

"WHAT DO I DO NOW?": REACTIONS TO NEGATIVE
DISCREPANCIES IN GOAL STRIVING

A SENIOR HONORS THESIS

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ABSTRACT

When individuals fail to reach a goal, they tend to make judgments about why and then make decisions about addressing subsequent goals. The relationship between failure to reach a goal (negative goal discrepancy) and reaction to a failure seen in cognitive and/or behavioral outcome decisions is assessed in an undergraduate psychology class ($n = 175$). Students' judgments of their attributions, state affect toward performance feedback, expectancies toward subsequent goals and changes in goals and behavior are measured. This study is conducted over three goal-striving and feedback-reception cycles (two midterms and a final). It is predicted that expectancy of reaching future goals is related to decisions about altering goals, with attribution judgments moderating the relationship between a negative goal discrepancy and expectancy. It is also predicted that a negative goal discrepancy is related to decisions about altering behavior, with attribution judgments moderating this relationship. The role of affect in the goal striving process is also examined. The results of this research offer partial support for the proposed relationships. The locus of causality attribution was found to moderate many of the relationships between discrepancy and the cognitive and behavioral reactions to it. In addition it is clear that affect does have a place in the discrepancy reduction process, though its exact role is not clear. Future research should attempt to address these questions in more depth.

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CHAPTER ONE

INTRODUCTION

Individuals are motivated to set and achieve goals. There are many domains in which goal-striving may be studied. Goal-striving may be studied in any situation in which individuals set goals, perform a task, and receive feedback on how they may be progressing toward that goal. Some examples of such situations could be in sales, with weekly sales quotas and feedback about how much has been sold; in athletics, with self-set performance goals and constant performance feedback during competition; and in rehabilitation programs, where patients are given goals to work toward helping them toward health. For individuals pursuing higher education one of the most salient contexts of goal-striving is the classroom. A class gives the opportunity for a student to set many goals for assignments and exams. In addition students will usually receive feedback from an instructor. The educational setting is the one chosen for the current research reported here.

Students may set a goal to attain a certain grade for a given class; this is considered a *distal goal*. Alternately, goals are set to attain a certain grade on homework and exams, these are considered *proximal goals*. These goals form a hierarchy, in that proximal goals may help individuals to reach a higher level distal goal (Donovan & Williams, 2003). An example of this hierarchy at work is a student who wants a “B” in a particular course. Setting grade goals for homework and exams that will help him to attain the desired course grade goal. The student may want to set a proximal goal of getting at least a “B” on the first exam, making a “B” for the desired course goal more easily attainable. Once a goal is set, it is important to get feedback relevant to that goal. In this scenario, the student utilizes the grade that he receives on homework or an exam

as feedback to compare to his desired goal. This feedback for a proximal goal can also be used to assess how the student is proceeding toward attainment of the distal grade goal for the course. It is of particular importance that both a goal and the feedback related to that goal are specific: the student must be able to easily compare them to assess whether or not he is meeting his goal (Campion & Lord, 1982).

Once the student compares the goal to the feedback there are three possible outcomes: the student has attained his goal (the student got a “B” on the first exam), the student has exceeded the goal, (the student got an “A”), and the student has not attained the goal (the student got a “C” or less). The difference between the goal and the relevant feedback is a *discrepancy*. Discrepancy judgments are assessed in terms of magnitude and direction. A student who received an “A” and had a goal of a “B”, would experience a *positive discrepancy*. A student who set a goal of a “B” and got a “C” or lower would experience a *negative discrepancy*. The further from the desired goal that the feedback is, the greater the magnitude of the discrepancy. A student who set a goal of an “A” and received a “D” experiences a *large negative discrepancy*. A student who set a goal of an “A” and received a “B” experiences a *small negative discrepancy*. How students react both cognitively and behaviorally to both positive and negative discrepancies is the focus of the research reported here.

The reactions an individual has to a negative goal discrepancy are affected by the individual’s interpretation of that discrepancy. One important aspect of this interpretation is the judgments an individual makes as to the causes of the discrepancy. The interpretation placed on the discrepancy will in turn affect the expectancy she has of reaching subsequent goals, and will also aid in identifying a course of action for reducing the discrepancy. The student may continue trying to reach the original goal in multiple ways. She may alter her effort by working harder or

spending more time studying. She may choose to alter her tactics, by changing the way she is studying. She may also choose to change her goal. When an individual decides to change the original goal, a decision must be made to either change a proximal goal, the distal goal, or both. An individual may decide to keep the course grade goal (distal goal) and alter the exam goal (proximal) by setting a more difficult goal for the next exam or homework assignment, an “A”. The student may also try setting an easier distal goal for the course, such as a “B”. If feedback has not been sufficient to warrant changing any goals or behavior, an individual may wait until they have received more feedback to make alterations.

The model developed and tested in this research project can be summarized as follows: The discrepancy between the feedback an individual receives after failing to meet a self-set goal, combined with attribution judgments that an individual makes about why he failed to attain his goal, affects the affect one feels toward the discrepancy and the judgments one makes of the expectancy of reaching similar subsequent goals. These expectancy judgments then affect the decision made to change a goal. This same discrepancy between the feedback and the self-set goal affects the amount that behavior will change and this relationship is moderated by the attribution judgments that are made as to the cause of the discrepancy. Figure 1.1 summarizes this model, which will be explained in more detail below.

This thesis starts with a review of the relevant theories addressing the goal-striving phenomena. Then the model in Figure 1.1 will be presented and developed. The following section contains a description of a study conducted to test the ideas presented. A final section presents the conclusions that were drawn from the study.

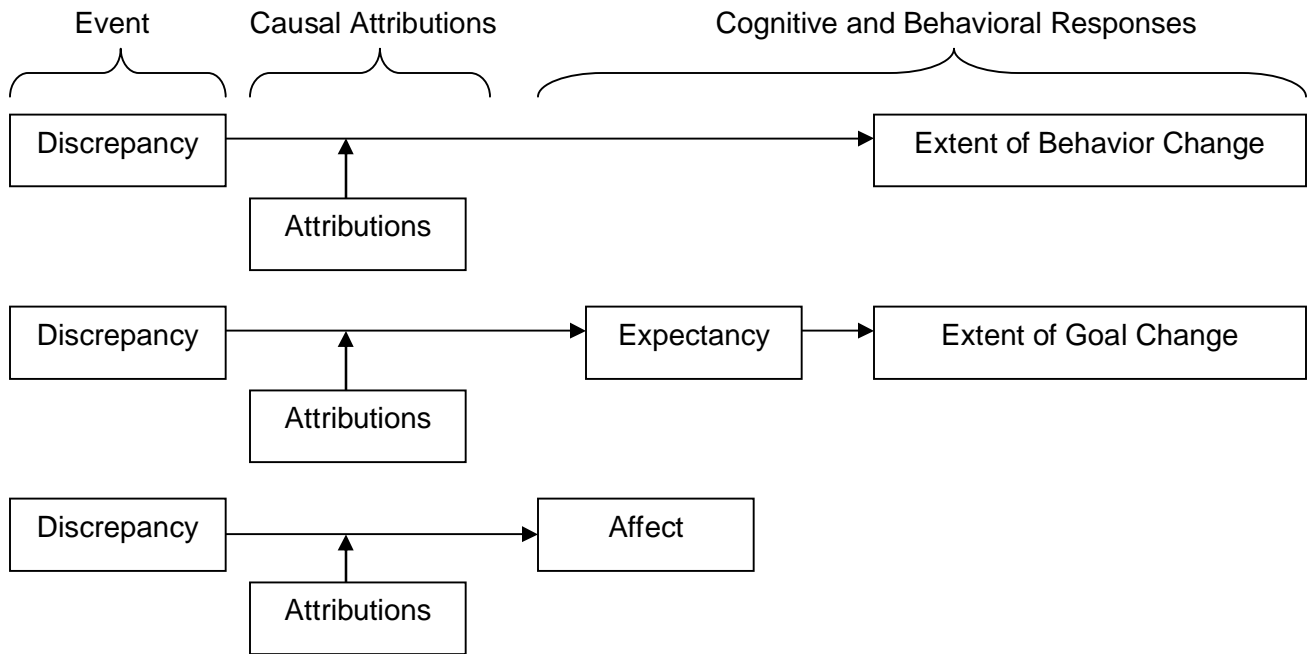


Figure 1.1: Predicted Path of Discrepancy Reactions Leading to Goal, Behavior and Affective Change

Goal-Striving Theories

Control Theory

Campion and Lord (1982) argue that the existing theories of goal-striving do not adequately emphasize the importance of feedback in the goal-striving process. They also argue that the laboratory setting in which most of the previous goal-striving research has been conducted does not generalize well to real world settings where priorities and multiple goals may affect goal-striving. Campion and Lord develop a control systems model of motivation which assumes that individuals look for a discrepancy and, if one is found, are then motivated to reduce it. Their theory includes a mechanism to monitor a goal compared to the feedback and a decision-making process that enables the goal setter to choose the best way to attain a goal. The control systems model initiates when an individual sets a goal for a task. If an individual has encountered a similar task previously she will be likely to set goals at or close to the same level as the previous task's goal. If the task is novel, she may look to social clues for acceptable goal levels. After a goal is set, it must be monitored: the "desired state" of the goal is compared to any performance feedback the individual receives related to the task. If a discrepancy is discovered, an individual is often motivated to reduce the discrepancy by either cognitively changing the goal or behaviorally modifying the performance level. Conversely, an individual may feel that he has insufficient information related to the causes of the discrepancy to modify the goals or the behavior, in which case the individual may wait to attain more feedback before reacting to the discrepancy. Depending on these decisions, according to Campion and Lord, there are two discrepancy reduction paths available. If an individual chooses to change the goal, the cycle starts again with a new goal to which subsequent feedback will be compared. If a behavioral change is made, an

action will be taken in an attempt to reduce the discrepancy; feedback will be received and compared again to the original goal.

Campion and Lord place great importance on the role of having both a goal and feedback for the cycle to work effectively. They also argue that it is important that the goal and the feedback be specific, otherwise a discrepancy will be difficult to detect.

Campion and Lord also test seven hypotheses related to the control theory model of goal-setting. Five of the seven hypotheses presented are of particular interest. The first, that small discrepancies (one grade or less) between a goal and the actual performance as indicated by the feedback will have no effect on an individual; however large discrepancies will produce a lowering of subsequent goals. Second, students who do not meet their goals will lower subsequent goals. Third, the size of the discrepancy will affect effort positively. Fourth, the frequency of failure to meet goals will have a positive relationship with (a) increases in effort and (b) the lowering of subsequent goals. Finally, the number of students who lower their goals will rise after more failures.

The subjects in this study were college students in an introductory level psychology class. Goals were measured by asking the students what their minimal acceptable grade was for the class tests and the final class grade. Effort was operationalized in more than one way. The first was a scale asking students to rate their effort. As another measure of effort, students were also asked to keep track of how often and how long they studied on a daily bases and before a test. Performance was measured by the grades students received on the exams and the final cumulative grade.

The first hypothesis, that small discrepancies would not produce enough significant discomfort to cause changes in the goal reaching behavior, was only supported after the first exam. The second hypothesis, that students who do not reach their goals will lower their subsequent

goals, was not significantly supported. Students who failed to reach their goals only lowered their goals during the second half of the course. While reanalyzing the data, it was found that students who failed to reach their goals often actually raised subsequent goals during the first half of the course. The third hypothesis, that the amount a student fails by will correlate positively with the subsequent amount an individual will raise effort levels, was supported on most measures. The fourth hypothesis, that (a) the frequency of failure will lead to increased effort, was significant on a few of the measures of effort. Part B of the fourth hypothesis, that frequency of failure will effect the lowering of later goals, was only clear in that the students who failed to meet goals were more likely to lower later goals than students who did meet their goals. In response to hypothesis five, consecutive failures did have a positive relationship with the lowering subsequent goals. One of the more interesting findings, that subjects who were failing to meet their goals raised subsequent goals, foreshadows some of the later research that will be reviewed on using proximal goals to reach distal goals.

These hypotheses give us a clearer picture of what happens after a discrepancy is discovered. Repeated discrepancies generally produce decisions that change the path one uses to reach a goal. Individuals will choose to change either behaviorally, by changing effort (size of the discrepancy and the frequency of a negative discrepancy), or cognitively, by changing subsequent goals (frequency of and repeated discrepancy) based on the feedback one receives about their performance. Champion and Lord (1982) suggest that the students may try out familiar schemas of how to study for a class, only changing their response to a set of goals after repeatedly failing to meet them.

Klein (1989) takes Champion and Lord's control theory one step further by integrating more cognitive processes from other motivation theories. Klein takes a closer look at the cognitive,

behavioral, and emotional reactions to goals and feedback, as well as the role that attributions, expectancies, and goal hierarchy's play in determining those reactions. The cognitive processes that Klein adds to the control theory model fall between the comparison of the goal with the feedback, and the decision mechanism used to decide which action to take.

Klein's model initially includes two possible reactions to a perceived discrepancy, one unconscious and the other conscious. The unconscious path is a scripted response to a familiar discrepancy. If a student gets a lower grade than expected, he may have familiar tactics for reacting to a discrepancy that he has used many times before. This response would take place automatically with little or no thought. The other path is a conscious response to a discrepancy, involving problem-solving skills and rational thinking. It initiates with a causal search for an explanation for the discrepancy. This causal search focuses on the perceived causes for the reason the goal was not reached. These causes are referred to as *attributions*.

Klein argues that the most influential attributional dimension for future action is the *stability* of the cause. A stable cause is a cause that has little or no variability over time. A student identifying a stable cause for a negative goal discrepancy might attribute a grade of a "D" on an exam to lack of aptitude in that particular subject area or an overly strict instructor. These are causes that are likely to remain the same for subsequent exams. Examples of unstable causes include not putting enough effort into studying for the exam or having a bad day. These are causes that may not be likely to remain the same for subsequent exams. The stability of the cause of the discrepancy then determines the subsequent change in the expectancy of reaching a goal.

Both Campion and Lord's control theory and Klein's integrated control theory leave several issues unaddressed. Klein addresses the effects of one dimension of attributional framework as relevant. This is may be an understatement of the role that attributions play in the

goal-striving process. Also left completely out of both theories is the role that affect plays in the goal-striving process. These issues are addressed in the following sections.

The Role of Attributions in Goal Theories

Attribution Theory

According to Weiner (1985, 1986), when people are surprised about an outcome, such as when one fails to reach a self-set goal, they initiate an attributional search for the causal factors that affected this outcome. An attributional search is search for the reasons why something happened. Causal factors are the answers to the question “why?” Causal factors are commonly organized on three bipolar dimensions: *locus*, *stability*, and *controllability*. Locus refers to causes that are internal or external. Stability refers to causes that are consistent (stable), or varied (unstable) across time. Controllability refers to causes that the individual feels they have volitional control over (controllable), or do not have any control over (uncontrollable). For measurement purposes the causes individuals come up with to explain their performance are coded with respect to the previously mentioned dimensions. The causes as most individuals think of them are represented by *attributional elements*. These elements are what lay-individuals think of as the causes of an outcome, such as ability, effort, task ease and luck (Weiner, 1985). For instance the student that attributes the cause of the negative goal discrepancy to poor ability is attributing the discrepancy to a cause that is internal, stable, and uncontrollable. Depending on the specific attributional dimensions that one uses to explain the discrepancy, different paths to reduce the discrepancy will be chosen. It is important to note that causal attributions are the perceptions of an individual and therefore may not be accurate or may be subject to biases. Accuracy is trivial however, because the individual’s perceptions of the causes of the discrepancy are the salient causes, therefore, the basis on which further decisions will be made. There has been much

relevant research into the affects that attributions have on the goal-striving process. This research is outlined next.

Attributions and Goals

Thomas and Mathieu (1994) proposed and tested a model of goals and performance in single performance episodes, and how attributions affect goal processes between repeated performance episodes. The study was based on Bandera's Social Cognitive Theory and Locke and Latham's Goal-Setting Theory. After a performance episode, once feedback is received, an individual compares their actual performance with their goal. If there is a discrepancy between these, the causal search will be initiated. When an individual has a positive discrepancy there should be higher satisfaction and self-efficacy. When an individual has a negative discrepancy, there will be lower self-efficacy and satisfaction. Thomas and Mathieu hypothesize that when faced with a discrepancy, the locus dimension of causal attributions has an effect on satisfaction. They also hypothesized that the stability dimension will have an effect on self-efficacy.

The participants in this study were students enrolled in two introductory psychology classes. The subjects were given a survey to complete after each of the three class exams. Their goals were measured by asking students their lowest acceptable grade for each exam. Their performance was measured by the actual grades they received for each exam and the discrepancy was computed using the difference between the two grades. Self-efficacy and satisfaction were both assessed using scales. The locus and stability attributions were measured using a causal dimension scale (CDS), as developed by Russell (as cited in Thomas and Mathieu, 1994). The influence of the causal attribution dimensions on satisfaction and self-efficacy was tested using moderated regression analysis.

As Thomas and Mathieu (1994) hypothesized, the relationship between the discrepancy and self-efficacy was affected by stability attributions. The relationship between the discrepancy and satisfaction was affected by locus attributions only after the first exam. This could be because the students were unfamiliar with the class initially and they became more familiar with the class further into the semester. Overall this study showed that individuals' interpretations of the causes of their performance have an impact on their reactions to discrepancy information.

Williams, Donovan and Dodge's (2000) primary research question had to do with testing the control theory model of goal processes against Bandera's social cognitive theory model of goal processes through both goal-striving processes and goal revision processes. Their research question that is most relevant to this thesis was: what goal processes affect decisions about how individuals choose to deal with negative discrepancies. The authors discuss two main ways through which discrepancies can be reduced: by changing performance level, either by exerting more effort or changing behavioral strategies; or by changing the goal (goal revision). As seen earlier in Champion and Lord (1982), early discrepancies can cause individuals to increase goals; however, after repeated failures this no longer remains the ideal strategy. Repeated failure then pushes the individual to make a decision to reduce the discrepancy by changing the behavior (strategy or effort) by revising the goal, or by withdrawing from the activity all together. Williams et al. (2000) believe these decisions are affected by attributions. depending on whether the causes of the performance are judged as internal/external, stable/unstable, or controllable/uncontrollable.

Williams et al. (2000) hypothesize that; the size of the negative discrepancy will affect the size of the goal revision, that lowering goals will reduce goal discrepancies but not eliminate them, and that stability and controllability attributions will moderate the relationship between goal

discrepancies and the decisions on how to deal them. In more detail, negative goal discrepancies thought to be produced by stable or uncontrollable causes will choose downward goal reduction because they feel they cannot change the situation enough to reach goals. Individuals who experience negative goal discrepancies thought to be produced by unstable or controllable causes will be less likely to choose downward goal reduction, because they believe they can change performance levels to reduce the discrepancy.

The subjects of this study were track and field athletes at the college level. Initial goals were both the season goal, as well as performance goals for competitions. Performance was measured by recording the subjects' performance during competition, and discrepancy was measured by the difference between the initial goal and the performance. Goal revision was measured by the difference in the initial goal from any new, revised goals, and attributions about performance were measured by Russell's causal perception scale.

The results of the first hypothesis, that the amount of the goal revision was significantly related to the size of the discrepancy, showed further support of the hypothesis in the Campion and Lord (1982) study. Hypothesis two also found significant support in the data. The subjects, when reducing discrepancies, normally only lowered the goal enough to reduce the discrepancy, not to eliminate it. Of the most interest here are the results of the hypothesis dealing with the attributions of locus, stability and controllability. There was significant evidence for showing that the size of the discrepancy influences the amount a goal was reduced, and that this relationship was affected by performance attributions. When controllability was perceived as low (uncontrollable), individuals tended to revise their goals downward. When confronted with a large discrepancy, however, and when controllability was perceived as high, there was no effect on goal revision. The controllability dimension was the only one of the attributional dimension that was found to

have significant effect on goal revision. One interesting relationship found in the supplemental analysis was that temporal factors seem to make a difference in the choices to reduce a goal. At the beginning of the season the subjects did not often revise their goals, but as the season neared its end discrepancies were more often revised.

Donovan and Williams (2003) focus their goal process research on the study of proximal goal as steps to reach a distal goal. They focus on goal self-regulation over multiple performance episodes, specifically focusing on revisions to goals and the factors that effect the decision to revise a goal or change the effort or strategy to reduce discrepancy for subsequent goals. Their first hypothesis states that there is a stronger relationship between discrepancies and goal revision to both proximal and distal goals in the later half of a performance episode. They also examine the attributional effects on the decision to reduce goals or change behaviors. Hypothesis two states that there will be a stronger relationship between discrepancies and proximal and distal goal revision when performance is attributed to stable causes. Hypothesis three states that there will be a stronger relationship between discrepancies and proximal and distal goal revision when performance is perceived as being attributed to controllable causes.

The study was conducted using varsity level track and field athletes at the college level. Subjects were given surveys to fill out. All measures were the same as the ones used in the previous research done by Williams, et al. (2000).

Donovan and Williams' results made some important contributions to the goal process literature. They found that goal discrepancies were better at predicting proximal goal revision than distal goal revision. Large distal goal discrepancies often caused individuals to raise their proximal goals presumably as a means of reaching the more important distal goal. As for temporal factors, goal revision was found to be more frequent in the second half of the season. This could

be due to the fact that motivation to achieve goals may be stronger in the second half of the season as there is less time to reduce large discrepancies. As for the effects of attributional judgments on the goal revision process, significant effects were only found on the dimension of stability and not for controllability which supports Thomas and Mathieu's (1994) earlier results, and is contrary to Williams et al.'s (2000) earlier results. A large discrepancy paired with a judgment of stable causes of performance often lead to more goal revision because future expectancy of success was lower since future outcomes were likely to remain the same. Large discrepancies paired with perceived unstable causes of performance often lead to less goal revision, because future expectancy was higher and the individual judged that it was possible to alter future outcomes. This study shows that both temporal and attributional factors have an important impact on decisions to revise goals when discrepancies are produced both proximally and distally.

Donovan, Dwight and Schneider (2004a) focused their research on how much effort changes as a result of discrepancies between performance and goals and how this was affected by both performance orientated goals and learning oriented goals. The latter will be disregarded for the purpose of this thesis. The first hypothesis of interest, that the size of discrepancies will predict the magnitude of change in effort, is a replication of earlier findings by Donovan and Williams (2003). The second hypothesis of interest is based on Bandera's Social Cognitive Theory, although it shows some relevance to this thesis's research question when compared to Weiner's attribution theory of motivation, is that the discrepancy's relationship with change in effort will be moderated by self-efficacy. Individual with high self-efficacy (perception of strong ability) will choose to change their effort more than individuals with low self-efficacy.

The hypotheses were addressed using subjects in a simulated sales training seminar. Asking participant to name a goal for the week of training assessed the goal. The discrepancy was

then calculated as the difference between the goal the participant set and the daily number of training calls they made, this was the feedback the participants received. Since the goal was for the week and the number of calls were calculated daily there was a negative discrepancy every day. Effort was assessed as the number of training calls made. Change in effort was calculated as the difference between the number of calls made the previous day and the number of calls made the next day.

The first hypothesis that the larger an individual's discrepancy was, the more effort that individual would produce to reduce the discrepancy, was supported. The second hypothesis about self-efficacy moderating the relationship between a discrepancy and changes in effort was not supported. Donovan et al. (2004a) saw two plausible reasons for this. Those individuals high in self-efficacy believed that eventually their ability would lead them to success. Another reason they gave is that these same individuals may have been trying to reduce the discrepancy using methods other than changes in effort such as changing performance strategies.

Byrd and Donovan (2004) examine the effect of a multiple goal environment on negative goal discrepancies and how individuals choose to reduce those discrepancies. These hypotheses are repeated from the previously mentioned literature and are set in the context of individuals who are trying to attain more than one goal at one time. The first hypothesis is that as the size of a negative discrepancy increases, the size of the subsequent goal revision will also increase. The second hypothesis is that individuals who perceive stable attributions as responsible for their performance will be more likely to revise their goals than those individuals who perceive unstable attributions for the causes of their performance. The last hypothesis is that those individuals who perceive uncontrollable attributions as responsible for performance will be more likely than those

individuals who perceive controllable attributions for the causes of their performance to revise their goals.

The subjects were college students who received extra credit for their involvement in the study. They participated in two tasks simulating a media rental store and movie theater. Students were responsible for scheduling films to show given certain parameters, as well as processing electronic rental requests. Self-set goals were recorded by asking the individuals what their goals were after they had read a tutorial on what they would be completing. The number of correctly completed tasks indicated the performance levels. Causal attributions were measured using the same attribution scale mentioned in previous studies. Discrepancies were measured by dividing performance level by goal level, and then dividing a new task goal by the previous task goal assessed revision.

The first hypothesis was not supported. Students who failed their goals the most tended to revise their goals upward more. The second hypothesis, that stability attributions moderate discrepancies, was also not supported. The third hypothesis, like the first one was not supported as more goal revision occurred when subjects perceived the causes of their performance as more controllable than uncontrollable. It could be that in the real world, where individuals often have multiple goals operating at the same time, the processes of goal revision are contrary to what has been studied and theorized in settings that just focus on one goal at a time.

Donovan, Dwight, and Schneider (2004b) examined goal revision in an organizational setting and how attributions about discrepancies affect it. As hypothesized in earlier studies, these authors believe that both stability and controllability have an effect on the relationship between a goal and the discrepancy. They hypothesize that stable attributions made about performance lead to more goal revision than unstable attributions do. They also believe that uncontrollability

attributions made about performance levels lead to more goal revision than controllable attributions do.

The participants in this study were sales trainees in a simulated sales training program. The measures were the same as the other Donovan et al. (2004a) experiment reviewed earlier with the addition of Russell's (as cited in Donovan et al., 2004b) attribution scale as the measure of attributions.

The results of the first hypothesis concluded that, as supported by numerous previous studies, stable attributional judgments lead to more goal revision than unstable attributional judgments of performance. Also, as supported in much of the prior research, no support was found for controllability attributions moderating goal revision. Both of these conclusions support previously discussed conclusions.

Throughout the research, two main factors have had an influence on decisions regarding negative goal discrepancies. The temporal factor was not originally addressed in the research question; however, after a review of the literature it seems to have had a large impact on these decisions. If the goal-striving process occurs across a time, (such as a school quarter, or an athletic season) these temporal factors appear to be of even greater importance than the attributional judgments being made. If there is sufficient time left in the period in which a goal is being pursued, then a failure will often lead the individual to choose to keep original goals and change behavior or to even raise these early goals to help motivate the individual to meet the distal goal. If time appears to be running out, and the discrepancies are still large, then an individual will be motivated to reduce the discrepancy by reducing the goal. The temporal factor works on what an individual perceives future expectancy for goal attainment to be.

Like the temporal factors, future goal-attainment is also perceived through the attributional judgments made as to the causes of the discrepancy. Of the three attributional factors addressed in the research, only those of stability and controllability seemed to have a significant effect, though this effect is still somewhat unclear because the support is split as to whether controllability or stability is more important. The research has thus far concluded that the locus attributions do not significantly impact goal-striving processes.

Both stable and uncontrollable attributions affect the decision to change or keep goals in a similar manner. When an individual sees a discrepancy that was caused by stable causes they are seen as difficult to change. In the same way, uncontrollable causes of a discrepancy too would be seen as difficult to change, if the individual perceives that they have less control over the situation. Logically, an individual who perceives they have little control over the outcome of her performance would choose to reduce a negative discrepancy by lowering her goals. Conversely, when a negative discrepancy occurs and she attributes unstable (easily varied) causes to it, or controllable causes, she would perceive that she has some effect on the expectancy of reaching her goal. She would then continue to keep the original goal by altering her behavior in order to reach it. This leads us to the first four hypotheses

Hypothesis 1. The relationship between the size of a discrepancy and the extent of behavior change will be positive.

When an individual does not reach his goal, the further away his actual performance is from his original goal, and the more he will be likely to change the way he is going about reaching his goal. Attributions should have an effect on how much he decides to change his behavior. If the individual believes the discrepancy is due to factors that are part of him he will be more likely to change his behavior. Stability attributions should not affect the relationship between the

discrepancy and behavior change. This is because how stable a cause is, has little to do with how much and individual will alter his behavior. Controllability is predicted to affect how much an individual will change his behavior because if an individual has control over the cause of the discrepancy, he should be able to change his behavior to reach the next goal. These relationships are reflected in the following three hypothesis and prediction graphs (see Figure 1.2).

Hypothesis 2. The relationship between the size of a discrepancy and the extent of behavior change will be moderated by locus such that the amount of behavior change will be larger when students attribute the cause of a discrepancy as internal rather than external.

Hypothesis 3. The relationship between the size of a discrepancy and the extent of behavior change will not be moderated by stability; the relationship will be equally positive when students attribute the cause of the discrepancy as being stable or unstable.

Hypothesis 4. The relationship between the size of a discrepancy and the extent of behavior change will be moderated by controllability such that the relationship will be more positive when students attribute the cause of the discrepancy as being more controllable than uncontrollable.

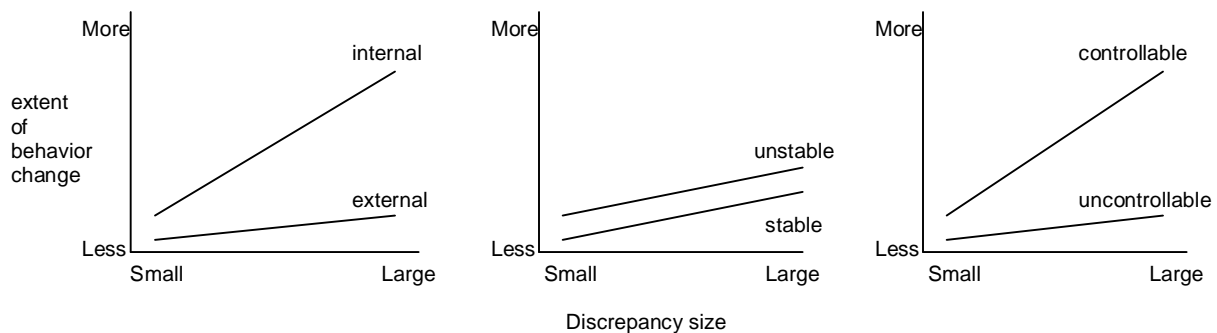


Figure 1.2: Predicted outcome of hypothesis two, three and four: the effects of attributions and discrepancy size on the extent of behavior change

The Role of Expectancies in Goal Theories

Expectancies

The *expectancy* of reaching a similar subsequent goal is influenced by the causal attribution judgments as to the cause of a negative discrepancy and in turn, influences the decisions of how one reacts to the goal discrepancy. The expectancy of a goal is a combination of how attractive the prospect of attaining a goal is and the expectancy of attaining that goal. If the cause of the discrepancy is perceived as stable, the change in the expectancy is likely to be greater than if the cause is perceived as unstable. The student who perceived the cause of the discrepancy as poor ability (stable) is likely to have a lower expectancy of getting an “A” in a class than a student who perceives the cause of a discrepancy as a bad day (unstable). Uncontrollable causes of a discrepancy are seen as difficult to change, if the individual perceives that they have little control over the situation. Logically, individuals who perceive they have no control over the outcome of their performance would choose to reduce a negative discrepancy by lowering their goals. Conversely, when a negative discrepancy occurs and an individual attributes unstable or controllable causes to it, the individual would perceive that he or she is able to affect the expectancy of reaching the goal. He would then continue to keep the original goal by altering his behavior to reach it. It is unlikely that internal and external factors will affect expectancy much. Based on this perception of expectancy a decision should be made to either work harder to reach the original goal, if the expectancy of reaching a similar subsequent goal is high, or withdraw from the original goal and set a lower goal, if the expectancy of reaching a similar subsequent goal is low.

Not much prior research has been done regarding the effects attributions and discrepancies on an individual's expectancy of reaching similar subsequent goals and these effects on the decision to change the original goal. Most of the previously discussed research dealt with the causal attributions on the dimensions of stability and/or controllability as the cause of students' goal revision (Williams et al., 2000; Thomas & Mathieu, 1994; Donovan & Williams 2003; Donovan et al. 2004b). Weiner, (1986) theorized that stability attributions alone would effect the expectancy of success of attaining a goal. According to Weiner, if an individual attributes their performance to something that is likely to remain the same (something stable) then it is likely that success will result in an upward shift in expectancy, and failure will result in a downward shift in expectancy. Conversely, Weiner also thought that if conditions are likely to change, they are unstable, then it is likely that any shift in expectancy, will result in a small, if any, change in the expectancy of reaching the goal.

From these conclusions I hypothesize that there will be a relationship between the size of a goal discrepancy and the expectancy of reaching a similar subsequent goal for the following exam period. However, also important is an individual's cognitive reactions to the discrepancy. So when the student does not reach his goals, he will think of the causes of his performance and that will affect his expectancy. In addition to testing if stability has a moderating effect on the decision to change a goal, I will also test the moderating effect of the other attributional dimensions of controllability and locus.

The following five hypotheses are related to the relationship between discrepancies and attributions on the expectancy of reaching a similar subsequent goal, and the relationship between the expectancy and how much goal change an individual engages in.

Hypothesis 5. The relationship between the size of a discrepancy and the expectancy of success for the next goal if the goal remains unchanged will be negative such that when the size of the discrepancy is large the expectancy of attaining the next goal is low.

The negative relationship between the size of a discrepancy and the expectancy will be moderated by attributions in the following ways:

Hypothesis 6. The negative relationship between the size of a discrepancy and the expectancy will not be moderated by locus so the relationship will be equally negative when students attribute the cause of a discrepancy as internal or external.

Hypothesis 7. The negative relationship between the size of a discrepancy and the expectancy will be moderated by stability such that the relationship will be more negative when students attribute the cause of the discrepancy as being more stable than unstable.

Hypothesis 8. The negative relationship between the size of a discrepancy and the expectancy will be moderated by controllability such that the relationship will be more negative when students attribute the cause of the discrepancy as being more uncontrollable than controllable.

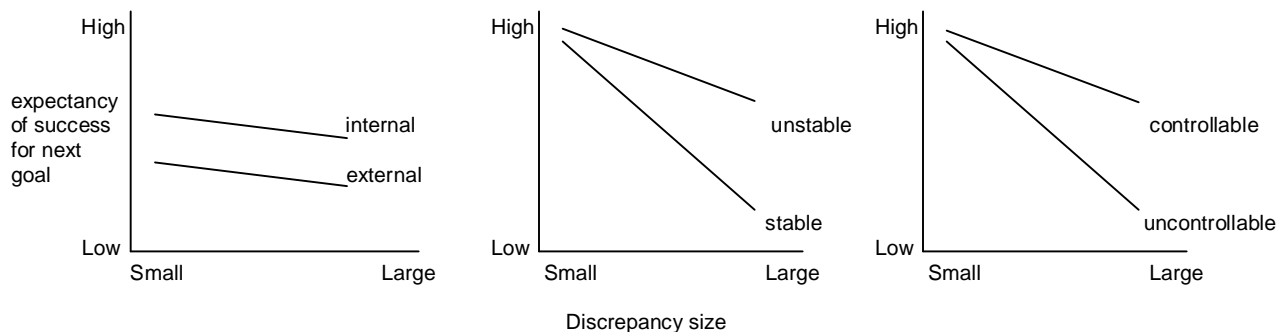


Figure 1.3: Predicted outcome of hypothesis six, seven and eight: the effects of attributions and discrepancy size on the expectancy of future success.

It is expected that the expectancy of attaining a similar subsequent goal will affect how much an individual chooses to change her goal. If the individual does not have a high expectancy of reaching a similar subsequent goal, she will be more likely to lower her goal.

Hypothesis 9. The relationship between the expectancy of success for the next goal if the goal remains unchanged and the extent that an individual changes her goal will be negative.

The Role of Affect in Goal Theories

Core Affect

Russell and Barrett (1999; Russell, 2003) developed a theory of core affect as the most basic building block of what is commonly referred to as emotions. Core affect is a feeling which is felt on a conscious level. Core affect is always present even if it is not salient enough to be noticed. It may be an undirected feeling, such as a general good feeling, or it can be directed at an object, such as a negative discrepancy between goals and feedback. Core affect is measured on the two dimensions, pleasure and activation, which are independent of each other. The bipolar dimension of pleasure-displeasure represents how pleasant a particular feeling is. One end of the pleasant-unpleasant dimension can be represented by agony (extremely unpleasant); the opposite end of the dimension can be represented as ecstasy (extremely pleasant). The dimension of activation and deactivation represents mobilization or alertness. Extreme deactivation can be represented by sleep, while extreme activation is represented by frenetic excitement. Affect occurs on the two axes of these dimensions at any point. It should be noted that throughout this thesis activation and arousal are used interchangeably to refer to affect felt on the active dimension. When there is a change in core affect individuals initiate a causal search of why, which often includes attributions. Russell (2003) has used the term “attributed affect” to represent core affect that has a cause. In the present context, the cause or object of the affect would be the discrepancy

between goal and feedback, and the nature of that affect would be determined by causal attributions.

Affect and Goals

Assuming that an individual cares about goal accomplishment, the larger a discrepancy is the less pleasant the individual's affect is likely to be. Someone who does not meet their goals will not feel "good" about not meeting his goal. In addition, the attributions the individual makes as to the cause of his performance should affect the level of pleasure of that person's. If the individual believes that the cause is due to something about himself, rather than something outside of himself, the stronger the relationship between the discrepancy and the affect. If the cause is something stable then it will be seen as less likely to change, so that the affect felt toward the discrepancy will be much more unpleasant. If the cause of the discrepancy is seen as something that is uncontrollable, the individual cannot change it by volition, the affect felt will be much more unpleasant. These arguments are reflected in the following hypotheses (see Figure 1.4).

Hypothesis 10. The relationship between the size of a discrepancy and the affect felt toward the previous goal discrepancy on the pleasant/unpleasant axis will be negative, such that when the size of the discrepancy is large the student will be more likely to feel more unpleasant affect.

Hypothesis 11. The relationship between the size of a discrepancy and the affect felt toward the previous goal discrepancy on the pleasant/unpleasant axis will be moderated by locus such that the relationship will be more negative when students attribute the cause of the discrepancy as being more internal than external.

Hypothesis 12. The relationship between the size of a discrepancy and the affect felt toward the previous goal discrepancy on the pleasant/unpleasant axis will be moderated by

stability such that the relationship will be more negative when students attribute the cause of the discrepancy as being more stable than unstable.

Hypothesis 13. The relationship between the size of a discrepancy and the affect felt toward the previous goal discrepancy on the pleasant/unpleasant axis will be moderated by controllability such that the relationship will be more negative when students attribute the cause of the discrepancy as being more controllable than uncontrollable.

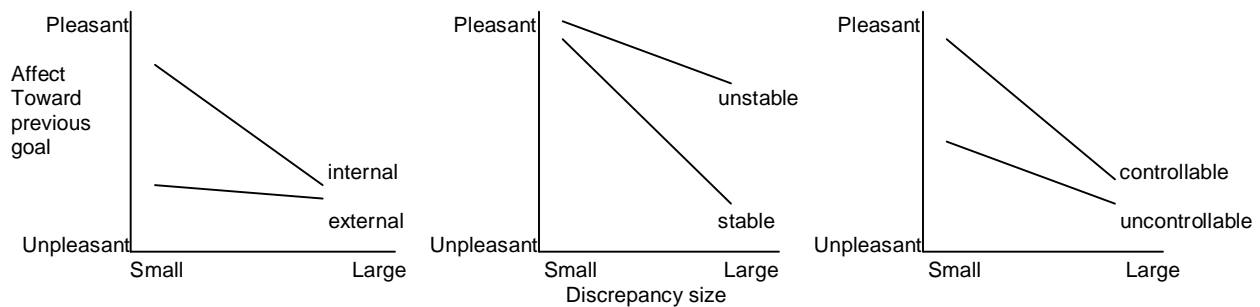


Figure 1.4: Proposed outcomes of hypotheses eleven, twelve and thirteen: the effects of attributions and discrepancy size on affect felt on the pleasant-unpleasant axis

On the dimension of activation, the larger a discrepancy is the more activated the individual's affect would be. Someone who does not meet their goals will feel activated to try and meet his goals in some way. Again, the attributions the individual makes as to the cause of his performance should affect the how activated or deactivated the affect felt toward the discrepancy is. If the individual believes that the cause is due to something about her, she is likely to feel more activated. If the individual believes the cause of her performance is due to something that is unstable, it may not stay the same, meaning that the individual will not feel as helpless and will be

more likely to feel more activated by a larger discrepancy. If the cause of the discrepancy is seen as something that is controllable, the individual will feel as if she can affect the outcome and will feel more active affect. These relationships are addressed in the following hypotheses (see Figure 1.5).

Hypothesis 14. The relationship between the size of a discrepancy and the affect felt toward the previous goal discrepancy on the activation/deactivation axis will be positive, such that when the size of the discrepancy is large the student will be more likely to feel more active affect.

Hypothesis 15. The relationship between the size of a discrepancy and the affect felt toward the previous goal discrepancy on the activation/deactivation axis will be more positive when students attribute the cause of the discrepancy as internal than external.

Hypothesis 16. The relationship between the size of a discrepancy and the affect felt toward the previous goal discrepancy on the activation/deactivation axis will be more positive when students attribute the cause of the discrepancy as being more unstable than stable.

Hypothesis 17. The relationship between the size of a discrepancy and the affect felt toward the previous goal discrepancy on the activation/deactivation axis will be more positive when students attribute the cause of the discrepancy as being more controllable than uncontrollable.

The next section describes the specific ways in which each hypothesis is tested. This will be followed by the results of the data analysis and a discussion of the implication of the findings.

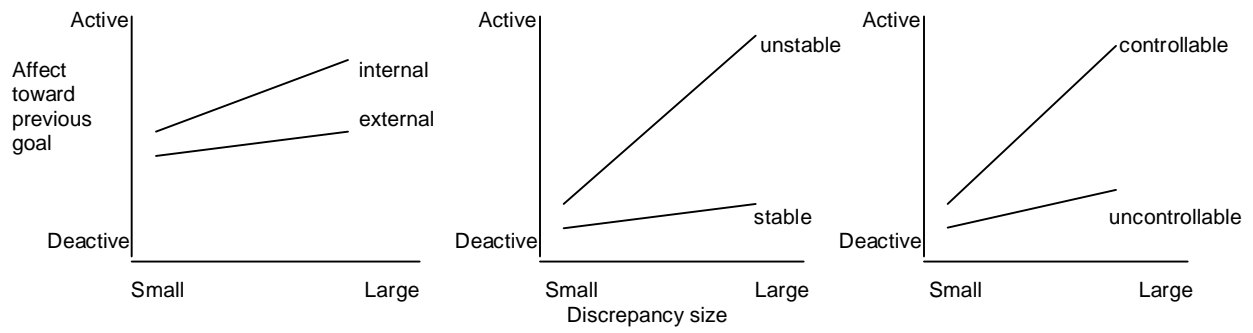


Figure 1.5: Proposed outcome of hypotheses sixteen, seventeen, and eighteen. The effects that attributions and discrepancy size have on the affect felt on the active-deactive axis

CHAPTER TWO

METHOD

Overview

Participants in this research were students in an undergraduate class who completed a series of surveys for extra credit. There were seven surveys during an eleven week time period. Survey #1 was given within the first ten days of class. Survey #2 was given during the ten days before the first exam. Surveys #3, #5 and #7 were given immediately after the two midterms and the final, before the students had received feedback on their test performance. Surveys #4 and #6 were given after the students had received their grade feedback for the previous exam. Survey #1 included trait affect to be used as a baseline for the state affect scores for the exam feedback. Survey #2 contained the measures of the students' goal for the course and the first exam, and their expectancy of reaching those goals. Surveys #3, #5 and #7 do not contain any questions relevant to this study. Surveys #4 and #6 contained measures of state affect toward the previous exam grade, causal attribution scales assessing the perceived causes of the students' grades, the new course grade goal, and their expectancy of reaching it, the grade goal for the next exam and their expectancy of reaching it, and the effort intention items. These measures are described below and are provided in the appendices.

Participants

The subjects for this study were 175 undergraduate students enrolled in an undergraduate psychology course on research methods at The Ohio State University during Autumn 2004 and Winter 2005. Students were encouraged to complete the surveys for extra credit. The surveys were one of two options to receive extra credit for the course. Responses across surveys were

matched by giving the students a unique 3-digit code, to maintain confidentiality and ensure extra credit was given to those students who choose to participate.

Measures

The surveys were made up of multiple scales and individual items used as measures for more than one research project. For that reason the surveys incorporated more scales than are described in the following section.

Goal Discrepancy

Goal discrepancy is the magnitude of the difference between an individual's goal and the grade feedback that she receives after each exam. Goal discrepancy was measured by having the participants report their self-set grade goal for the course and the exams and comparing them to the actual grades received for the course and on the exams. Because the hypotheses are phrased in terms of the size of the (negative) discrepancy, it was decided to create this measure by subtracting the self-set grade goal from the actual grade that each individual received. If the actual grade was lower than the self-set goal grade (which occurred in the vast majority of cases), there was a negative discrepancy. The question regarding the self-set grade goal for the class was asked before each exam in surveys #2, #4 and #6. The questions regarding each self-set exam grade goal was asked before each exam also in surveys 2, 4, and 6. Grades were coded on an 11-point scale, with 11=A, 10=A, through E=0.

Causal Attributions

Causal attributions are judgments that an individual may make as to the causes of their performance. The causal attribution measure used was McAuley, Duncan and Russell's (1992) Causal Dimension Scale II. The scale is a twelve-item bipolar measure, which measures the attributional dimensions of locus, stability, and both personal and external controllability on a 9-

point Likert scale. Each subject was asked to list the causes of his or her performance and then asked to rate those causes on the scale. An individual who scored low on an item was attributing his performance to something that is more external, more unstable, more personally uncontrollable, or more uncontrollable due to external forces. An individual who scored high on an item attributed her performance to something that was more internal, more stable, more personally controllable, or more controllable due to external forces. There were three items to measure each dimension. Each participant's performance attributions were measured after they receive their exam grade, in surveys #4 and #6.

One item was dropped from the scale and replaced by another that senior colleague, Robert Litchfield, developed. The item dropped was item number 34 (see appendix B: The Causal Dimension Scale II). This item was replaced by item number 29. As a result of the modification the scale reliability increased on the dimension of stability.

Expectancy

The measure of expectancy used was the student's expectancy of reaching his original goal for the first exam, of reaching a similar subsequent goal for the second exam, and of reaching a similar subsequent goal for the third exam that corresponds to the second exam goal. Included in surveys #2, #4, and #6 taken before each exam were eight items asking the subject to rate, by percentage, what they believe their likelihood is of receiving each letter grade, ranging from C minus to A. These expectancies were then matched with the student's self-reported grade goal. For example, if a student had a grade goal of a "B" the corresponding expectancy would be the percentage of the likelihood that she would get a "B". For the second and third exams the expectancy was measured by taking the first exam grade goal and the second exam grade goal,

respectively, and choosing the corresponding expectancy the student had recorded for that particular grade.

Affect

Core Affect was measured using the 20-item Job Affect Scale (JAS; Burke, Brief, George, Roberson & Webster, 1989). The original version of the JAS was used to measure state affect in survey #2 and was used as a baseline. The original version was then modified to measure state affect by asking students to think about their exam grade while they answer the affect questions. This scale is included in surveys #4, and #6, taken after the students received their exam feedback.

The items were combined first into four dimension and those were combined into two dimensions. The first four dimensions were negative activation (also called nervousness), low activation (also called relaxation), positive arousal (also called enthusiasm), and low arousal (also called fatigue). These four scales were then combined into two dimensions: pleasantness affect, and arousal affect.

Goal Change

Goal change was measured by subtracting the grade goal for the first exam from the second exam grade goal, and by subtracting the second exam grade goal from the third exam grade goal. In this way a downward goal movement is reflected by the magnitude of a negative number, upward goal movement is reflected the magnitude of a positive number, and no change was represented by 0. A negative goal change was the amount that the goal was changed downward, while a positive goal change was the amount that the goal was changed upward. Throughout the rest of this thesis, the change in grade goal will be referred to as *goal two minus goal one*, for clarity.

Behavior Change

Behavior change was measured using a scale of six items measuring effort intentions for the next exam, developed by senior colleagues Robert Litchfield and Robert Billings. The items were measured on a 7-point Likert scale, 1 corresponding to much less than average, and 7 corresponding to much more than average. Behavior change for exam #2 was indexed by combining the six items and then subtracting the effort intentions for exam 1 from the effort intentions for exam 2. The same was done for exam 3. The effort intention items were included in surveys #2, #4, and #6, before each exam.

Apparatus

This series of surveys was given through WebCT, an online course management tool. Subjects who did not have access to a computer or the Internet had the option of taking a paper version of the survey and submitting it in a sealed envelope.

CHAPTER THREE

RESULTS

The data was collected during the first two quarters of the 2004-2005 school year. Autumn quarter had a response rate of 89%. The total number of student who were enrolled at the end of the first week was 98 students. Some students dropped the class throughout the quarter and some students choose not to participate in the survey, so of the original 98, 86 students completed all seven surveys. One student's data was not included in the data analysis because key items in the surveys were not completed. The data was analyzed with an $n=85$.

Winter quarter data saw a slight increase in both enrollment and response rate. Out of 100 students enrolled in the class 91 completed all seven surveys yielding a response rate of 91%. Again one student was not included in the data analysis due to incomplete survey responses. This data was analyzed with an $n=90$. Accordingly the total usable sample was $n=175$.

Missing Data

If a sufficient number of the items pertaining to the operational hypothesis were left blank then these surveys were not used in data analysis. If just one item was left blank on a scaled measure, then the mean score of that particular item was used.

Descriptive Statistics

Table 3.1 shows the means, standard deviations of all the scaled variables used in the data analysis. This table shows the descriptive statistics for both the Exam 1 period and the Exam 2 period. In addition to the descriptive statistics it includes the scale reliabilities of the scaled items. Table 3.2 and 3.3 show the Pearson correlations for both the first and second exam periods.

	Exam 1			Exam 2		
	M	SD	α	M	SD	α
Discrepancy	2.97	2.58	n.a.	2.66	2.95	n.a.
Attributions						
Locus	6.25	1.93	.79	6.36	1.96	.83
Stability	4.69	2.24	.85	4.84	2.11	.84
Personal Controllability	6.71	2.20	.91	6.75	2.23	.94
Expectancy	58.04	23.47	n.a.	56.47	24.45	n.a.
Affect						
Pleasant Affect	3.07	.91	.38	3.17	.94	.45
Arousal Affect	2.72	.74	.69	2.65	.81	.74
Goal Change	.10	.99	n.a.	-.10	1.13	n.a.
Behavior Change	.36	1.00	.95	.17	.96	.96

Table 3.1 Means, Standard Deviations, and Reliabilities of Study Variables

	1 D	2 L	3 S	4 PC	5 E	6 PA	7 AA	8 GC	9 BC
1. Discrepancy	---								
2. Locus	-.31**	---							
3. Stability	-.45**	.13	---						
4. Personal Controllability	-.21**	.70**	.00	---					
5. Expectancy	-.39**	.22**	.14	.12	---				
6. Pleasant Affect	-.68**	.30**	.43**	.32**	.31**	---			
7. Arousal Affect	.62**	-.22**	-.40**	-.19*	-.38**	-.64**	---		
8. Goal Change	-.26**	.17*	.06	.14	.32**	.06	-.11	---	
9. Behavior Change	.24**	-.10	-.23**	-.08	.06	-.29**	.19*	-.01	---

Sample Size = 175. * $p < .05$, ** $p < .01$.

Table 3.2: Correlations Among Study Variables, Exam 1

	1	2	3	4	5	6	7	8	9
	D	L	S	PC	E	PA	AA	GC	BC
1. Discrepancy	---								
2. Locus	-.25**	---							
3. Stability	-.34**	.22**	---						
4. Personal Controllability	-.16*	.75**	.08	---					
6. Expectancy	-.52**	.17*	.16*	.14	---				
7. Pleasant Affect	-.76**	.26**	.34**	-.06	.43**	---			
8. Arousal Affect	.67**	-.32**	-.31**	.16*	-.38**	-.72**	---		
13. Goal Change	-.40**	.13	.03	-.05	.30**	.14	-.24**	---	
14. Behavior Change	.13	.04	-.06	.11	.04	-.28**	.21**	.23**	---

Sample Size = 175. * $p < .05$, ** $p < .01$.

Table 3.3: Correlations Among Study Variables, Exam 2

Tests of Hypothesis

Each of the tested hypotheses corresponds to a path on the proposed model (Figure 1.1). The entire model will be tested at a later time.

For hypotheses 1, 5, 9, 10, and 14 correlations were assessed for the significance of the relationship between the discrepancy and the subsequent cognitive and behavioral response (see Table 3.2 and 3.3). Moderated regression analyses were conducted to test the other hypotheses. Due to the number of hypothesis tested, only significant and marginally significant results are given.

The data shown in the figures was plotted by taking the equation for the interaction term and substituting the mean attribution score plus and minus one standard deviation. The resulting formula was then plotted. For instance, to plot the relationship between discrepancy and extent of behavior change moderated by the locus dimension shown in figure 3.4, the standard deviation (1.96) was added and subtracted from the mean locus score (6.36). The resulting scores were then multiplied by the unstandardized beta of the cross product term (-.026) to get the slopes of the lines. The mean minus the standard deviation represents the slope of the external locus line, and the mean plus the standard deviation represents the slope of the internal locus line. The Y-intercept equaled the constant for the last step in the moderated regression analysis (-.660). The resulting equations were $Y = -.114x + -.660$, as the equation for the external locus line, and $Y = -.216x + -.660$, as the equation for the internal locus line. This method was used to plot the lines for each figure.

Hypothesis 1. The relationship between the size of a negative discrepancy and the extent of behavior change will be positive.

The correlation between discrepancy and the extent of behavior change was only significant for the first exam period, $r = .24$, ($p < .01$). For the exam 2 period, there was no significant relationship, $r = .13$, ($p > .05$). There was support only for the first exam period for hypothesis 1.

Hypothesis 2. The relationship between the size of a discrepancy and the extent of behavior change will be moderated by locus such that the amount of behavior change will be larger when students attribute the cause of a discrepancy as internal rather than external.

At the first step, extent of behavior change was regressed on discrepancy. For the first exam period discrepancy was significantly related to extent of behavior change, explaining 6% of its variance ($\beta = -.11$, $F(1, 173) = 10.51$, $p < .01$). For the second exam period, discrepancy was not significantly related to extent of behavior change, ($\beta = .62$, $F(1, 173) = 2.93$, $p > .05$). At the next step locus was entered. Locus for the first exam period was not significantly related to extent of behavior change, ($\beta = -.16$, $F(2, 172) = .16$, $p > .05$). Locus for the second exam period was not significantly related to extent of behavior change, ($\beta = .22$, $F(2, 172) = 1.07$, $p > .05$). At the third step, the product of discrepancy and locus was entered as the interaction term in the regression equation. The interaction term was not significant for the first exam period ($\beta = .34$, $F(3, 171) = 1.99$, $p > .05$). The interaction term was significant for the second exam period ($\beta = -.49$, $F(3, 171) = 4.28$, $p < .05$). Hypothesis 2, which predicted that the relationship between discrepancy and extent of behavior change would be moderated by the extent of locus, was supported only in the second exam period. See table 3.5 and figure 3.2.

Step	Variable entered	B^a	β^a	t^a	ΔR^2 step
1	Exam 2 Discrepancy	.20	.62	2.58**	---
	Exam 2 Locus	.11	.22	2.16**	.01
2	Discrepancy X Locus	-.03	-.49	-2.07**	.02

^aValues are for the final equation, after all variables have been entered. B is the unstandardized coefficient. β is the standardized coefficient. t is the test statistic for the standardized coefficient. * $p < .10$, ** $p < .05$, *** $p < .01$. $n = 175$

Table 3.4: Regression Results: Moderating Effect of Locus on the Relationship between Discrepancy and Effort Change – Exam 2

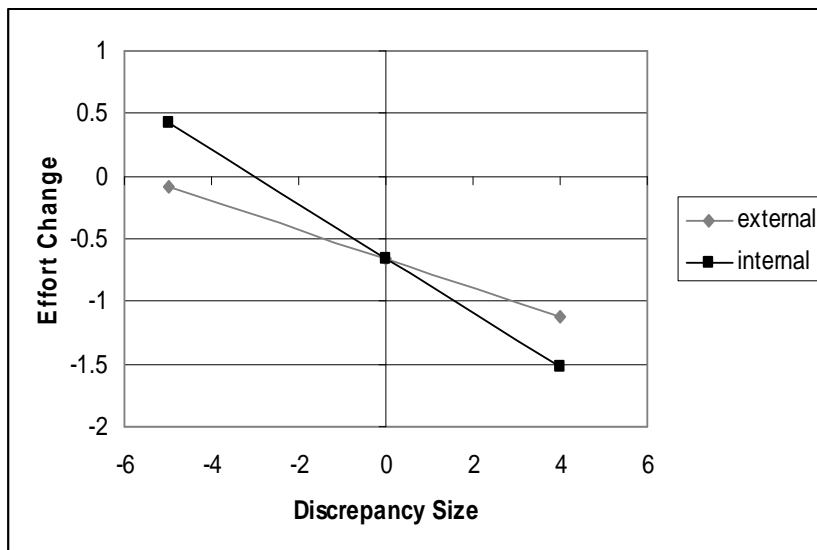


Figure 3.1: Regression Results: Moderating Effect of Locus on the Relationship between Discrepancy and Effort Change – Exam 2

Hypothesis 3. The relationship between the size of a discrepancy and the extent of behavior change will not be moderated by stability: the relationship will be equally positive when students attribute the cause of the discrepancy as being stable or unstable.

At the first step, extent of behavior change was regressed on discrepancy. For the first exam period discrepancy was significantly related to extent of behavior change, explaining 6% of its variance ($\beta = .15, F(1, 173) = 10.51, p < .01$). For the second exam period, discrepancy was not significantly related to extent of behavior change, ($\beta = .07, F(1, 173) = 2.93, p > .05$). At the next step stability was entered. Stability for the first exam period was not significantly related to extent of behavior change, ($\beta = -.16, F(2, 172) = 3.43, p > .05$). Stability for the second exam period was not significantly related to extent of behavior change, ($\beta = -.04, F(2, 172) = .06, p > .05$). At the third step, the product of discrepancy and stability was entered as the interaction term in the regression equation. The interaction term was not significant for the first exam period ($\beta = .02, F(3, 171) = .02, p > .05$), nor was it significant for the second exam period ($\beta = .06, F(3, 171) = .10, p > .05$). Hypothesis 3, which predicted that the relationship between discrepancy and extent of behavior change would be not be moderated by the extent of stability, was supported in both the first and second exam periods.

Hypothesis 4. The relationship between the size of a discrepancy and the extent of behavior change will be moderated by controllability such that the relationship will be more positive when students attribute the cause of the discrepancy as being more controllable than uncontrollable.

At the first step, extent of behavior change was regressed on discrepancy. For the first exam period discrepancy was significantly related to extent of behavior change, explaining 6% of its variance ($\beta = .31, F(1, 173) = 10.51, p < .01$). For the second exam period, discrepancy was

marginally significantly related to extent of behavior change, ($\beta = .51, F(1, 173) = 2.93, p < .10$). At the next step controllability was entered. Controllability for the first exam period was not significantly related to extent of behavior change, ($\beta = -.001, F(2, 172) = .22, p > .05$). Controllability for the second exam period was marginally significantly related to extent of behavior change, ($\beta = .25, F(2, 172) = 3.29, p < .10$). At the third step, the product of discrepancy and controllability was entered as the interaction term in the regression equation. The interaction term was not significant for the first exam period ($\beta = -.08, F(3, 171) = .11, p > .05$) but was marginally significant for the second exam period ($\beta = -.38, F(3, 171) = 2.80, p < .10$). Hypothesis 4, which predicted that the relationship between discrepancy and extent of behavior change would be moderated by the extent of controllability, was only marginally supported in the second exam period.

Step	Variable entered	B^a	β^a	t^a	ΔR^2 step
1	Exam 2 Discrepancy	.16	.51	2.25**	---
2	Exam 2 P. Controllability	.11	.25	2.48**	.02
3	Discrepancy X P.Controllability	-.02	-.38	-1.67*	.02

^aValues are for the final equation, after all variables have been entered. B is the unstandardized coefficient. β is the standardized coefficient. t is the test statistic for the standardized coefficient. * $p < .10$, ** $p < .05$, *** $p < .01$. $n = 175$

Table 3.5: Regression Results: Moderating Effect of Personal Controllability on the Relationship between Discrepancy and Effort Change – Exam 2

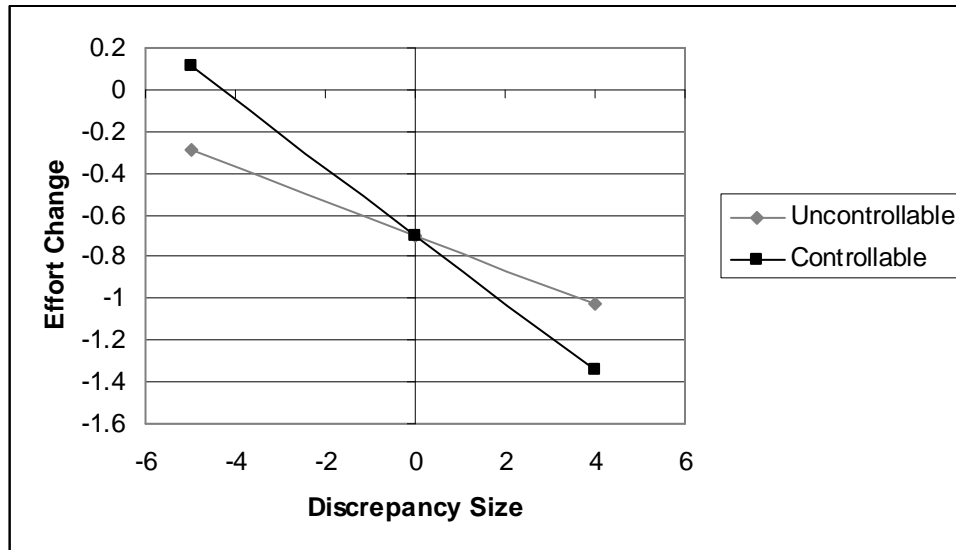


Figure 3.2: Regression Results: Moderating Effect of Personal Controllability on the Relationship between Discrepancy and Effort Change – Exam 2

Hypothesis 5. The relationship between the size of a goal discrepancy and the expectancy of attaining a similar subsequent goal will be negative such that when the size of the discrepancy is large the expectancy of attaining the next goal is low.

The correlation for discrepancy and expectancy of attaining similar subsequent goals was significant for both exam periods. For the exam 1 period, $r = -.39$ ($p < .01$). For the exam 2 period, the relationship was slightly higher, $r = -.52$, ($p < .01$). There was strong support for hypothesis five, that the relationship between the size of a goal discrepancy and expectancy of attaining a similar subsequent goal is negative.

Hypothesis 6. The negative relationship between the size of a goal discrepancy and the expectancy will not be moderated by locus so the relationship will be equally negative when students attribute the cause of a discrepancy as internal or external.

At the first step, expectancy was regressed on discrepancy. For the first exam period discrepancy was significantly related to expectancy, explaining 15% of its variance ($\beta = -4.3$, $F(1,$

170) = 29.35, $p < .01$). For the second exam period, discrepancy was significantly related to expectancy, explaining 27% of its variance ($\beta = -.05$, $F(1, 170) = 61.91$, $p < .01$). At the next step locus was entered. Locus for the first exam period was not significantly related to expectancy, ($\beta = .09$, $F(2, 169) = 2.61$, $p > .05$). Locus for the second exam period was not significantly related to expectancy, ($\beta = .17$, $F(2, 169) = .30$, $p > .05$). At the third step, the product of discrepancy and locus was entered as the interaction term in the regression equation. The interaction term was not significant for the first exam period ($\beta = .08$, $F(3, 168) = .13$, $p > .05$), but it was significant for the second exam period ($\beta = -.46$, $F(3, 168) = 5.22$, $p < .05$). Hypothesis 6, which predicted that the relationship between discrepancy and expectancy would not be moderated by the extent of locus, was supported only in the first exam period. See Table 3.4 and Figure 3.1.

Step	Variable entered	B^a	β^a	t^a	ΔR^2 step
1	Exam 2 Discrepancy	-.41	-.05	-.23	---
2	Exam 2 Locus	2.13	.17	1.91*	.00
3	Discrepancy X Locus	-.64	-.46	-2.29**	.02

^aValues are for the final equation, after all variables have been entered. B is the unstandardized coefficient. β is the standardized coefficient. t is the test statistic for the standardized coefficient.
 $*p < .10$, $**p < .05$, $***p < .01$. $n = 175$

Table 3.6: Regression Results: Moderating Effect of Locus on the Relationship between Discrepancy and Expectancy – Exam 2

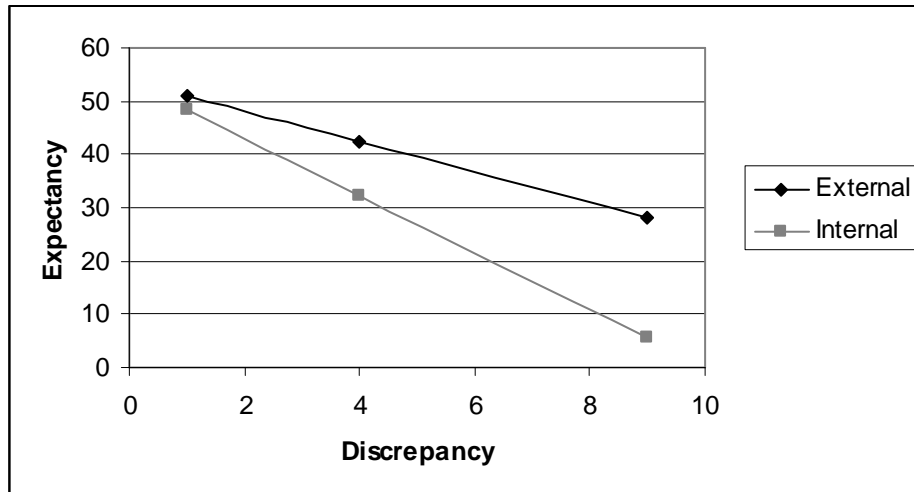


Figure 3.3: Regression Results: Moderating Effect of Locus on the Relationship between Discrepancy and Expectancy – Exam 2

Hypothesis 7. The negative relationship between the size of a goal discrepancy and the expectancy will be moderated by stability such that the relationship will be more negative when students attribute the cause of the discrepancy as being more stable than unstable.

At the first step, expectancy was regressed on discrepancy. For the first exam period discrepancy was significantly related to expectancy, explaining 15% of its variance ($\beta = -.19$, $F(1, 170) = 29.35$, $p < .01$). For the second exam period, discrepancy was significantly related to expectancy, explaining 28% of its variance ($\beta = -.38$, $F(1, 170) = 61.91$, $p < .01$). At the next step stability was entered. Stability for the first exam period was not significantly related to expectancy, ($\beta = .07$, $F(2, 169) = .12$, $p > .05$). Stability for the second exam period was not significantly related to expectancy, ($\beta = .03$, $F(2, 169) = .06$, $p > .05$). At the third step, the product of discrepancy and stability was entered as the interaction term in the regression equation. The interaction term was not significant for the first exam period ($\beta = -.21$, $F(3, 168) = 1.50$, $p > .05$), nor was it significant for the second exam period ($\beta = -.15$, $F(3, 168) = .83$, $p > .05$).

Hypothesis 7, which predicted that the relationship between discrepancy and expectancy would be moderated by the extent of stability, was not supported in either the first or second exam periods.

Hypothesis 8. The negative relationship between the size of a goal discrepancy and the expectancy will be moderated by controllability such that the relationship will be more negative when students attribute the cause of the discrepancy as being more uncontrollable than controllable.

At the first step, expectancy was regressed on discrepancy. For the first exam period discrepancy was significantly related to expectancy, explaining 15% of its variance ($\beta = -.43$, $F(1, 170) = 29.35$, $p < .01$). For the second exam period, discrepancy was significantly related to expectancy, explaining 27% of its variance ($\beta = -.27$, $F(1, 170) = 61.91$, $p < .01$). At the next step controllability was entered. Controllability for the first exam period was not significantly related to expectancy, ($\beta = .02$, $F(2, 169) = .37$, $p > .05$). Controllability for the second exam period was not significantly related to expectancy, ($\beta = .13$, $F(2, 169) = .65$, $p > .05$). At the third step, the product of discrepancy and controllability was entered as the interaction term in the regression equation. The interaction term was not significant for the first exam period ($\beta = .06$, $F(3, 168) = .06$, $p > .05$), nor was it significant for the second exam period ($\beta = -.25$, $F(3, 168) = 1.63$, $p > .05$). Hypothesis 8, which predicted that the relationship between discrepancy and expectancy would be moderated by the extent of controllability, was not supported in either the first or second exam periods.

Hypothesis 9. The relationship between the expectancy of success for the next goal if the goal remains unchanged and the extent that an individual changes her goal will be negative

The correlation for expectancy of attaining similar subsequent goals and goal change (goal two minus goal one), was significant for both exam periods. For the exam 1 period, $r = .32$ ($p < .01$,

$n = 175$). For the exam 2 period $r = .30$, ($p < .01$, $n = 175$). There was support for hypothesis 9, that the relationship between the expectancy of attaining a similar subsequent goal and goal change is positive. The greater the expectancy, the more the second goal is greater than the first goal.

Hypothesis 10. The relationship between the size of a negative discrepancy and the affect felt toward the previous goal discrepancy on the pleasant/unpleasant axis will be negative, such that when the size of the discrepancy is large the student will be more likely to feel more unpleasant affect.

The correlation between discrepancy and pleasantness of affect was significant for both exam periods. For the first exam period, $r = -.68$ ($p < .01$). For the exam 2 period, the relationship was slightly higher, $r = -.76$, ($p < .01$). There was support for hypothesis 10, that the relationship between the size of a goal discrepancy and pleasantness of affect is negative.

Hypothesis 11. The relationship between the size of a negative discrepancy and the affect felt toward the previous goal discrepancy on the pleasant/unpleasant axis will be moderated by locus such that the relationship will be more negative when students attribute the cause of the discrepancy as being more internal than external.

At the first step, pleasantness was regressed on discrepancy. For the first exam period discrepancy was significantly related to pleasantness, explaining 46% of its variance ($\beta = -.20$, $F(1, 173) = 148.04$, $p < .01$). For the second exam period, discrepancy was significantly related to pleasantness, explaining 57% of its variance ($\beta = -.48$, $F(1, 173) = 231.88$, $p < .01$). At the next step locus was entered. Locus for the first exam period was not significantly related to pleasantness, ($\beta = .27$, $F(2, 172) = 2.61$, $p > .05$). Locus for the second exam period was not significantly related to pleasantness, ($\beta = .15$, $F(2, 172) = 1.93$, $p > .05$). At the third step, the product of discrepancy and locus was entered as the interaction term in the regression equation.

The interaction term was significant for the first exam period ($\beta = -.46$, $F(3, 171) = 6.39$, $p < .05$), and was marginally significant for the second exam period ($\beta = -.26$, $F(3, 171) = 2.89$, $p < .10$). Hypothesis 11, which predicted that the relationship between discrepancy and pleasantness would be moderated by the extent of locus, was supported in the first exam period and marginally supported in the second exam period.

Step	Variable entered	B^a	β^a	t^a	ΔR^2 step
1	Exam 1 Discrepancy	-.07	-.20	-1.03	---
2	Exam 1 Locus	.12	.27	2.99***	.01
3	Discrepancy X Locus	-.03	-.46	-2.53**	.02

^aValues are for the final equation, after all variables have been entered. B is the unstandardized coefficient. β is the standardized coefficient. t is the test statistic for the standardized coefficient. * $p < .10$, ** $p < .05$, *** $p < .01$. $n = 175$

Table 3.7: Regression Results: Moderating Effect of Locus on the Relationship between Discrepancy and Pleasant Affect – Exam 1

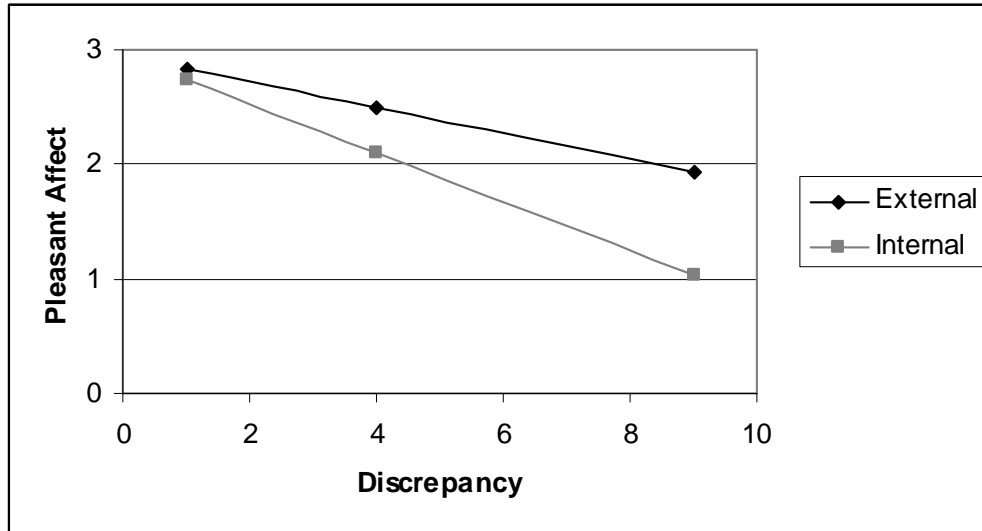


Figure 3.4: Regression Results: Moderating Effect of Locus on the Relationship between Discrepancy and Pleasant Affect – Exam 1

Step	Variable entered	B^a	β^a	t^a	ΔR^2 step
1	Exam 2 Discrepancy	-.15	-.48	-3.02***	---
2	Exam 2 Locus	.07	.15	2.17**	.01
3	Discrepancy X Locus	-.01	-.26	-1.69*	.01

^aValues are for the final equation, after all variables have been entered. B is the unstandardized coefficient. β is the standardized coefficient. t is the test statistic for the standardized coefficient.

* $p < .10$, ** $p < .05$, *** $p < .01$. $n = 175$

Table 3.8: Regression Results: Moderating Effect of Locus on the Relationship between Discrepancy and Pleasant Affect – Exam 2

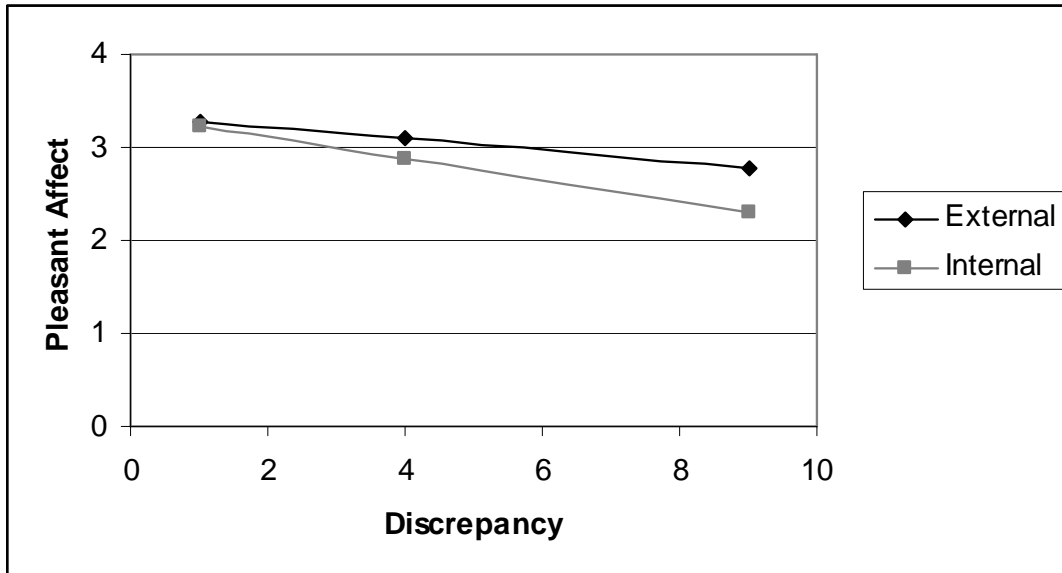


Table 3.5: Regression Results: Moderating Effect of Locus on the Relationship between Discrepancy and Pleasant Affect – Exam 2

Hypothesis 12. The relationship between the size of a negative discrepancy and the affect felt toward the previous goal discrepancy on the pleasant/unpleasant axis will be moderated by stability such that the relationship will be more negative when students attribute the cause of the discrepancy as being more stable than unstable.

At the first step, pleasantness was regressed on discrepancy. For the first exam period discrepancy was significantly related to pleasantness, explaining 46% of its variance ($\beta = -.41, F(1, 173) = 148.04, p < .01$). For the second exam period, discrepancy was significantly related to pleasantness, explaining 57% of its variance ($\beta = -.69, F(1, 173) = 231.88, p < .01$). At the next step stability was entered. Stability for the first exam period was significantly related to pleasantness, explaining an additional 2% of its variance ($\beta = .26, F(2, 172) = 6.97, p < .01$). Stability for the second exam period was not significantly related to pleasantness, ($\beta = .11, F(2, 172) = 3.47, p > .05$). At the third step, the product of discrepancy and stability was entered as the

interaction term in the regression equation. The interaction term was not significant for the first exam period ($\beta = -.19$, $F(3, 171) = 2.23$, $p > .05$), nor was it significant for the second exam period ($\beta = -.03$, $F(3, 171) = .08$, $p > .05$). Hypothesis 12, which predicted that the relationship between discrepancy and pleasantness would be moderated by the extent of stability, was not supported in either the first or second exam periods.

Hypothesis 13. The relationship between the size of a negative discrepancy and the affect felt toward the previous goal discrepancy on the pleasant/unpleasant axis will be moderated by controllability such that the relationship will be more negative when students attribute the cause of the discrepancy as being more controllable than uncontrollable.

At the first step, pleasantness was regressed on discrepancy. For the first exam period discrepancy was significantly related to pleasantness, explaining 46% of its variance ($\beta = -.49$, $F(1, 173) = 148.04$, $p < .01$). For the second exam period, discrepancy was significantly related to pleasantness, explaining 57% of its variance ($\beta = -.53$, $F(1, 173) = 231.88$, $p < .01$). At the next step controllability was entered. Controllability for the first exam period was significantly related to pleasantness, explaining an additional 4% of its variance ($\beta = .26$, $F(2, 172) = 11.84$, $p < .01$). Controllability for the second exam period was significantly related to pleasantness, explaining an additional 1% of its variance ($\beta = .17$, $F(2, 172) = 4.19$, $p < .05$). At the third step, the product of discrepancy and controllability was entered as the interaction term in the regression equation. The interaction term was not significant for the first exam period ($\beta = -.16$, $F(3, 171) = .77$, $p > .05$), nor was it significant for the second exam period ($\beta = -.23$, $F(3, 171) = 2.34$, $p > .05$). Hypothesis 13, which predicted that the relationship between discrepancy and pleasantness would be moderated by the extent of controllability, was not supported in either the first or second exam periods.

Hypothesis 14. The relationship between the size of a negative discrepancy and the affect felt toward the previous goal discrepancy on the activation/deactivation axis will be positive, such that when the size of the discrepancy is large the student will be more likely to feel more active affect.

The correlation between discrepancy and activation/arousal of affect was significant for both exam periods. For the first exam period, $r = .62$ ($p < .01$, $n = 175$). For the exam 2 period, the relationship was slightly higher, $r = .67$, ($p < .01$, $n = 175$). There was support for hypothesis 14, that the relationship between the size of a goal discrepancy and arousal is positive.

Hypothesis 15. The relationship between the size of a negative discrepancy and the affect felt toward the previous goal discrepancy on the activation/deactivation axis will be more positive when students attribute the cause of the discrepancy as internal than external.

At the first step, activation was regressed on discrepancy. For the first exam period discrepancy was significantly related to activation, explaining 39% of its variance ($\beta = .07$, $F(1, 173) = 109.59$, $p < .01$). For the second exam period, discrepancy was significantly related to activation, explaining 46% of its variance ($\beta = .52$, $F(1, 173) = 138.69$, $p < .01$). At the next step locus was entered. Locus for the first exam period was not significantly related to activation, ($\beta = -.24$, $F(2, 172) = .28$, $p > .05$). Locus for the second exam period was significantly related to activation, explaining an additional 2% of its variance ($\beta = -.19$, $F(2, 172) = 7.80$, $p < .01$). At the third step, the product of discrepancy and locus was entered as the interaction term in the regression equation. The interaction term was significant for the first exam period ($\beta = .54$, $F(3, 171) = 7.83$, $p < .01$), but not significant for the second exam period ($\beta = .11$, $F(3, 171) = .40$, $p > .05$). Hypothesis 15, which predicted that the relationship between discrepancy and activation would be moderated by the extent of locus, was supported only in the first exam period.

Step	Variable entered	B^a	β^a	t^a	ΔR^2 step
1	Exam 1 Discrepancy	.02	.07	.37	---
2	Exam 1 Locus	-.09	-.24	-2.48**	.00
3	Discrepancy X Locus	.03	.54	2.80***	.03

^aValues are for the final equation, after all variables have been entered. B is the unstandardized coefficient. β is the standardized coefficient. t is the test statistic for the standardized coefficient.
 $*p < .10$, $**p < .05$, $***p < .01$. $n = 175$

Table 3.9: Regression Results: Moderating Effect of Locus on the Relationship between Discrepancy and Arousal Affect – Exam 1

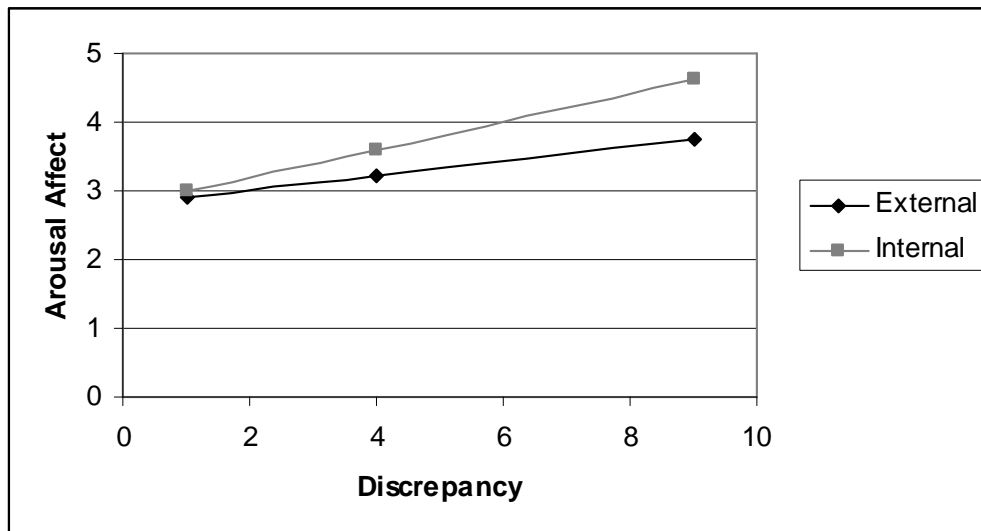


Figure 3.6: Regression Results: Moderating Effect of Locus on the Relationship between Discrepancy and Arousal Affect – Exam 1

Hypothesis 16. The relationship between the size of a negative discrepancy and the affect felt toward the previous goal discrepancy on the activation/deactivation axis will be more positive when students attribute the cause of the discrepancy as being more unstable than stable.

At the first step, activation was regressed on discrepancy. For the first exam period discrepancy was significantly related to activation, explaining 39% of its variance ($\beta = .40$, $F(1, 173) = 109.59$, $p < .01$). For the second exam period, discrepancy was significantly related to activation, explaining 46% of its variance ($\beta = .50$, $F(1, 173) = 138.69$, $p < .01$). At the next step stability was entered. Stability for the first exam period was significantly related to activation, explaining an additional 2% of its variance ($\beta = -.22$, $F(2, 172) = 5.09$, $p < .05$). Stability for the second exam period was not significantly related to activation, ($\beta = -.14$, $F(2, 172) = 2.35$, $p > .05$). At the third step, the product of discrepancy and stability was entered as the interaction term in the regression equation. The interaction term was not significant for the first exam period ($\beta = .16$, $F(3, 171) = 1.30$, $p > .05$), nor was it significant for the second exam period ($\beta = .14$, $F(3, 171) = 1.13$, $p > .05$). Hypothesis 17, which predicted that the relationship between discrepancy and activation would be moderated by the extent of stability, was not supported in either the first or second exam periods.

Hypothesis 17. The relationship between the size of a negative discrepancy and the affect felt toward the previous goal discrepancy on the activation/deactivation axis will be more positive when students attribute the cause of the discrepancy as being more controllable than uncontrollable.

At the first step, activation was regressed on discrepancy. For the first exam period discrepancy was significantly related to activation, explaining 39% of its variance ($\beta = .39$, $F(1, 173) = 109.59$, $p < .01$). For the second exam period, discrepancy was significantly related to

activation, explaining 45% of its variance ($\beta = .54, F(1, 173) = 138.69, p < .01$). At the next step controllability was entered. Controllability for the first exam period was not significantly related to activation, ($\beta = -.16, F(2, 172) = 1.24, p > .05$). Controllability for the second exam period was significantly related to activation, explaining an additional 2% of its variance ($\beta = -.19, F(2, 172) = 7.52, p < .01$). At the third step, the product of discrepancy and controllability was entered as the interaction term in the regression equation. The interaction term was not significant for the first exam period ($\beta = .23, F(3, 171) = 1.37, p > .05$), nor was it significant for the second exam period ($\beta = .11, F(3, 171) = .41, p > .05$). Hypothesis 17, which predicted that the relationship between discrepancy and activation would be moderated by the extent of controllability, was not supported in either the first or second exam periods.

CHAPTER FOUR

DISCUSSION

The purpose of this study was to find out what people do when they do not attain their goals. In addition, the antecedents of specific cognitive and behavioral changes were examined, and a model of cognitive and behavioral responses to goal discrepancies was constructed.

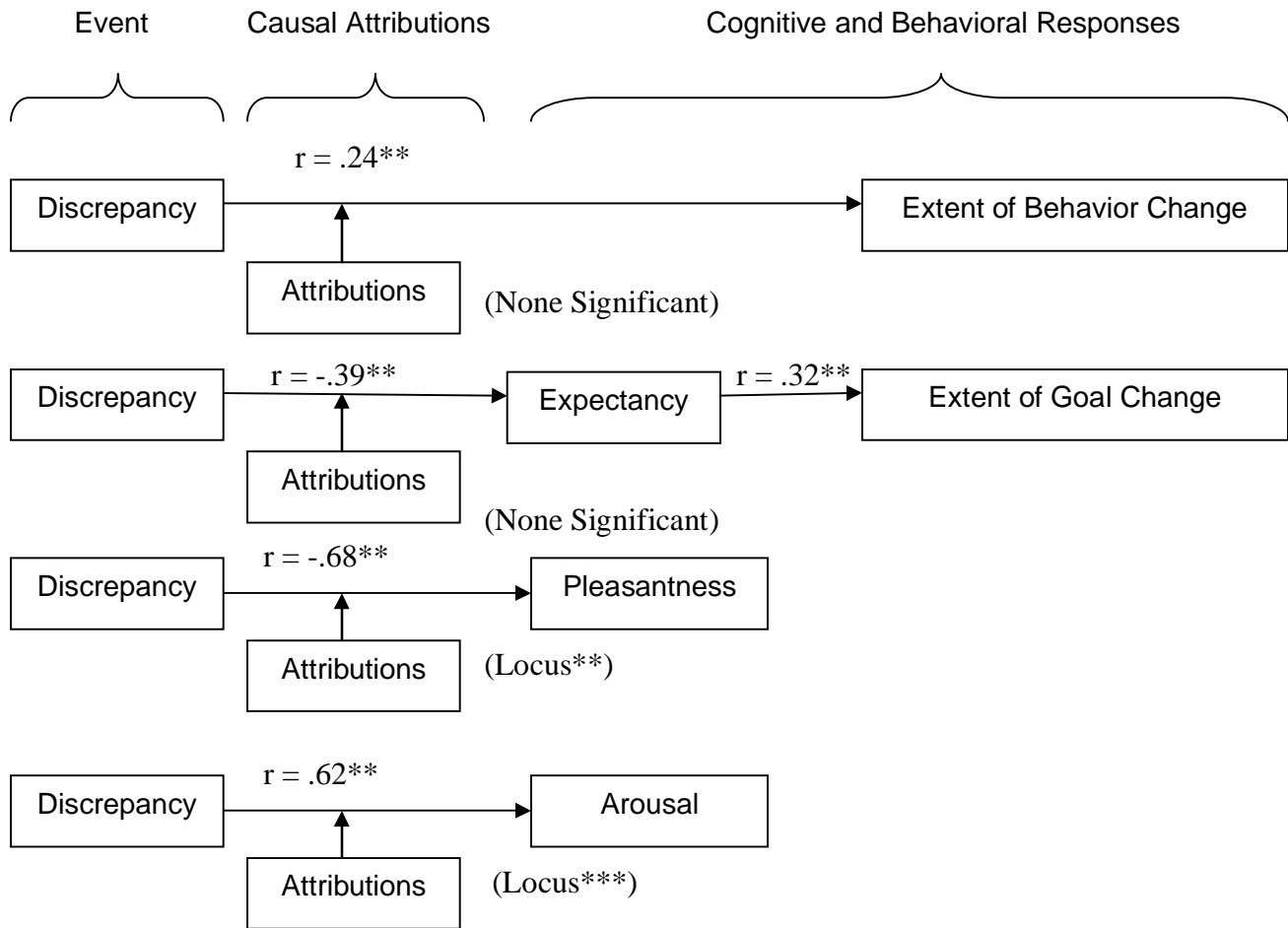
This section will provide a summary of the results of the current research, which are summarized in Figure 4.1 and 4.2. Next, the implications of the present research will be presented. Then the limitations of the study will be discussed. The final section deals with the implications of this thesis for future research.

Discrepancy and Behavioral Change

As can be seen in figure 4.1 and 4.2, the relationship between the magnitude of a discrepancy and the magnitude of behavior change was positive, as predicted, but only for the first exam period. As the size of the discrepancy became larger, the students changed their behavior more. Attributions only significantly moderated this relationship on the dimensions of locus, and the moderation was only marginally significant on the controllability dimension. The moderating relationships were found only for the second exam period. As hypothesized the stability attributions did not significantly moderate the relationship between the magnitude of a discrepancy and the magnitude of behavior change.

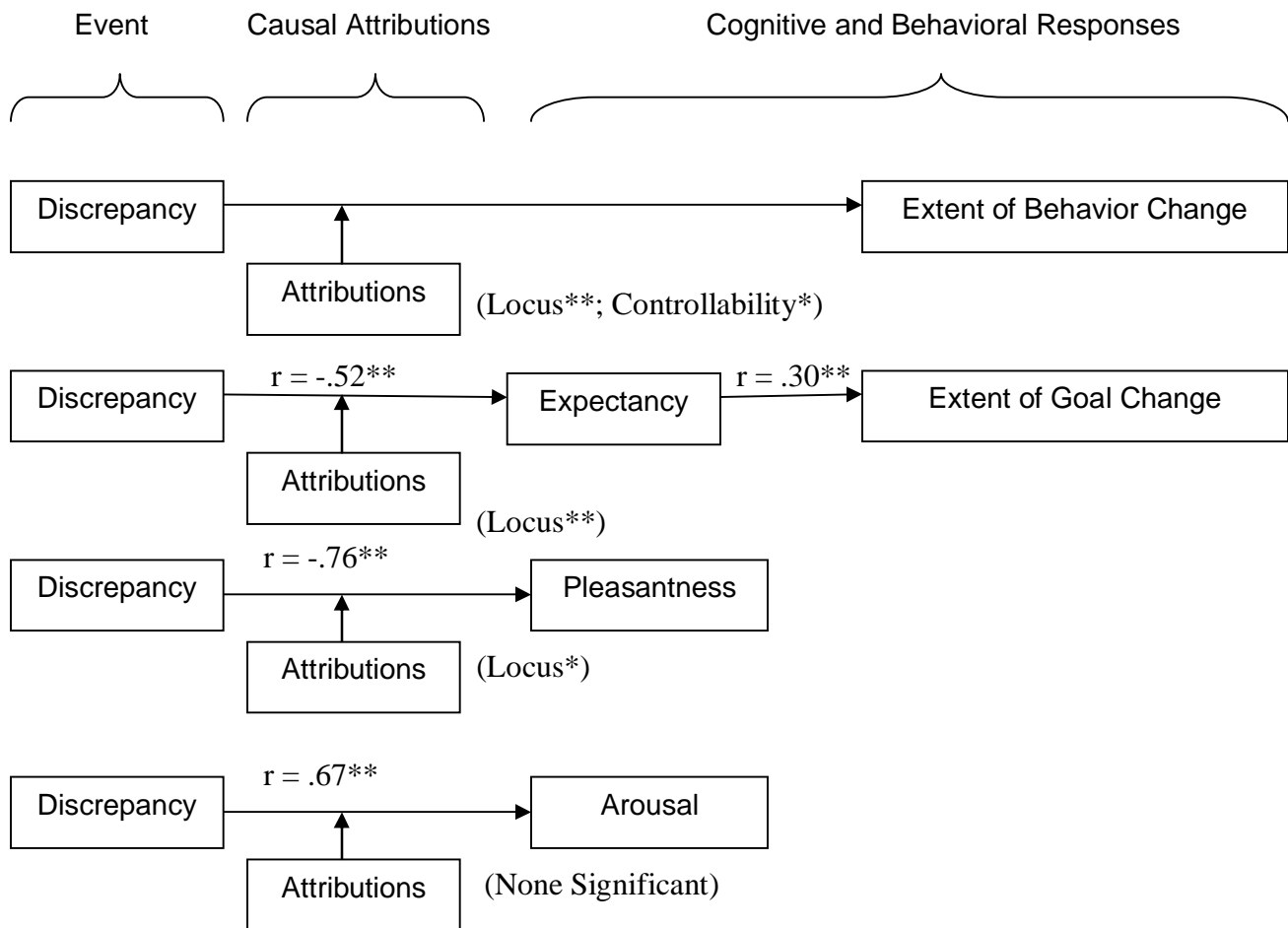
As is consistent with the current goal-striving research, the correlation between the magnitude of the discrepancy and the amount behavior was changed was stronger for the first exam period and not significant for the second exam period. This relationship shows the importance of temporal factors on goal-striving behavior. Earlier in the quarter, after the first

exam period, students tended to change their behavior more. The later in the school quarter an exam was given, the less students



* $p < .10$, ** $p < .05$, *** $p < .01$,

Figure 4.1: Results of Discrepancy Reactions Leading to Goal, Behavior or Affective Change, Exam 1.



* $p < .10$, ** $p < .05$, *** $p < .01$,

Figure 4.2: Results of Discrepancy Reactions Leading to Goal, Behavior or Affective Change, Exam 2.

changed their behavior. This could reflect the tendency of individuals who set goals to try to change their behavior to attain their goals before altering their actual goals.

Discrepancy, Expectancy and Goal Two Minus Goal One

As predicted and shown in figure 4.1 and 4.2, the relationship between goal discrepancy and the expectancy of reaching a similar subsequent goal was negative. Locus attributions moderated this relationship for the second exam period (but not the first) which was in opposition of the hypothesis that locus attributions would not moderate the relationship between the magnitude of a discrepancy and the expectancy of attaining a similar subsequent goal. When an individual attributed his performance to external causes, his expectancy did not fall as dramatically as when he attributed his performance to internal causes.

The results also show that expectancies were related to goal change for both exam periods. As hypothesized, the expectancy of attaining a similar subsequent goal and goal change were correlated. Those with high expectancies tended to increase their goals for the next exam, while those with lower expectancies tended to lower their goals.

Discrepancy and Pleasantness

The relationship between the size of a discrepancy and the pleasantness of the affect felt toward the previous performance was, as predicted, negative. As the goal discrepancy gets larger, the affect felt toward exam performance gets less pleasant. The attributional dimension of locus had a significant moderating effect on the relationship between discrepancy and the pleasantness of the affect felt toward the past performance. This was the only significant moderating effect that any of the attributional dimensions had on this relationship.

Discrepancy and Arousal

The relationship between the size of a discrepancy and arousal affect felt toward performance feedback was significantly positive, as hypothesized. Yet again only attributions on the locus dimension had a significant moderating effect on the relationship between discrepancy and arousal affect, and this relationship was only significant for the first exam period.

Discrepancy and Cognitive, Behavioral and Affective Responses

Although no predictions were made as to the relative strength of the relationship between discrepancies and the various reactions, it is interesting to note that the largest correlations involved affect. As can be seen in figure 4.1 and 4.2, discrepancy was found to be strongly correlated with pleasantness and arousal (r 's in the .60 to .70 range), but only moderately correlated with behavior change, expectancy and goal change (r 's in the .20 to .50 range). This pattern could be due to the possibility that affect may have a mediating relationship in the goal-striving process. The role of affect will be examined in subsequent analyzed research.

Locus and Controllability as Moderating Factors

Some interesting trends emerged from these results. One trend was that the attributional dimension of locus significantly moderated more relationships than any other dimension. The moderation affect occurred even when the locus dimension was not expected to moderate the relationship, such as the relationship between the goal discrepancy and expectancy of attaining similar subsequent goals. Attributions on the controllability dimension also had a few significant moderating effects.

Another possible explanation for the findings regarding attributions has to do with measurement issues. While the attributional scales had sufficiently high scale reliability, locus and controllability were still highly correlated for both the first ($r = .70, p < .01$) and second ($r = .75, p$

< .01) exam periods. This indicates that these two dimensions are confounded with one another, making it difficult to separate their effects. Another reason for the numerous significant results on the locus dimension may have been because the students used in the sample were psychology students. Many have learned about attributional biases in other classes. In many cases simply being aware of biases is enough to overcome them. Psychology students may have made more causal judgments on the dimension of locus because they are aware of these biases.

Locus could also be a more salient dimension than the others for college students who are, by this point in their academic careers, very familiar with taking tests. When the student does not do well on a test it she may think more about something that she did not do or something about the circumstances, both of which are interpretable as locus causality.

Limitations

There are some limitations in the method in which data was collected that could have affected the results and conclusions. The major limitation was the fact that it was not conducted as an experiment causal inferences are difficult to make. Because this was not done as an experiment causal inferences cannot be made regarding the data analysis.

Second, the participants who do very poorly will generally drop the class, therefore there may have been fewer participants with a negative discrepancy that completed the all seven surveys. In addition, some participants' data was not used simply because the individual did not complete all of the surveys. These may have been individuals who were doing very poorly in the class, and may have dropped it or did not complete a survey before the deadline. Since the main variable of interest is what individuals do when they do not reach their goals those who did not complete the survey may have been the individuals that would be experiencing the largest discrepancies.

It should also be noted that the results only generalize to specific goal-setting situations. The proposed model deals with a specific type of goal situation in which the goal periods are structured, and the cognitive and behavioral responses that one has to choose between are well learned. This model would not work well for goal-striving settings in which individuals are not familiar with the task, and in which the feedback or goals are not well defined. The subjects of this research are students in college and most if not all of them have been students for most of their lives, therefore they are quite familiar with how the classroom setting works and are able to base their judgments on prior experience.

Implications

The main contribution of the present study is the model of reactions to goal discrepancies. The role of affect in the goal-striving process and the role of attributions as a moderator of cognitive and behavioral reactions to goal discrepancies in the present literature have been limited. While no path analysis was done to support the model, enough of the relationships were significant to support more inquiry into these areas of study.

The role of attributions as a mediator of discrepancy and cognitive and behavioral change is still unclear, as there was no mediational analysis conducted. Of the literature that addresses attributions in goal-striving, some of the studies use attributions as a mediator while other use them a moderator. The relationship of attributions as a moderator or a mediator to cognitive and behavioral outcomes should be further examined for more conclusive results. Five out of twelve of the hypothesized moderated relationships found a significant moderation in one, or both exam periods. In addition, on most of hypothesized paths, attributions had a moderating effect on at least one attributional dimension. This many significant moderated relationships shows an important trend of the importance of attributional dimensions as moderators in the goal-striving

process. By showing that moderation increases the predictability of a discrepancy in determining further cognitive and behavioral changes, researchers could develop an attributional training course to help individuals who consistently feel they have to lower their goals.

Future Direction in Goal-Striving Research

The model of cognitive and behavioral reactions to negative goal discrepancies proposed in Figure 1.1 should be analyzed using structural equation modeling. Causal modeling would aid in understanding key linkages in the model, such as the relationship between affective reactions and goal change. In addition, this research was inconclusive on the moderating role of attributions. In many of the moderated relationships, there was only a significant affect in one of the exam periods. More data should be collected to discover whether or not there are more significant moderated relationships found with an increased sample size.. This will be done in future analysis, once the data for the whole 2004/2005 school year is collected.

In order to assess causality, these relationships should be examined in an experimental design. Perhaps by examining each path separately, the role of attributions could be accurately placed in the role of mediator or moderator. Also these hypotheses should be examined in other goal-striving areas, such as in sales sports, or politics for reasons of generality.

Conclusion

In conclusion, the answer to the research questions, “what do people do when they are faced with a negative goal discrepancy?”, and “what affects the decisions made to change a goal or behavior?” is still not entirely clear. Attributions do tend to have a moderating effect on the relationship between discrepancy and the cognitive and behavioral reactions to it. In addition it is clear that affect does have a place in the discrepancy reduction process, though its place is not clear. Future research should attempt to address these questions in more depth.

References

- Byrd, T. G., & Donovan, J. J. (2004, April). Goal revision in a simultaneous multiple-goal environment. Paper presented at the Annual Conference of the Society for Industrial/Organizational Psychology, Chicago, IL.
- Burke, M. J., Brief, A. P., George, J. M., Roberson, L., Webster, J. (1989). Measuring affect at work: Confirmatory analyses of competing mood structures with conceptual linkage to cortical regulatory systems. Journal of Personality & Social Psychology, 57, 1091-1102
- Campion, M. A., & Lord, R. G. (1982). A control systems conceptualization of the goal setting and changing process. Organizational Behavior & Human Decision Processes, 30, 256-287.
- Carver, C. S., & Scheier, M. F. (1981). Attention and self-regulation: A control theory approach to human behavior. New York: Springer-Verlag.
- Donovan, J. J., Dwight, S. A., & Schneider, D. (2004 a). Changes in effortful performance in response to goal-performance discrepancies. Paper presented at the Annual Conference of the Society for Industrial/Organizational Psychology, Chicago, IL.
- Donovan, J. J., Dwight, S. A., & Schneider, D. (2004 b). Goal revision processes in an organizational context. Paper presented at the Annual Conference of the Society for Industrial/Organizational Psychology, Chicago, IL.

- Donovan, J. J., & Williams, K. J. (2003). Missing the mark: Effects of time and causal attributions on goal revision in response to goal-performance discrepancies. Journal of Applied Psychology, 88, 379-390.
- Klein, H. J. (1989). An integrated control theory model of work motivation. Academy of Management Review, 14, 150-172
- McAuley, E., Duncan, T. E., Russell, D. W. (1992). Measuring causal attributions: The revised Causal Dimension Scale (CDSII). Personality & Social Psychology Bulletin, 18, 566-573
- Russell, J. A., Barrett, L. F. (1999). Core affect, prototypical emotional episodes, and other things called emotion: Dissecting the elephant. Journal of Personality & Social Psychology, 76,805-819
- Russell , J. A. (2003). Core affect and the psychological construction of emotion. Psychological Review, 110, 145-172
- Thomas, K. M., & Mathieu, J. E. (1994). Role of causal attributions in dynamic self-regulation and goal processes. Journal of Applied Psychology, 79, 812-818.
- Weiner, B. (1985). An attributional theory of motivation and emotion. Psychological Review, 92, 548-573.

Weiner, B. (1986). An attributional theory of motivation and emotion. New York: Springer-Verlag.

Williams, K. J., Donovan, J. J., & Dodge, T. L. (2000). Self-regulation of performance: Goal establishment and goal revision processes in athletes. Human Performance, 13, 159-180.

APPENDIX A: SURVEY INTRODUCTION

Question 1

This is the first survey offered for extra credit. You must complete this survey by Friday, January 21 at 4:30 pm. Return the completed survey to Angela Mercer, 232 Lazenby Hall. If she is not in her office, you may slip it under her door.

Your responses are completely confidential. The course instructor and TA will not see any individual responses, and will see summary data only after the quarter is over. The ID number that has been emailed to you is necessary because the researchers need to be able to link an individual's responses to the various surveys. The instructor and TA do not have access to the list of student names and ID numbers.

Enter the 3-digit identification number that was emailed to you through the WebCT mail system, followed by the first letter of your last name (e.g., 999B). If you are not sure of your 3-digit number, please retrieve this email before completing this survey. (See the instructions in the announcement posted Sunday, January 9, if you are not sure how to do this.)

3-digit ID number, followed by first letter of your last name: _____

APPENDIX B: EXAM GRADE GOAL

Question 16

There are two mid-terms and a final in Psychology 300. Now think about the first mid-term exam. Indicate your goal for the first exam by circling one of the responses below.

A

A minus

B plus

B

B minus

C plus

C

C minus

APPENDIX C: EXPECTANCY OF REACHING GRADE GOAL

Question 22

We are also interested in how confident you are of attaining various possible grades on the first mid-term exam. For each of the following grades, enter the number between 0 and 100 that best describes the probability of obtaining AT LEAST that grade. Use the anchors below to help you determine your answers. You may select any number between 0 and 100.

Note: It will not make sense if you believe that you have 25 in 100 chance of getting at least a C on the exam, but then go on and rate your chance of getting at least a B to be 30 in 100. That is, the numbers should go down (or at least not increase) from item 1 to item 8.

0 = No chance at all

25 = A slight chance

50 = A 50/50 chance

75 = A good chance

100 = Completely certain

What are the chances in 100 that you will receive a C minus or better on the first exam?

Answer _____

Question 23

0 = No chance at all

25 = A slight chance

50 = A 50/50 chance

75 = A good chance

100 = Completely certain

What are the chances in 100 that you will receive a C or better on the first exam? Note: Your answer to this question should be the same or less than your answer to the previous question.

Answer _____

Question 24

0 = No chance at all

25 = A slight chance

50 = A 50/50 chance

75 = A good chance

100 = Completely certain

What are the chances in 100 that you will receive a C plus or better on the first exam? Note: Your answer to this question should be the same or less than your answer to the previous question.

Answer _____

Question 25

0 = No chance at all

25 = A slight chance

50 = A 50/50 chance

75 = A good chance

100 = Completely certain

What are the chances in 100 that you will receive a B minus or better on the first exam? Note: Your answer to this question should be the same or less than your answer to the previous question.

Answer _____

Question 26

0 = No chance at all

25 = A slight chance

50 = A 50/50 chance

75 = A good chance

100 = Completely certain

What are the chances in 100 that you will receive a B or better on the first exam? Note: Your answer to this question should be the same or less than your answer to the previous question.

Answer _____

Question 27

0 = No chance at all

25 = A slight chance

50 = A 50/50 chance

75 = A good chance

100 = Completely certain

What are the chances in 100 that you will receive a B plus or better on the first exam? Note: Your answer to this question should be the same or less than your answer to the previous question.

Answer _____

Question 28

0 = No chance at all

25 = A slight chance

50 = A 50/50 chance

75 = A good chance

100 = Completely certain

What are the chances in 100 that you will receive an A minus or better on the first exam? Note: Your answer to this question should be the same or less than your answer to the previous question.

Answer _____

Question 29

0 = No chance at all

25 = A slight chance

50 = A 50/50 chance

75 = A good chance

100 = Completely certain

What are the chances in 100 that you will receive an A on the first exam? Note: Your answer to this question should be the same or less than your answer to the previous question.

Answer _____

APPENDIX D: EFFORT INTENTIONS

Question 30

The statements that follow refer to the up-coming first mid-term exam in this class. Indicate your response by circling one of the options.

Compared to your other exams, how much time do you plan to put into this exam?

1	2	3	4	5	6	7
much less than average	less than average	slightly less than average	about average	slightly more than average	more than average	much more than average

Question 31

Compared to other exams, how much intensity of effort do you plan to put into studying for this exam?

1	2	3	4	5	6	7
much less than average	less than average	slightly less than average	about average	slightly more than average	more than average	much more than average

Question 32

Compared to other exams, how much overall effort do you plan to put into studying for this exam?

1	2	3	4	5	6	7
much less than average	less than average	slightly less than average	about average	slightly more than average	more than average	much more than average

Question 33

I plan on putting a lot of time into preparing for this exam.

1	2	3	4	5	6	7
strongly disagree	disagree	somewhat disagree	neither agree nor disagree	somewhat agree	agree	strongly agree

Question 34

I intend to work very intensively as I prepare for this exam.

1	2	3	4	5	6	7
strongly disagree	disagree	somewhat disagree	neither agree nor disagree	somewhat agree	agree	strongly agree

Question 35

I plan to put a lot of effort into preparing for this exam.

1	2	3	4	5	6	7
strongly disagree	disagree	somewhat disagree	neither agree nor disagree	somewhat agree	agree	strongly agree

APPENDIX E: THE JOB AFFECT SCALE

Question 2

Think about your performance on the first mid-term exam in this course. If you are not sure of your grade on that test, please look up that grade before continuing with this survey. The number of points you received is available under “grades” on the home page, and the letter grade equivalents are as follows:

279 - 300 = A

270 - 278 = A minus

261 - 269 = B plus

249 - 260 = B

240 - 248 = B minus

231 - 239 = C plus

219 - 230 = C

210 - 218 = C minus

201 - 209 = D plus

180 - 200 = D

0 - 179 = E

Think about your grade on the first Psychology 300 exam and describe how you feel.

Thinking about my exam grade, I feel active.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 3

Thinking about my exam grade, I feel calm.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 4

Thinking about my exam grade, I feel distressed.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 5

Thinking about my exam grade, I feel sleepy.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 6

Thinking about my exam grade, I feel strong.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 7

Thinking about my exam grade, I feel excited.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 8

Thinking about my exam grade, I feel scornful.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 9

Thinking about my exam grade, I feel hostile.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 10

Thinking about my exam grade, I feel enthusiastic.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 11

Thinking about my exam grade, I feel dull.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 12

Thinking about my exam grade, I feel fearful.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 13

Thinking about my exam grade, I feel relaxed.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 14

Thinking about my exam grade, I feel peppy.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 15

Thinking about my exam grade, I feel at rest.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 16

Thinking about my exam grade, I feel nervous.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 17

Thinking about my exam grade, I feel drowsy.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 18

Thinking about my exam grade, I feel elated.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 19

Thinking about my exam grade, I feel placid.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 20

Thinking about my exam grade, I feel jittery.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 21

Thinking about my exam grade, I feel sluggish.

1	2	3	4	5
slightly or not at all	a little	moderately	quite a bit	very much

Question 29

Is this cause (causes) something that will not continue over time (1) or will continue over time (9)?

1	2	3	4	5	6	7	8	9
Will not continue over time								Will continue over time

Question 30

Is this cause (causes) something that is variable over time (1) or stable over time (9)?

1	2	3	4	5	6	7	8	9
Variable over time								Stable over time

Question 31

Is this cause (causes) something that is not under the power of other people (1) or is under the power of other people (9)?

1	2	3	4	5	6	7	8	9
Not under the power of other people								Under the power of other people

Question 32

Is this cause (causes) something about others (1) or something about you (9)?

1	2	3	4	5	6	7	8	9
Something about others								Something about you

Question 33

Is this cause (causes) something over which you have no power (1) or something over which you have power (9)?

1	2	3	4	5	6	7	8	9
Over which you have no power								Over which you have power

Question 34

Is this cause (causes) something that is changeable (1) or something that is unchangeable (9)?

1	2	3	4	5	6	7	8	9
Changeable								Unchangeable

Question 35

Is this cause (causes) something that other people cannot regulate (1) or something that other people can regulate (9)?

1	2	3	4	5	6	7	8	9
Other people cannot regulate								Other people can regulate