the number of problem-solving items they would answer correctly. Participants were given complete freedom to choose the goal they preferred. This included the freedom to avoiding goal setting altogether, as they were given the option of selecting the statement, "I prefer NOT to set a goal." After they engaged in goal setting, participants completed the 52-item problem-solving task and their performance was measured. Finally, a questionnaire measuring mood was administered in order to examine whether the mood manipulation persisted throughout task performance. All of the questionnaires and the problem-solving task were administered on computers, through a web page, designed specifically for this study. Only the mood induction took place without the use of a computer.

Questionnaires

Demographics. Participants were given an identification number to use throughout the study and were asked to provide information on their age, gender, ethnicity, and work status (See Appendix C).

Motivational traits. Motivational traits were measured with the short form of Heggestad and Kanfer's (2000) Motivational Trait Questionnaire (MTQ; Kanfer & Ackerman, 2000). This measure consists of 48 items across three dimensions: Mastery, Competitive Excellence, and Motivation Anxiety. Although Kanfer and Ackerman developed two subscales for each dimension, this study focuses on only the three primary dimensions. Research on the construct validity of the MTQ supports the three dimensions (or three-factors) of the measure and demonstrates these dimensions' convergence with similar constructs and divergence with dissimilar constructs (Heggestad & Kanfer, 2000; Kanfer & Ackerman, 2000). Participants responded to the items using a six-point Likert scale (1 = *Very Untrue of Me* to 6 = *Very True of Me*).

Achievement goals. Participants completed a form asking them to select their performance goal for the actual achievement, or problem-solving, task they were about to perform. Participants who chose to set a goal could type in their performance goal, in terms of the number of problem-solving items they intended to answer correctly. Therefore, their goals could range in difficulty from highly difficult (i.e., answer all 52 items correctly) to extremely easy (i.e., answer one item correctly). Participants were also given a goal-avoidance option (i.e., "I prefer NOT to set a goal for this task."), which was assigned a value of *zero* in the database, in the current study. Participants were asked to select one of the options (See Appendix D).

Mood. A manipulation check of the mood conditions was administered at the end of the study with a modified version of the PANAS (Watson et al., 1988). The instructions of the PANAS were modified to measure a transient mood state rather than affective trait.

Only the positive affect scale (PA) was used in the current study. A complete description of the PANAS was provided in the pilot study of the mood manipulation.

Exploratory question. Participants were asked to answer one question regarding why they chose the goal that they did (for participants who set a goal). They were given six statements to choose from: (1) I wanted to solve more problems than the average number of problems typically solved by others, (2) I wanted to challenge myself to get better at problem-solving tasks, (3) I wanted to solve more of the problems than the other participants in this study, (4) I wanted to show the researcher that I am good at problem-solving, (5) I really enjoy logic problems and problem-solving and viewed this task as an opportunity to learn more about them, (6) I do not know why I chose the goal I did. Some of these statements reflect mastery-like reasons for the participants' goal choices and some of these statements reflect competitive-like reasons for their goal choices. Participants were asked to select all of the statements that applied to them (See Appendix E).

Mood Manipulation

The mood manipulation was administered in the same manner as it was in the pilot study. Participants were randomly distributed into either a positive or negative mood condition[3]. They engaged in an autobiographical memory-recall, story-writing task to activate one of these two mood states. In the positive mood condition, participants were instructed to "please take a moment to remember a happy memory from your life." In the

[3]I will continue to refer to the two mood conditions as "positive" and "negative", even though the negative mood condition is intended to induce a mood state that is similar to what is identified with the lower-end of the PA scale of the PANAS. This negative mood condition is expected to produce a mood that can be "characterized by sadness and lethargy." (p. 1063, Watson et al., 1988).

negative mood condition, participants were instructed to "please take a moment to remember a sad memory from your life." Participants in both conditions were told that they had 10 minutes to write a one-page essay describing their memory. All participants were also assured that the essay would not be used to identify them.

Problem-Solving Task

The problem-solving task was the same as the one used in the pilot study of goal setting. The task was made up of problem-solving items that included algebra word problems, pattern recognition, matching tasks, finding discrepancies, and logic games. There were 52 problem-solving items and participants had a maximum of 45 minutes to work on these problems. The directions for the problem-solving task were the same as those used in the pilot study. However, at the end of the directions the participants were told that they would now set their performance goals for the problem-solving task.

The task instructions were intended to activate both personal mastery and competitive excellence motivation within the participants. The directions emphasized that participants did not have to complete all of the items on the test. This was purposely done to make sure that participants knew that they could select any performance goal they wished and to allow achievement motivation and mood to influence goal choice.

CHAPTER 4: MAIN STUDY RESULTS

Tests of Hypotheses

The means, standard deviations, intercorrelations, and internal consistency reliabilities of the study variables are presented in Table 1. Coefficient alphas for each of the three scales of the MTQ were calculated using the current study sample. All three of the coefficient alphas were .89, which is an acceptable level of internal consistency reliability for the purpose of this study (Cortina, 1993). The coefficient alpha for the PA scale of the PANAS with the current study sample was .90. The intercorrelations indicated that several of the study variables were correlated with one another. Actual performance on the problem-solving task was not included in any of the hypotheses of this study; however, there were significant correlations between performance and three other study variables that are worth mentioning. Actual performance on the problem-solving task was correlated with self-set goal difficulty ($r = .27, p < .01$), trait personal mastery ($r = .19, p < .01$), and the PA scale of the PANAS ($r = .19, p < .01$).

The frequencies at which participants chose various levels of goal difficulty are reported in Table 2. Ninety-five participants (32%) chose the "I prefer NOT to set a goal for this task" option. When participants chose this option, there were two options for coding their data. One option was to remove the data from the "no goal" participants from the sample because they did not set a goal. A second option was to assign a value of zero for the self-set level of goal difficulty for the "no goal" participants. In this study, participants who choose not to set a goal were assigned a value of zero for their goal variable. Assigning a value of zero was intended to indicate that these participants had an absence of goal. The analyses of the hypotheses were conducted with both the "no goal"

participants included in the sample and with them excluded from the sample. When the "no goal" participants were excluded, there were some differences in the results from those reported in this manuscript. However, the results with the "no goal" participants excluded from the sample were not different enough from the results reported in this manuscript to warrant reporting both sets of results in the text.

Mood manipulation check. A t-test ($t_{292} = .68$, *ns*, $d = .08$) revealed that the mean scores on the PA Scale of the PANAS were not significantly different between the positive mood condition ($n = 163$, $M = 23.13$, $SD = 8.42$) and the negative mood condition (n=131, $M = 22.47$, $SD = 8.10$). Therefore, the mood condition could not be used as a variable in the tests of the hypotheses. In an attempt to address the hypotheses that dealt with mood, the PA Scale of the PANAS was used in place of the mood condition variable in all analyses that included the mood variable.

T-tests and a Box's M (Box, 1950) test were performed in order to determine if the samples of participants from the two mood conditions were similar enough on the study variables to collapse into one sample. The results of the t-tests indicated that the samples from the two mood conditions were equivalent on the study variables of age, personal mastery, competitive excellence, motivation anxiety, positive affect, self-set goal difficulty, and task performance (see Table 3). Additionally, there was equivalence of the covariance matrices for the two mood conditions (Box's $M = 12.78$, Approximate $F_{(21, 284483)} = .60$, p = ns). Therefore, the participants from the two mood conditions were combined into one sample for all remaining analyses.

Effects of motivational traits on goal difficulty. The correlation coefficients that are relevant to hypotheses one, two, and four are in Table 1. The correlation coefficient for

the relationship between personal mastery and goal difficulty was positive and significant ($r = .26, p < .01$), providing support for hypothesis one (H1: Trait personal mastery correlates positively with goal difficulty). Likewise, the correlation coefficient for the relationship between competitive excellence and goal difficulty was positive and significant ($r = .16, p < .01$), which supports hypothesis two (H2: Trait competitive excellence correlates positively with goal difficulty). Hypothesis three stated that the mean level of motivation anxiety would be higher for the participants who chose the no goal option than for the participants who chose to set a goal. An independent t-test revealed that there was no significant difference in mean level of motivation anxiety between the group of participants that chose the no goal option and the group that set a goal ($t_{292} = 1.09$, *ns*, $d = .14$). Thus hypothesis three (H3: Those participants who choose the *no goal* option have a higher mean level of motivational anxiety than the participants who choose to set a goal) was not supported. The correlation coefficient for the relationship between motivation anxiety and goal difficulty revealed that there was no relationship between these variables ($r = -.07$, *ns*). Thus hypothesis four (H4: Trait motivation anxiety is correlates negatively with goal difficulty) was also not supported.

Effects of mood on goal difficulty. Hypothesis five stated that the level of self-set goal difficulty is higher for participants in a positive mood than for participants in a negative mood. As previously stated, the mood induction technique was not successful in this study and therefore the mood conditions were collapsed into one sample and the PA Scale of the PANAS was used as a substitute variable in the test of this hypothesis. A correlation coefficient was calculated in order to determine the relationship between mood and self-set level of goal difficulty. As seen in Table 1, the correlation between PA

and level of goal difficulty was positive and significant ($r = .14, p < .01$), thus providing support for hypothesis five.

Effect of motivational traits x mood on goal difficulty. Moderated regression analyses were used to test hypotheses six, seven, and eight. The results of these analyses are presented in Table 4. Once again, scores on the PA Scale of the PANAS were used for the mood variable in the moderated regression analyses. It was hypothesized (H6) that mood moderates the relationship between personal mastery and goal difficulty such that the positive relationship between trait personal mastery and goal difficulty is strengthened for individuals high in positive mood and weakened for individuals low in positive mood. First, the data for the independent variables (personal mastery and PA) were centered by subtracting the mean of each variable from the variable scores. Second, the independent variables were multiplied to create an interaction term. Then, the level of self-set goal difficulty was regressed onto personal mastery, PA, and the interaction term ($F_{(3, 290)} = 7.96, p < .01, R^2_{adj} = .07$). A moderating effect would be present if a significant effect existed for the interaction term. Only personal mastery significantly contributed to the level of goal difficulty in the regression analysis; thus, hypothesis six was not supported. The procedure described by Aiken and West (1991) was used to plot the joint effect of personal mastery and PA on goal difficulty (see Figure 2).

It was hypothesized (H7) that mood moderates the relationship between competitive excellence and goal difficulty such that the positive relationship between trait competitive excellence and goal difficulty is strengthened for individuals high in positive mood and weakened for individuals low in positive mood. In order to test this hypothesis, first the data for the independent variables were centered. Then level of self-set goal difficulty

was regressed onto competitive excellence, PA, and an interaction term (competitive excellence x PA). Both competitive excellence and PA significantly contributed to the level of goal difficulty in the regression analysis, providing support for the main effects of these independent variables. Additionally, the interaction term had a significant effect on the dependent variable; PA moderated the relationship between competitive excellence and level of goal difficulty ($F_{(3, 290)} = 5.88, p < .01, R^2_{adj} = .05$). However, further examination into the nature of this interaction revealed that PA moderated the relationship between competitive excellence and level of self-set goal difficulty in a different way than what was predicted in hypothesis seven. The interaction between competitive excellence and PA was plotted using the procedure described by Aiken and West (1991). The results indicated that the positive relationship between trait competitive excellence and goal difficulty increased with lower levels of PA (i.e., experiencing sadness and lethargy). Thus, hypothesis seven was not supported (see Figure 3).

It was hypothesized (H8) that mood moderates the relationship between motivation anxiety and goal difficulty such that the negative relationship between trait motivation anxiety and goal difficulty is strengthened for individuals high in positive mood and weakened for individuals low in negative mood. The data for the independent variables were centered. The level of self-set goal difficulty was regressed onto motivation anxiety, PA, and an interaction term (motivation anxiety x PA) ($F_{(3, 290)} = 2.71, p < .05, R^2_{adj} = .02$). In this regression analysis, only PA significantly contributed to the level of goal difficulty. No moderation was detected, thus hypothesis eight was not supported. The procedure described by Aiken and West (1991) was used to plot the joint effect of motivation anxiety and PA on goal difficulty (see Figure 4).

Exploratory Analysis

All participants who chose to set a goal were asked to indicate why they chose that goal. They were presented with three statements that endorsed competitive reasons for choosing a goal and two statements that endorsed mastery reasons for choosing a goal. The number of competitive reasons they chose was calculated and the number of mastery reasons they chose was calculated. Then, the number of competitive reasons was subtracted from the number of mastery reasons to yield scores which indicated the level of mastery reasons that participants used in selecting their goals (these scores ranged from -3 to 2, with -3 indicating no mastery reasoning and 2 indicating high mastery reasoning). The relationship between trait mastery and the level of mastery reason for selecting goals was calculated using Pearson's correlations. Trait personal mastery was significantly and positively correlated with level of mastery reason for selecting goals ($r = .20, p < 0.01$). Competitive Excellence was significantly and negatively correlated with level of mastery reason for selecting goals ($r = -.21, p < 0.01$). Finally, motivation anxiety was not correlated with level of mastery reason for selecting goals ($r = -.01$, *ns*).

CHAPTER 5: MAIN STUDY DISCUSSION

The purpose of this study was to link together moods, dispositions, and cognitions in the motivational process. Therefore, this laboratory study examined the influence of motivational traits, as measured with the MTQ, and positive affectivity, as measured by the PA scale of the PANAS, on self-set levels of goal difficulty. The results of this study supported the prediction that both motivational traits and mood influence self-selection of goal difficulty, as significant and positive relationships were found between personal mastery and goal difficulty, competitive excellence and goal difficulty, and positive mood and goal difficulty. The strengths of these correlations were moderate in size for psychology research, especially considering the fact that other variables, such as self-efficacy, are known to have a significant impact on self-set level of goal difficulty (Locke & Latham, 2002). Although none of the specific hypotheses regarding the interaction between motivational traits and mood were supported in this study, an interaction between competitive excellence and mood was found and explored. In their totality, the results of this study suggest that linking motivational traits, moods, and cognitions together in the study of motivation is a worthwhile pursuit for future research.

Motivational traits and goal difficulty. The current study found that trait personal mastery was positively correlated with goal setting. This finding replicates the outcome of a study conducted by VandeWalle et al. (1999), which found that individuals high in learning goal orientation set higher sales goals. Support for this relationship was also found in a 2001 study conducted by VandeWalle and his colleagues.

In 2001, VandeWalle and his colleagues found a negative relationship between avoidance goal orientation (can be considered similar to trait motivation anxiety) and

goal setting, a finding that was not replicated with the current study. There is a second outcome of the current study that is contradictory to the VandeWalle et al. (2001) study. Their study did not find a significant relationship between proving goal orientation (similar to Competitive Excellence) and goal setting, whereas my study did. The result of the moderated regression analysis from the current study provides a potential explanation for the discrepancy of findings related to competitive excellence and goal setting. The results of the moderated regression analysis indicated that for individuals in a high positive mood, there was no relationship between competitive excellence and selection of goal difficulty. Only at moderate to low levels of positive mood did the positive relationship between competitive excellence and goal difficulty become evident. It is unknown what mood the participants from the VandeWalle et al. study were in, given that this was not a variable measured in their study. A second possible explanation for the discrepancy between the current study and the VandeWalle et al., regarding the relationship between proving goal orientation and goal setting, has to do with the goal choices participants were given and the nature of the achievement situation. The participants in the VandeWalle et al. study were setting letter-grade goals for a class. Since classroom environments are naturally more mastery oriented, and letter-grade goals may be more mastery in nature, it is possible that a trait proving goal orientation (competitive excellence) would not be related to this type of situation and goal. In the current study, participants were asked to set a goal for how many items they would answer correctly on a problem-solving task. The instructions for this task were designed to induce both trait personal mastery and trait competitive excellence, which may have allowed for the significant correlation between competitive excellence and goal setting.

Given the discrepancies in the findings of the current study with the aforementioned VandeWalle studies, it seems that more research is needed to clarify the relationships between trait competitive excellence and goal setting, and motivation anxiety and goal setting.

Moods and goal difficulty. Unfortunately, the mood manipulation did not work in this study. This was surprising given that this particular technique was successfully used in past studies and given the apparent success of the manipulation in the pilot study. One possible explanation for why the mood manipulation worked in the pilot study and not in the actual study is due to the timing of the manipulation and PANAS measure. In the pilot study, participants engaged in the story-writing task to manipulate mood and immediately completed the PANAS to measure their mood states. In the actually study, participants engaged in the story-writing task, selected their goal difficulty, completed the problem-solving task, and then completed the PANAS. It is possible that the moods induced with the story-writing task did not persist throughout the entire study period. It could be that the story-writing technique induced emotions instead of moods in the current study. Another possible explanation for why the mood manipulation worked in the pilot study and not in the actual study has to do with demand characteristics. In the pilot study the story-writing task and PANAS were administered consecutively, which could allow the participants to deduce what the study was about and answer the PANAS in such a way as to please the experimenter. In the actual study, there was enough time and activity between the story-writing task and the PANAS that the participants may not have focused on what the PANAS was measuring. This would make these participants less likely to attempt to answer the PANAS in a way that matched their assigned mood

conditions. Finally, it is possible that the problem-solving task interfered with the mood manipulation. Participants who enjoyed the problem-solving task may have experienced an increased positive mood, while participants who did not enjoy the problem-solving task may have experienced a decreased positive mood. If the participants experienced an affective reaction to the problem-solving task, this could have interfered with the mood manipulation.

Due to the failure of the mood manipulation, the scores on the positive affect scale of the PANAS were used for the mood variable in the analyses pertaining to mood. In the current study, I found a positive relationship between positive mood and self-set goal difficulty. This finding supports both the mood-behavior model (Gendolla, 2000) and the AIM (Forgas, 1995). The Mood-Behavior Model states that moods have a directive impact on behavior, in that moods influence our hedonic motive. It is theorized that when individuals are in a positive mood they need to meet a challenging goal in order to maintain their positive mood, thus satisfying the hedonic motive. It is also theorized that when individuals are in a negative mood they can meet almost any level of goal in order to improve upon their negative mood, thus satisfying the hedonic motive.

AIM predicts that positive moods lead to top-down processing styles, such as heuristic processing strategy, while negative moods lead to bottom-up processing styles, such as substantive processing strategy. When a positive mood leads to the use of heuristic processing, the use of a mood-as-information heuristic may occur. This mood-as-information heuristic should cause the individuals in a positive mood to positively evaluate their own ability, thus leading to the adoption of highly challenging goals. When a negative mood leads to the use of substantive processing, many pieces of information

are considered to inform individuals' choice of goal difficulty. People using substantive processing may consider how they have performed on similar tasks in the past. If mood-congruent priming occurs in the recall of memories of past performance, people in a negative mood will recall memories of poor performance.

In the current study, I found that individuals low in positive mood self-set low difficulty goals. In the review of the AIM literature, I mentioned that two predictions could be made for individuals low in positive mood as they faced an achievement task: (1) they could use a substantive processing strategy, which would lead them to adopt lower difficulty goals, in congruence with their negative cognitions about their abilities; *or* (2) they could focus on the hedonic motive and set higher goals that could potentially elevate their moods (i.e., mood-repair). This study supported the first of these two predictions; individuals with low positive mood adopted lower difficulty goals, while individuals with high positive mood adopted higher difficulty goals. Berkowitz et al. (2000) reviewed experimental evidence that individuals who were in a negative mood, and who were made aware of their mood, purposefully engaged in positive cognitions to improve their mood state. Berkowitz et al. reasoned that when individuals are in a negative mood they may shift to a motivated processing strategy, adopting the specific goal of repairing their negative mood state (i.e., the hedonic motive). The findings of the current study are contradictory to the findings discussed by Berkowitz et al. Therefore, it seems that more research is needed to clarify the relationship between low positive mood (and high negative mood) and self-set goal difficulty.

Motivational traits x mood interaction. None of the hypotheses regarding the interaction between trait motivation and mood were supported in this study. The only

significant interaction found was the interaction between trait competitive excellence and PA in influencing the dependent variable of self-set goal difficulty. As shown in Figure 3, PA influenced the positive relationship between competitive excellence and goal difficulty such that the strength of this relationship increased as positive mood decreased. In fact, there was no relationship between competitive excellence and goal difficulty for individuals in a high positive mood. Figure 3 also shows that for individuals who were low in competitive excellence, mood greatly influenced the level of goal difficulty they adopted. For individuals who were low in competitive excellence, those low in positive mood set lower goals than those high in positive mood. In contrast, for individuals who were high in competitive excellence, mood did not seem to matter. Those who had high competitive excellence were likely to adopt a difficult goal no matter what their mood. This result suggests that having high competitive excellence can insulate people from the negative effects of a bad mood when they are engaged in achievement tasks and goal setting.

Although the interactions between personal mastery and PA and motivation anxiety and PA were not significant, graphs of these interactions provide information about the potential nature of the relationship among these variables. It appears that PA had virtually no impact on the relationship between personal mastery and goal difficulty (see Figure 2). PA appeared to have a small impact on the relationship between motivation anxiety and goal difficulty. High scores on positive affectivity increased the strength of the negative relationship between motivation anxiety and goal difficulty, which is consistent with the prediction made in hypothesis eight. In fact, there seems to be no relationship between motivation anxiety and choice of goal difficulty for individuals with low PA. For

individuals who were high in PA, level of self-set goal difficulty decreased as motivation anxiety increased. Had this finding been significant, it would support the theory presented in the AIM, which suggests that individuals in a positive mood use mental shortcuts in decision making. When an individual is high in motivation anxiety and is using mental shortcuts (e.g., heuristic processing strategy), they should think of all of the times they have failed at achievement tasks and either avoid goal setting or choose goals that are easy to attain. This would explain why individuals in a positive mood and high in motivation anxiety would be more likely to adopt lower difficulty goals. Neither of these interactions, that between personal mastery and PA nor that between motivation anxiety and PA, were statistically significant, so conclusions cannot be drawn based on the results from this study.

The focus of the current study was on goal setting, not goal striving or actual task performance. However, data on participants' performance on the problem-solving task was collected and examined. An analysis of the variables indicated that the level of self-set goal difficulty was significantly and positively correlated with performance on the problem solving task. This is an important finding because it replicates previous research of goal setting theory that has found a relationship between goal setting and performance (e.g., Barrick, et al., 1993; Chesney & Locke, 1991).

Limitations.

The unsuccessfulness of the mood induction made it challenging to test the hypotheses involving mood that were put forth in this study. Therefore, a limitation of this study is the failure of the story-writing task to induce moods. Because the mood manipulation did not work, this study is purely a correlational study. Given the evidence

of reliability and validity for the PANAS, I am confident that the PA scale of the PANAS measured the strength of the participants' positive moods. However, the problem lies in establishing the cause and effect relationship between PA and self-set level of goal difficulty. The PANAS was administered after the participants engaged in goal setting and after they performed the problem solving task. Therefore, it is possible that either (a) goal setting and/or participating in the achievement task influenced the participants' moods, or (b) the participants' moods influenced their goal setting and performance on the achievement task. Unfortunately, the only conclusion regarding positive mood and level of self-set goal difficulty that can be drawn from this study is that is that there is a significant, positive relationship between the two variables. Experimental research is needed to truly establish whether or not moods *cause* changes in goal setting in an achievement context.

A second limitation of this study was the inability to test negative moods that are consistent with the high end of the negative scale of the PANAS. It would be beneficial to understand how highly negative moods impact motivational processes; however, it is difficult to measure this variable because of the unethical implications for putting participants in such a negative mood.

A third limitation of this study is the potential for threats to internal validity, such as common method bias. All of the variables included in the hypotheses of this study were measured by self-report, which could artificially inflate the observed relationships among them. A second possible threat to internal validity is the potential for demand characteristics. Participants could have guessed that the study was examining the relationships between personality and goal setting, and mood and goal setting. If they

deduced that their motivational traits and moods were being measured, they may have allowed this knowledge to influence their self-set goals.

A final limitation of this study is that the results may not apply to the broader population. The study sample was comprised of college students. Only 32% of the participants worked in addition to attending college. Furthermore, the sample was mostly Caucasian and female. Caution must be used in generalizing these findings to a more diversified population.

Future research.

There are many opportunities for future research examining the relationships among trait motivation, moods, and motivational processes. Based on the results of the current study and previous studies, it is apparent that more research clarifying the relationship between competitive excellence and goal setting is needed. Results have been mixed with regards to this relationship, and one possible explanation is that there are moderating variables which influence the relationship between competitive excellence and goal setting. Future research should continue to study mood as a moderating variable and identify other potential moderating variables.

As previously mentioned, future research should develop mood induction techniques that will persist over time. Research methods are needed that can examine moods that cover both scales of the PANAS; they should examine high and low PA and high and low NA. It may be difficult to induce a high NA state in a laboratory setting. The high end of the NA scale is described by Watson et al. (1988) as, "subjective distress and unpleasurable engagement that subsumes a variety of aversive mood states, including anger, contempt, disgust, guilt, fear, and nervousness" (p. 1063). Methods of mood

induction that are typically used in laboratory research, such as writing autobiographical stories or watching movie clips, may not be successful in inducing negative moods of this extreme nature. Therefore, researchers may need to develop creative methods for inducing these high negative mood states. It will likely be difficult to get approval for such methods from universities' human subjects review boards. It would be advantageous to go beyond laboratory design and use field studies to capture the relationship between high negative mood and goal setting. Additionally, researchers could consider whether certain specific moods (e.g., joy, anger, calmness, frustration, etc.) have greater impact on the motivational process than others.

I would suggest that the situational motivation, or motivational climate, be measured and considered in future studies. The current study examined two individual difference variables, trait motivation and mood. No consideration was given to the perceived motivational nature of the situation. Was the problem solving task perceived as a high achievement situation? Did the study participants consider this task to be highly competitive or highly mastery oriented? The instructions for the task included elements of both competition and mastery; however the participants' perceptions of this task and climate were not measured. Future studies should consider how the situational motivation is related to mood, trait motivation, and goal setting.

Finally, there are other components to the motivational process that could be examined. This study focused on goal selection, specifically on self-selected levels of goal difficulty. Future researchers could examine how mood and motivational traits jointly influence goal revision in a long-term achievement task. Another possible avenue

for research is to study how mood and motivational traits jointly influence people's persistence in the face of failure at a task.

Conclusions.

This study contributed to our understanding of the motivational process, specifically personal goal setting. The results replicated the finding that high personal mastery leads to the selection of more difficult goals. The results also identified that the relationship between competitive excellence and selection of goal difficulty is more complex than perhaps has been considered in previous research. This study demonstrated that when individuals are high in competitive excellence mood does not matter and when they are low in competitive excellence mood does matter. High competitive excellence overrides peoples' moods in influencing their self-set level of goal difficulty. Finally, the results of this study gave support to the theories put forth by Gendolla's mood-behavior model and Forgas' affect infusion model.

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In the next questions, select the number that is exactly the same as the given number.

Given 57841676163876168

a. 57841676163846168
b. 57841676163876168
c. 57341676163376168
d. 57841676163875168
e. 57841676163876108

Given 73168739631894133

a. 73168739631894183
b. 73168739631894733
c. 73158729631894133
d. 73168739631894133
e. 73168439631894133

In the next questions, select the item that goes next in each sequence.

A C E G I K

a. L
b. M
c. N
d. O
e. J

7 14 21 28 35 42 49

a. 53
b. 54
c. 55
d. 56
e. 57

For the next questions, choose the correct answer. You may use the scrap paper to work out your answers (You may NOT use calculators).

Eight Kips & 14 Ligs can build 510 Tors in 10 hours. Thirteen Kips & 6 Ligs can build 492 Tors in 12 hours. At what rates do Kips & Ligs build Tors?

a. Kips build 2 Tors an hour; Ligs build 2.5 Tors an hour.
b. Kips build 2.5 Tors an hour; Ligs build 2 Tors an hour.
c. Kips build 3 Tors an hour; Ligs build 3.5 Tors an hour.
d. Kips build 3.5 Tors an hour; Ligs build 3 Tors an hour.
e. Kips build 2 Tors an hour; Ligs build 2 Tors an hour.

If there are 4 empty seats in a movie theatre, how many combinations are there for the number of ways 4 people could sit in these seats?

a. 14

b. 24

c. 20

d. 12

e. 44

Please take a moment to remember a *happy* memory from your life. You have a maximum of 10 minutes to write an essay describing this happy memory (Please do not use more than this 1 page for your essay). We will in NO way use this essay to identify you. In fact, you may destroy this essay at the end of this study.

Please take a moment to remember a *sad* memory from your life. You have a maximum of 10 minutes to write an essay describing this sad memory (Please do not use more than this 1 page for your essay). We will in NO way use this essay to identify you. In fact, you may destroy this essay at the end of this study.

Please take a moment to think about how you typically prepare for a college exam. You have a maximum of 10 minutes to write an essay describing the process you use to prepare for an exam. There is paper and pencil at your desk, which you may use to write your essay. We will in NO way use this essay to identify you. In fact, you may destroy it at the end of this study

Appendix C

Identification Number: _____ _____ _____

The following information is being collected to help us validate the representativeness of survey respondents. This information will *not* be used to identify individual responses in any way.

1. What is your gender? (please circle) Male / Female

2. What is your age? _____ years

3. Which of the following best describes you?
   a. Asian / Pacific-Islander / Asian-American
   b. Black / African / African-American
   c. Latino / Hispanic-American
   d. Native American / Alaskan Native
   e. White / Caucasian-American
   f. Other: Please describe: _____

4. Are you currently working in addition to attending college? (Please Circle) YES NO

Appendix D

Now that you are familiar with the problem-solving task, you are ready to consider setting goals for your performance on this task. In a few minutes you will be asked to perform the task. Please look at the options below and select the statement that accurately describes how you want to perform. *Remember:* There are a total of 52 questions and you have a maximum of 45 minutes to work on this task. You do NOT have to answer all of the questions and you may stop at any time.

Goal

Options

A. I prefer NOT to set a goal for this task.

B. I prefer to set a goal for this task. My goal is to earn the following number of points: ☐

Appendix E

Identification Number: _____ _____ _____

If you choose the "I prefer NOT to set a goal" option, you may skip this question. If you choose to set a goal for the performance task, we would like to better understand why you selected the goal that you did. Please answer the following statement.

1. **I chose my goal because (choose all of the options that apply to you):**
   - **(a) I wanted to solve more problems than the average number of problems typically solved by others.**
   - **(b) I wanted to challenge myself to get better at problem-solving tasks.**
   - **(c) I wanted to solve more of the problems than the other participants in this study.**
   - **(d) I wanted to show the researcher that I am good at problem-solving.**
   - **(e) I really enjoy logic problems & problem-solving and viewed this task as an opportunity to learn more about them.**
   - **(f) I do not know why I chose the goal I did.**

Table 1.

Descriptive Statistics, Alphas, and Correlations for All Study Variables.

	Mean	SD	1.	2.	3.	4.	5.	6.
1. MTQ-PM	70.94	9.72	(.89)					
2. MTQ-CE	50.18	10.88	.07	(.89)				
3. MTQ-MA	65.09	14.07	-.08	**.20**	(.89)			
4. Self-Set Level of Goal Difficulty	26.95	19.91	**.26**	**.16**	-.07	--		
5. PANAS-PA	22.84	8.27	**.18**	.08	-.05	**.14**	(.90)	
6. Performance	39.32	9.45	**.19**	.09	.04	**.27**	**.27**	--

Note. $N = 294$. Values in parentheses are alpha internal consistency reliabilities. Values in bold type are correlation coefficients significant at $p < .01$.

Table 2.

Frequencies of Self-Set Level of Goal Difficulty.

Self-Set Level of Goal Difficulty		# of Participants Selecting this Goal Level
0 (No Goal Option)		95
10		2
20		3
24		1
25		7
26		6
27		1
28		1
29		1
30		20
32		2
33		1
34		1
35		16
38		2
40		36
42		19
43		1
44		3
45		30
46		4
47		4
48		13
49		2
50		8
52		15

Note. $N = 294$. Participants who avoided goal setting by choosing the *no goal* option ($n = 95$). Participants who set a goal ($n = 199$).

Table 3.
Comparison of the Participant Samples in the Two Mood Conditions.

	Mean	SD	*t*	*p*	*d*
Age					
Positive Mood Condition	18.71	1.50	-1.82	.07	.21
Negative Mood Condition	19.11	2.34			
Goal Difficulty					
Positive Mood Condition	25.52	20.06	-1.37	.17	.16
Negative Mood	28.73	19.65			
MTQ-PM					
Positive Mood Condition	67.33	7.39	-1.16	.25	.14
Negative Mood	68.34	7.44			
MTQ-CE					
Positive Mood Condition	48.18	6.94	-0.35	.73	.04
Negative Mood	48.45	6.39			
MTQ-MA					
Positive Mood Condition	63.87	9.96	0.24	.81	.03
Negative Mood	63.59	9.80			
PANAS-PA Scale					
Positive Mood Condition	23.13	8.42	0.68	.50	.08
Negative Mood	22.47	8.10			
Task Performance					
Positive Mood Condition	38.46	9.76	-1.74	.08	.21
Negative Mood	40.38	8.96			

Notes. Positive Mood Condition (n = 163) and Negative Mood Condition (n = 131).

Table 4.

Results of Moderated Regression Analyses on Self-Set Level of Goal Difficulty.

	R	R^2_{adj}	*F*	*b*	*β*	*t*
Model 1:	.28	.07	**7.96****			
Hypothesis 6						
MTQ_PM				.50	.24	**4.22****
PA				.23	.09	1.63
MTQ_PM x PA				.00	.00	.05
Model 2:	.24	.05	**5.88****			
Hypothesis 7						
MTQ_CE				.28	.15	**2.69****
PA				.32	.13	**2.34***
MTQ_CE x PA				-.03	-.13	**-2.31***
Model 3:	.17	.02	**2.71***			
Hypothesis 8						
MTQ_ANX				-.08	-.06	-1.00
PA				.32	.13	**2.27***
MTQ_ANX x PA				-.01	-.07	-1.21

Note. $N = 294$. The PANAS PA Scale was used in place of the mood condition variable to represent participants' level of positive mood at the time of the study. The data for the independent variables was centered for the moderated regression analyses.
* $p < .05$, ** $p < .01$.

Figure 1. A model of how motivational traits and mood relate to the motivational process.

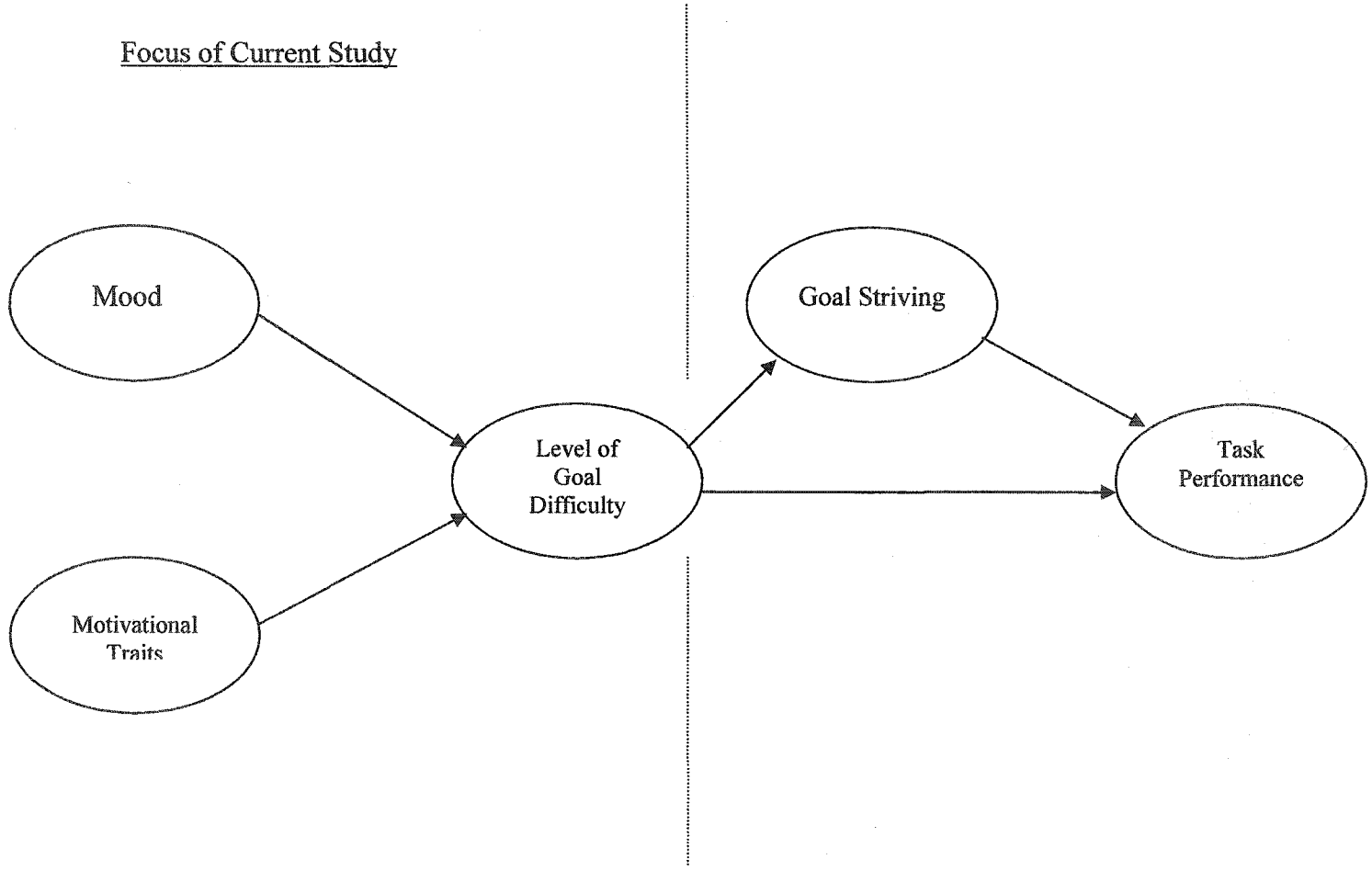

Figure 2. Relationship between mood, personal mastery, and goal difficulty.

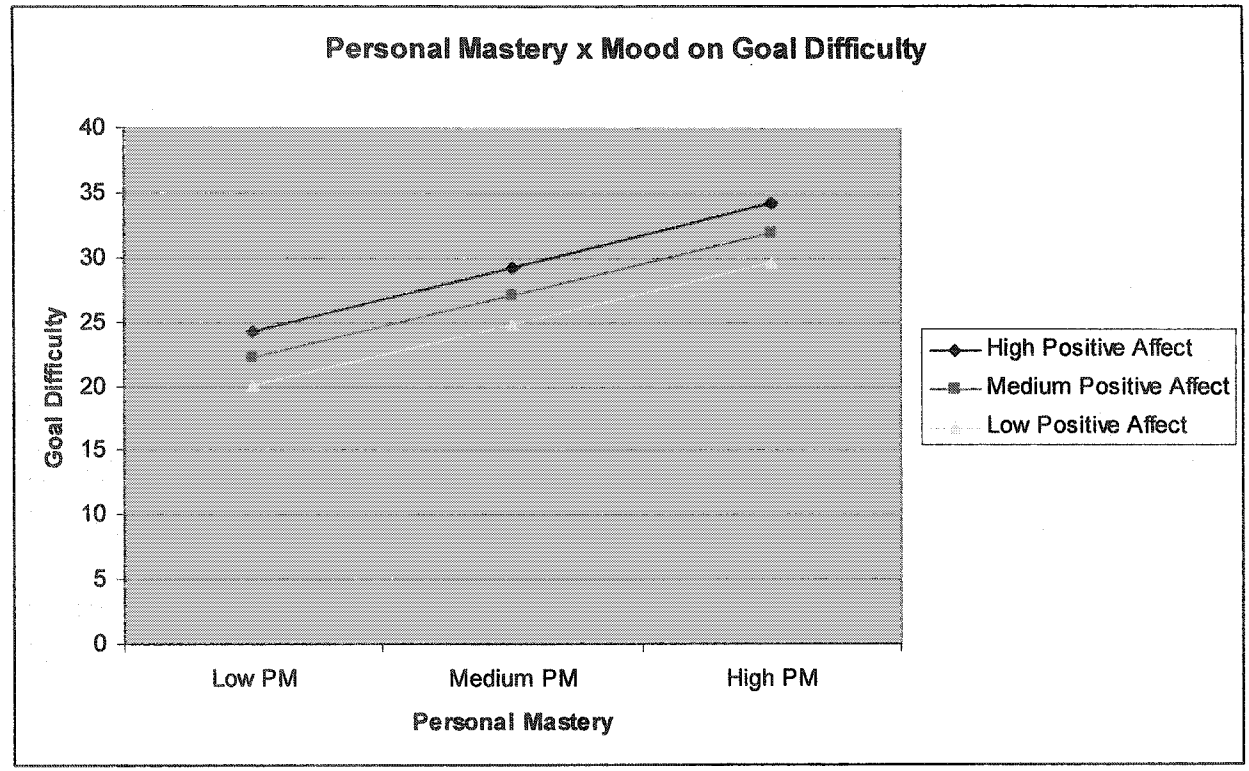

Figure 3. Relationship between mood, competitive excellence, and goal difficulty.

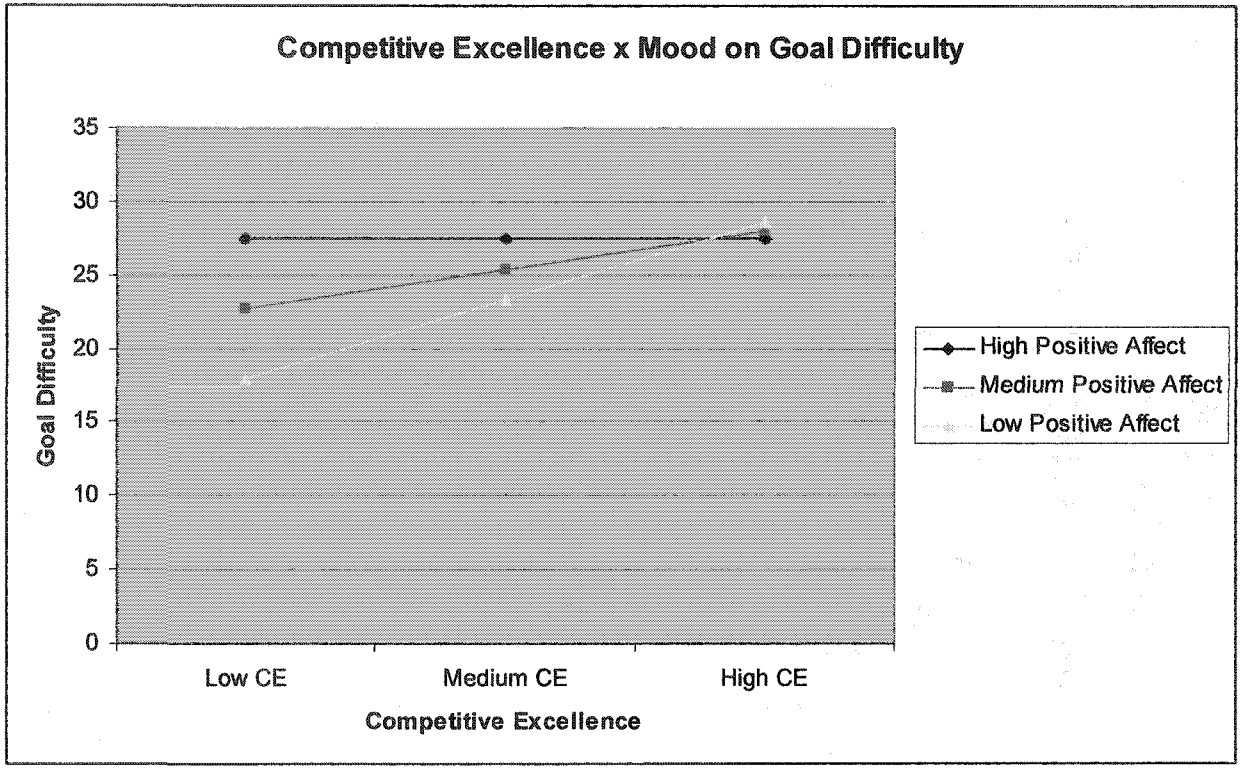

Figure 4. Relationship between mood, motivation anxiety, and goal difficulty.