

LAKEHEAD UNIVERSITY

THE EFFECTS OF PERCEIVED COMPETENCE AND GOAL ORIENTATION ON
TASK PERSISTENCE AND AFFECT IN PHYSICAL ACTIVITY: A TEST
OF DWECK AND LEGGETT'S MOTIVATION THEORY.

BY

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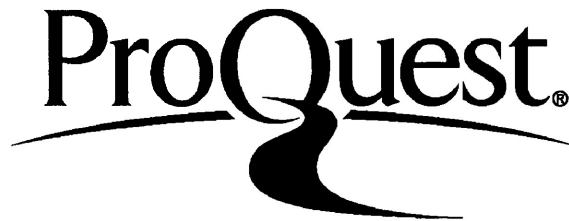
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DEDICATION

**TO THOMAS AND EILEEN WALSH
FOR THEIR SUPPORT AND ENCOURAGEMENT
OVER A LIFETIME**

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Abstract

This study tested Dweck and Leggett's (1988) social cognitive model of motivation in the physical domain. It investigated the effects of perceived competence (PC) and goal orientation (GO) on affective and behavioral patterns in a motor skill activity. The model proposes that under failure conditions subjects with a low perceived competence and an outcome/win goal will have high negative affect, and will persist less than the other three groups, who will continue to display a mastery pattern. The sample 61 university students majoring in physical education. In phase 1 participants were individually tested on a throwing and balancing task and completed a "Task Specific Perceived Competence" Scale. The Scale was administered several days later to determine test-retest reliability ($r=.79$). The two scores were averaged and the participants were separated into high or low perceived competence groups dependent on the score obtained. Participants were then randomly assigned into two GO groups differentiated by given instructions. In phase 2 subjects experienced four successful trials and four failure trials on the task. They were told that they could have up to five additional rehearsals in between each trial. A Positive Affect Negative Affect schedule (PANAS, Watson, 1988) was administered after trial four and trial eight. The data was analyzed by a 2 (PC) by 2 (GO) by 2 (gender) by 2 (success/failure condition) with repeated measures on the last factor. There was a significant conditions effect for negative affect, $F(1,53) = 17.68, p < .001$. Negative affect increased for all groups from success to failure. There was no support for an interaction between PC and GO. The analysis for persistence revealed a GO by Gender by Condition interaction, $F(1,53) = 4.50, p < .05$. Post-hoc analysis using a Scheffé test revealed that in success there was no difference between groups. In failure one group (females with an outcome/win goal) was different from the other three. Across conditions three groups changed significantly. The only group that failed to change were females with an outcome/win goal orientation. The findings do not support the hypothesis of an interaction between PC and GO

in failure conditions. The results have implications for goal setting and instructional methods used to motivate students and athletes.

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Chapter 1

INTRODUCTION

Purpose of study

The purpose of this study will be to test Dweck and Leggett's (1988) social cognitive model of motivation in the physical domain. The researcher will investigate the effect of perceived competence and goal orientation on affective and behavioral patterns in a motor skill activity.

Significance

Motivation is an important component of sport. It will determine why people select certain activities, persist in them, and carry them out with intensity (Carron, 1984). The coach and athlete can use guidelines to help develop, maintain and enhance motivation. As much as the coach and athlete would like simple practical answers to these questions, the constructs that determine a person's level of motivation are complex and still in the early stage of clarification.

Perceived competence and goal orientation are two constructs that have been recognized as being important predictors of motivation (Dweck & Leggett, 1988; Harter, 1978, 1981; Nicholls 1984). More importantly, it has been argued that the combination of these two constructs will differentially influence an individual's level of motivation (Dweck & Leggett, 1988, Nicholls, 1984). Perceived competence is determined by the individual's judgement of his or her ability in a specific domain. For example, a national calibre basketball player may have a high perceived competence for foul shooting because of high success rates on previous occasions. This same athlete, however may have a low perceived competence if asked to swim a 400 metre Fly in a record time because he believes he lacks swimming ability.

The second construct is goal orientation, which refers to the individual's interpretation of the achievement situation. There are two types of goals, (a) mastery, in which the individual is concerned with developing proficiency in the task and, (b) outcome/win orientation goals, in which the emphasis is on demonstrating high ability (or avoiding the demonstration of low ability) and receiving favorable judgement of ability compared to others. The goal the individual pursues creates the framework from which he/she interprets and reacts to a specific event (Elloitt & Dweck, 1988).

In the sporting arena, both perceived competence and goal orientation have obvious implications. Dweck and Leggett's (1988) motivational model incorporated these constructs and has received support in the academic setting (e.g. Dweck & Leggett, 1988; Nicholls, 1978, 1984; Elloitt & Dweck, 1988). To date however, no research has been undertaken to determine whether the model can be generalized to sport. It would be expected that this model would have greater implications in the sporting environment because movement behaviors, and the resulting success and failure, are much more observable and open to social evaluation compared to classroom performance. In both training and competition, there is continual assessment amongst peers and significant others. There is also the continual fixation with scoring or winning as an indication of success and competence. If Dweck and Leggett's (1988) motivational model can be generalized to sport, it will provide a framework that coaches and teachers could use for enhancing motivation both on and off the field.

The major model to be evaluated in this thesis was proposed by Dweck and Leggett (1988) who hypothesized that an individual's level of perceived competence and type of goal orientation interact during failure situations to determine behavioral, cognitive, and affective patterns. The adoption of an outcome/win goal orientation by an individual with low perceived competence will often produce negative cognition concerning ability. He/she will also experience negative affect (distress) and suffer a deterioration in performance. When an individual in a failure condition has either high perceived competence, or low perceived

competence and a mastery goal orientation, he/she will try to master the task, generate problem solving cognition, be persistent, and experience positive affect. Dweck and Leggett (1988) argued that in successful situations all four groups will display similar affect and persistence at the task.

Nicholls (1978, 1984) has also developed a motivational theory, in which he proposed that people either try to maximize the demonstration of high ability, or minimize the demonstration of low ability. His theory is similar to Dweck and Leggett's (1988) model in that he also alludes to the interaction between perceived ability and achievement goals under success and failure conditions. He further extended his theory to include the effect of perceived ability and achievement goals on task choice. He hypothesized that individuals who are task-involved will choose a task at the intermediate level. It is argued that the intermediate level is where one's highest level of competence might be demonstrated.

Nicholls (1984) argued that individuals who are ego-involved can be classified into two categories. First, those with high perceived ability prefer tasks at or above moderately difficult levels, depending on what he/she believes will best demonstrate their highest ability. Second, individuals with low perceived ability will choose the extreme difficulty levels, selecting either very easy tasks or extremely difficult tasks. Individuals who are certain that their ability is not high, and lack commitment to demonstrating high ability, choose tasks with a high probability of success. Those who are committed to demonstrating high ability choose tasks where the probability of "anyone" succeeding is extremely low. Choices of very easy or very difficult tasks enable the individual to avoid demonstrating low ability.

The purpose of this study will be two fold. First, it will attempt to test Dweck and Leggett's (1988) model in the physical domain. The second part of the study will investigate Nicholls's (1984) hypothesis concerning task choice to determine its authenticity in the physical domain.

Delimitations

The subjects in this study were sixty one undergraduate students, ranging in age from 19 - 25yrs, who are majoring in Physical Education at Lakehead University.

The variables selected to be tested were positive affect and negative affect, persistence, and task choice.

The period of testing was February - March 1989.

A level of .05 was established as the level of significance for statistical testing.

Limitations

It was assumed there would be no communication between subjects with reference to the procedures of the experiment.

It was assumed that subjects maintained the same goal orientation throughout the experiment.

Definition of terms

Goal orientation - The individuals interpretation of the achievement situation determines whether they try to master a task, or determine their present level of ability through comparison with significant others.

Mastery goal orientation - Individuals are concerned with increasing their competence by mastering tasks.

Outcome/win goal orientation - Individuals are concerned with gaining favorable judgement of their competence by significant others. They seek to validate or document their ability and not discredit it.

Perceived competence - An individual's judgement of his or her degree of competence for a specific task.

Low perceived competence - Low perceived competence was determined by the pretest perceived competence questionnaire. Those scoring below the medium split were classified as having low perceived competence.

High perceived competence - High perceived competence was determined by the pretest perceived competence questionnaire. Those scoring above the medium split were classified as having high perceived competence.

Persistence - Directed effort extended over time, in an attempt to master a task. Persistence was determined by the amount of optional trials the subjects choose to use.

Affect - Positive and negative moods experienced during activity. The PANAS scale was used to determine positive and negative affect.

Task choice - There was one task with three degrees of difficulty, extremely difficult, moderately difficult, and extremely easy. Subjects were given the opportunity to choose the difficulty level of the task they wanted to pursue.

Chapter 2

REVIEW OF THE LITERATURE

Understanding what motivates individuals to perform in achievement situations has become a topic of concern for teachers, coaches, and researchers (Feltz & Petlichkoff, 1983; Iso-Ahola & Roberts, 1977; Klint & Weiss, 1987). Motivation determines the direction, intensity, and persistence of behaviors. The direction of behaviors signifies whether an individual approaches or avoids a particular activity. Intensity relates to the effort exerted to accomplish the behaviors (Silva & Weinberg, 1984). Persistence refers to the pursuing of a task under difficult conditions. Motivation will therefore have a strong impact on why individuals select different activities, persist in them, and carry them out with intensity (Carron, 1984).

In the sporting arena there is a constant onslaught of questions from both coaches and athletes concerning motivation, especially about how motivation can be used to enhance performance. There are no simple answers, and there are few guidelines that have been empirically or experimentally validated. What we do know is that without motivation, there could be no behaviors (Carron, 1980). Although motivation has engulfed the literature for years, many motivational theories have not succeeded in totally explaining, and predicting human behaviors (Locke, Shaw, Saari, & Latham 1981). If guidelines can be established for increasing motivation, we could expect to see higher participation levels, lower attrition rates, enhanced performance, greater enjoyment, and more independence among athletes.

Theories of motivation based on instincts, physiological drives, and conditioning have been found to be inadequate in explaining human behaviors (Harter 1981b). White (1959) refuted both Hull's drive theory and Freud's psychoanalytic theory on the grounds that not all behaviors could be explained by deficit motives, nor by the operation of either secondary reinforcement or anxiety reductions. In their place White proposed a new concept of

motivation called "competence". He defined competence as an organism's capacity to interact effectively with the environment. Although he was convincing with his array of evidence, White failed to produce a theory that could be operationalized (Harter, 1981b).

The trend towards a more cognitive orientation of motivation theory has led to the development of several theories. Cognitive theories emphasize self appraisal and the role it plays in influencing achievement outcomes (Brustad, 1988).

Perceived competence and goal orientation are two constructs that have been recognized as having a major impact on motivation (Dweck & Leggett, 1988; Harter, 1978, 1981; Nicholls, 1984). It is argued that the combination of these two constructs will differentially influence an individual's level of motivation (Dweck & Leggett, 1988; Nicholls, 1984). The review of literature will therefore be divided into three sections, (a) perceived competence, (b) goals, and (c) Dweck & Leggett's social-cognitive model of motivation which integrates both perceived competence and goal orientation.

A) Perceived Competence

During the past 15 years, many theorists (e.g., Bandura, 1977, Deci, 1975; Harter, 1982; Nicholls, 1978, 1984) have emphasized the role perceived competence plays in understanding achievement behaviors. Bandura (1977) suggested that self confidence for a specific task, given that one has adequate skills and incentive for the task, determines the amount of effort expended, the degree of persistence, and the final result. Similarly, Deci (1975) theorized that it is the individual's level of intrinsic motivation that determines behaviour in achievement situations. He stated this only occurs when enjoyment of the activity is built upon feelings of competence and self determination arising from involvement. People become motivated to feel competent, which fosters the seeking of challenges to test one's abilities.

One theory that has had a significant impact on deciphering the various component

of achievement behaviors is Harter's (1975, 1978, 1980, 1981a, 1981b, 1982) theory of perceived competence. In achievement settings Harter predicted that an individual's judgement of his or her degree of competence will influence performance. Due to the lack of information concerning children's perceived competence, Harter (1975, 1981a, 1981b), concentrated her efforts on generating a developmental model.

Initially inspired by White's (1959) "effectance motivation" theory, Harter attempted to operationalize his model but found it far too global in nature to examine empirically. Harter's initial research suggested that there were three domains that should be examined when measuring perceived competence. The three domains are: (a) cognitive competence, with an emphasis on cognitive performance; (b) social competence, which assesses popularity amongst one's peers; and (c) physical competence, which focuses on sport and outdoor games. It is possible that an individual could show variations in motivation across the three domains. For example a person might have high perceived cognitive competence in classroom activities, but low perceived physical competence when involved in physical activity.

A person's socialization history will have a major impact on how he/she perceives and evaluates personal ability (Harter, 1980). She argued that a person's development and maintenance of effectance motivation would require a sufficient degree of positive reinforcement of mastery attempts. With sufficient positive reinforcement, the person gradually internalises two critical systems. The first is self reward, where the person learns to praise himself for mastery attempts and success. The Second system is the establishment of internal standards. Through a history of positive and negative feedback, the person internalises a set of standards from which to judge his/her own competency. As these critical systems develop, the need for dependency and external social reinforcement diminishes, and the person becomes more intrinsically motivated.

According to Harter, a person who experienced negative outcomes will avoid the task, or become reliant upon external evaluation to determine his/her level of competence in the

specific domain. This will occur when: (1) there is lack of reinforcement and/or disapproval for individual mastery attempts; (2) modelling of such disapproval; and (3) reinforcement for dependency on adults. The individual who experiences these outcomes will experience low perceived competence and lack of personal control of the environment.

Nicholls (1978, 1981) also alludes to the role perceived competence plays in achievement motivation. Unlike Harter's theory (1978, 1981) which focuses on a person's degree of perceived competence and the corresponding effect it has on behaviour, Nicholls' theory is concerned with the concept of ability, and how it is interpreted in regard to performance and persistence in achievement settings. Nicholls (1978) defined ability as what a person perceives he/she can do. This requires evidence of optimum effort before performance can be indicative of ability.

Nicholls's developmental theory of achievement motivation holds that feeling competent is the major goal in achievement situations. He argued that in achievement situations people either maximize the demonstration of high ability, or minimize the demonstration of low ability. Perceptions of success and failure are based on the demonstration of high or low competence (Duda, 1987).

Nicholls (1978, 1984) suggested that perceptions of ability and effort are understood differently by younger and older children. The development of the concept of ability involves being able to differentiate between the concepts of effort and task difficulty from the concept of ability. As stated by Duda (1987), a child's perception of personal competence relates to his or her understanding of task difficulty and the role of effort in determining the outcome of tasks of varying difficulty.

Duda (1987) extensively reviewed Nicholls developmental theory of achievement motivation and how it relates to children in sport. Although supportive of Nicholls's theory, she provided some warnings about its use in the sporting context. She pointed out the need to distinguish between cognitive and physical tasks,

and the development of the concept of ability in sport versus its development in the classroom. In sporting tasks, effort and ability are much more obvious when compared to cognitive tasks. For example, an individual who is exerting little effort on the playing field is much more obvious compared to an individual in the classroom exerting little effort reading a book.

There are several studies that support the hypothesized relationship between perceived competence/ability and subsequent behaviors and performance in the physical activity context. Research suggests that actual levels of physical and social competence reflect motives for participation (Klint & Weiss, 1987). It is predicted that individuals who participate in physical activity have higher perceived physical competence. The results of field tests suggested that those with high perceived physical competence persisted longer at the task, and have higher expectations for future success compared to non-participants (Feltz & Petlichkoff, 1983; Feltz & Brown, 1984; Roberts, Kleiber & Duda, 1981). Horn and Hasbrook (1987) have also found that variations in the criteria used to evaluate performance in the sports environment have predictive power in determining individual developmental differences in levels of perceived competence.

Klint and Weiss (1987) investigated the relationship between perceptions of competence and particular motives for participation. The sample involved sixty-seven children involved in youth gymnastic programs. All three of Harter's subscales were administered, as well as a gymnastic participation questionnaire. The results showed that children with high perceived physical competence rated skill development as their most important reason for participation as compared to those with low perceived physical competence. Gymnasts high in perceived social competence were more motivated by the affiliation aspects of sport when compared to their low perceived social competence counterparts.

One of the earliest studies investigating the relationship of sports participation to perceived competence was conducted by Roberts, Kleiber and Duda (1981). Harter's perceived competence scales was administered to 143 fourth and fifth grade children who were

interviewed to determine their sports participation status. Roberts et al. (1981) found that sports participation was correlated with perceived competence. Participants in organized sports were higher in perceived physical competence, were more persistent, and had higher expectations for future success. Roberts et al. support the notion that individuals who perceive themselves to have a high level of ability in an activity not only seek out that activity in order to demonstrate the ability, but they also exhibit achievement orientated dispositions towards the activity.

One of the main questions facing researchers is whether sport participation effects the level of perceived competence, or does a person's prior level of perceived competence influence the choice of physical activity? In other words, is there an improvement in perceived competence with increased participation, or does the need to display ability or competence dictate the choice of activity? Feltz and Petlichkoff (1983) examined the relationship between perceived competence and length of involvement in sport for sport participants and their counterparts who discontinued involvement. Using Harter's (1979) Perceived Competence Scale for children, they found that participants in school sponsored sports had higher perceived physical competence compared to dropouts. Years of experience in the activity had very little effect on perceived competence. There was an overall gender difference with males participants having higher scores on the perceived physical competence scale compared to female participants.

Feltz and Brown (1984) conducted a similar study investigating the relationship between perceived competence and years of playing experience in soccer. They acknowledged that years of playing experience does not guarantee that a child will have a high competence in that domain. The degree to which a child has successful mastery experiences in the activity will influence his or her degree of perceived competence as compared to the length of involvement. Similar to Feltz and Petlichkoff (1983), they also found a significant but low relationship between years of experience and perceived competence.

Horn and Hasbrook (1987) investigated the possibility that certain characteristics (perceived competence and perceived performance control) may also affect children's preference for the various sources of competence information that are available in the sporting environment. They administered three psychological questionnaires to 229 children in three different age levels to assess their perceptions of physical competence, belief concerning their ability to control their physical performance, and preference for the various sources of competence feedback available in the athletic environment. Their findings supported Harter's (1981) theory regarding the developmental notion of competence motivation. Children in the 10 to 14 year old age group who had higher perceptions of competence and an internal perception of control had a greater orientation to the use of internal standards of evaluation. Children with external perceptions of control exhibited greater dependence on the use of game outcome and parental feedback as an important source of competence information.

The role of perceived competence and the development of children's peer relations is currently under discussion. Evans and Roberts (1987) stated that one factor that appears to have significant influence on peer relations, especially for boys, is physical competence. Children gain peer acceptance by excelling in something valued by other children, and there is much evidence that athletic skills are valued by other children (Asher, Oden, & Gottman, 1977; Harter, 1979). Performance in physical activity provides an important source of information regarding a child's relative competence and self worth. If the relationship between perceived competence and peer relations is positive it could provide useful guidelines for the structuring of junior sport coaching and physical education classes.

The research reviewed thus far has implied that perceived competence/ability effects choice of activity, and whether or not they continue to participate. Perceptions of competence in the physical domain are obtained from a history of successful mastery attempts. An individual who is successful at mastery attempts will increase his/her perceived competence, thereby increasing motivation to be competent. An individual who is unsuccessful in his/her

mastery attempts will experience feelings of low competence, resulting in decreased motivation to continue in the activity (Feltz & Petlichkoff, 1983). Only when activities are challenging, and one has the chance to develop ability, will there be a sustaining interest in the activity (Deci, 1975). This requires structuring the environment so the emphasis is on involvement, skill development, and enjoyment of doing the skill. Thus, coaches and teachers should be concerned with the quality of the experience they provide for their athletes and students.

B) Goals

A significant amount of research has been conducted concerning the effects of goal setting on performance. Much of the research conducted on this topic has concentrated on the type of goals, length of goals, and the effects of feedback on performance (e.g., Hall & Byrne, 1988; Locke & Latham, 1985; Locke, Shaw, Saari, & Latham, 1981). Very few studies have investigated the effect of goal orientation on behaviors.

The orientation of the goal will determine how the athlete will interpret the situation. This in turn, effects the direction, intensity, and persistence they bring to the task, now and in the future.

Within a cognitive framework, goal orientation is a critical factor. It is the individual's interpretation of the goal rather than the type of goal that determines his/her behaviors and affect in a specific event (Dweck & Leggett; Elliott & Dweck, 1988; Harter, 1981b; Nicholls, 1978, 1984). For example, an athlete with a given goal may interpret success as dependent on outcome, whereas another athlete with the same goal may interpret success as a reflection on increased competence through mastery of the task.

The literature pertaining to goals that is available is confusing due to the lack of standardization in the terminology. For example, mastery goal orientations are also known as learning goals (Elliott & Dweck, 1988; Dweck & Leggett, 1988), and activities in which one is "task involved" (Nicholls, 1984). Outcome/win goal orientations are also referred to as

performance goals (Elliott & Dweck, 1988; Dweck & Leggett, 1988), competitive goals (Giannini, Weinberg, & Jackson, 1988), and activities in which one is "ego involved" (Nicholls, 1984). To avoid confusion in this review only the terms mastery, and outcome/win will be used to describe the goal orientation.

There are two basic types of goal orientations; (a) a mastery goal orientation, and (b) an outcome/win goal orientation. Individuals who are concerned with increasing their competence by mastering the task are mastery goal oriented. Individuals who are concerned with gaining favorable judgement of their competence by significant others in an attempt to validate or document their ability are outcome/win oriented (Nicholls, 1984; Elliott & Dweck, 1988; Dweck and Leggett, 1988).

A major component of Nicholls's theory is the idea that different perceptions of ability are linked to achievement goals. Nicholls (1984) stated that in the less differentiated conception, levels of ability and task difficulty are judged in relation to one's own perceived mastery, understanding or knowledge (mastery orientated goal). For example in a basketball practice, an individual may be motivated to improve a specific skill for the sole purpose of improving his own ability. In the more differentiated conception of ability, learning is an insufficient basis for perception of competence. Task difficulty and ability are judged high or low with reference to members of a normative reference group (outcome/win orientated goal). Using the same example as above, the individual is now concerned with how he compares with other team members. Rather than mastering the skill, outcome becomes the major reference for judging ability.

The criteria for judging ability depends upon the chosen goal orientation of the individual. Mastery orientated goals are self-referenced, therefore difficulty is judged according to whether a person expects to fail or not. Increased effort and mastery of the task demonstrates greater competence, leading to higher perceived ability. In outcome/win oriented goals however, difficulty is determined from the performance of others. High ability demands

success at a task in which others fail. Effort has negative connotations, although one could learn through effort to master the task. The more time or effort needed to learn something, the less ability is implied (Nicholls, 1984). For example, in a race scenario one athlete easily completes 1600m in 4min, whereas a second athlete also completes the race in 4min but it has required all of his effort. The first athlete would be judged as having higher ability because he required less effort to complete the same task.

Nicholls (1984) argued that the choice of a goal depends on cognitive maturity, personal disposition, and situational factors. A mastery oriented goal will be pursued if the individual is presented with a task of moderate challenge, with no extrinsic or external distractors such as evaluation, or external incentives. When evaluation against others is used to measure ability, an outcome/win goal will often be chosen. The presence of an audience, external evaluation, competition, or other evaluative cues, leads to concern for personal competence (Duda, 1987).

Jagacinski and Nicholls (1984) investigated the hypothesis that outcome/win goals are chosen when; (a) tasks are presented as tests of valued skills, (b) interpersonal competition is fostered, and (c) self awareness is induced. The study was conducted to determine whether college students used different conceptions of ability in different achievement settings. In the mastery situation, in which students believed they were learning a language for personal interest, students used a less differentiated concept of ability. Judgments of higher effort and more positive affect were associated with the mastery situation. Students in the outcome/win situation had to envisage learning a language skill that may lead to a position in a very competitive field; to gain such a position would require the student to out-perform the rest of the class. Students employed the more differentiated conception of ability, and judged their ability, a) lower when they worked more than others and, b) higher when they worked less than others.

Several studies investigating learned helplessness suggested that changing the

individuals goal orientation increases both positive affect and mastery orientated behaviors (Dweck, 1975; Diener & Dweck 1980; Abramson, Seligman, & Teasdale, 1978). The helpless children attributed failure to lack of ability, in contrast to mastery orientated children who view failure as surmountable. Mastery orientated children continue to persist with the activity, and see level of effort as responsible for failure. Hence they try harder to master the task. Several researchers have found that by changing the framework of the situation from an outcome/win goal orientation to a mastery goal orientation, outcomes are then attributed to effort rather than ability. This led to persistence in the task, improved performance, and the alleviation of learned helplessness in the specific situation (Ames, 1984; Ames, Ames, & Felker, 1977; Diener & Dweck, 1980; Dweck, 1975)

Although much has been surmised on the effects of goal orientation on sporting performance, very little research has been conducted in this area. There appears to be a general agreement on the debilitating effects of an outcome/win goal orientation. The focus moves from mastering a task to demonstrating ability, and exaggerates the role of ability in an individual's perception of self-worth (Nicholls, 1979). An outcome/win orientation in failure conditions is likely to result in lack of persistence, leading to a reduced tendency to exercise skills for their own sake (Duda, 1987).

Mastery oriented goals are geared towards increasing task competence (Dweck & Leggett, 1988; Nicholls, 1984). When one is mastery orientated, self improvement becomes the focus. The individual is in control of the situation and when faced with difficult conditions he/she will continue to persist even when he/she has a low level of perceived competence. The individual then has realistic expectations leading to enhanced performance.

Giannini, Weinberg, and Jackson (1988) hypothesized that there would be a positive relationship between the strength of achievement goal orientations and performance under goal conditions. They found support for this relationship, but also found that the mastery goal will only motivate the individual if the goal is perceived as being important in the achievement

situation. Duda (1987), Vealy (1986) and Gill and Dzewaltowski (1988) have all found that elite athletes were the most mastery goal oriented, and the least outcome/win oriented as compared to non-athletes. These elite athletes are competitive in that they enjoy competition, but they judge themselves on performance rather than on outcome.

In teaching sports skills, mastery goals have been found to promote not only higher success and productivity but also increased achievement motivation compared to outcome win goals. The greater the level of motivation to master the skills the greater the level of enjoyment, self esteem, and positive relationships amongst participants (cited in Johnson, Johnson & Krotee, 1986).

Nicholls (1984) has further extended his theory arguing that there is a predictable relationship between achievement goals, perceptions of ability and "task choice." He hypothesized that individuals who are mastery oriented will choose a task at the intermediate level. Tasks demanding little effort offer no chance of displaying high ability. Tasks that require high effort lead to high chances of demonstrating little ability and low chances of demonstrating low ability. The most attractive task choice would be a task at the intermediate level, where chances of demonstrating one's highest level of competence are high. In other words they choose the task that is closest to their own perceived level of competence.

Nicholls (1984) classifies individuals who are outcome/win orientated into two categories. First, individuals with high perceived competence will choose a task at or above moderately difficult levels; this enables them to demonstrate high ability. If they believe they have the required ability, choosing increasingly difficult tasks and succeeding will lead to higher perceived ability.

The second category encompasses individuals with low perceived ability who will choose the extreme ends of task difficulty, selecting either very easy tasks or extremely difficult tasks. Choosing either extreme allows the individual with low perceived competence to avoid demonstrating low ability. Choosing extremely difficult tasks where expectations of

"anyone" succeeding are low, imply that failure cannot be attributed to low ability and the possibility that they have high ability cannot be ruled out. Individuals with low ability and lack of commitment to demonstrating high ability choose tasks with a high probability of success. Success indicates that one does not lack the low level of ability that failure would indicate.

Although the research is limited, many authors allude to the fact that coaches, teachers, and sports psychologists need to understand not only how confident the athlete is, but the basis of that confidence. A better understanding of "goals" will lead to intervention techniques that can be used to enhance performance (Hall & Byrne, 1988). By increasing the emphasis on a mastery goal orientation, we may help all athletes develop the orientation and technique to enhance confidence, satisfaction and achievement in sport (Gill & Dziewaltowski, 1988).

C) Social cognitive approach to motivation

Dweck and Leggett (1988) developed a social cognitive model of motivation which accounts for major patterns of behaviors in achievement situations. The model translates underlying personality variables into dynamic motivational processes to produce major patterns of cognition, affect, and behaviors. The underlying assumption is that motivation is built around goal orientated behaviors, which is further affected by the individual's perception of his/her ability.

Dweck and Leggett's (1988) model identified two types of response patterns, the helpless response and mastery orientated response. They also identified two different goal orientations, labelled outcome/win, and mastery. The combination of the response pattern and the goal being pursued will determine cognitive, affective, and behavioral outcomes.

The two patterns of response are helpless and mastery orientated behaviors. Under conditions where individuals can display their ability, both mastery and helpless individuals are equally likely to master the task. In other words, if all individuals can accomplish the task and demonstrate high ability, they will all display the mastery response. When faced with failure, the helpless individual will exhibit increased negative affect and impaired performance. Difficulties are seen as a reflection of one's ability, and extra effort would only further imply inadequate ability. In contrast, the mastery-orientated individual when facing difficulty, exerts more effort, and generates effective coping strategies such as self-instruction, and self monitoring (Dweck & Leggett, 1988; Elliott & Dweck, 1988). Although these individuals may be facing the same situation, and possess the same ability, one pattern of behaviors will enhance performance, and the other will result in deterioration.

Different perceptions of the same situation may be the result of the different goals that the individual is pursuing. Elliott and Dweck (1988) propose that goals are the central determinants of achievement patterns. Mastery goals promote mastering tasks to increase competence, and encourage challenge seeking and a mastery-orientated response to failure,

regardless of ability. Using outcome/win goals, individuals are concerned with demonstrating their ability, and gaining favorable judgement of their competence from significant others. Dweck and Leggett (1988) stated that outcome/win goals create a context in which the outcome of a situation and the input are interpreted in terms of their ability. The mastery goal does not rely on previous ability. Mastery goals however create a context in which the outcome provides feedback, determining the input required for effective learning.

Elliott and Dweck (1988) investigated the hypothesis that the goals the individual pursues determines his/her achievement patterns. They manipulated both the goals (mastery vs outcome/win) and perceived ability levels (low vs high). Their results suggested that goals were critical in determining achievement patterns. When outcome/win goals were highlighted and individuals believed they had low ability, they displayed the helpless pattern of behaviors. In contrast the combination of an outcome/win goal together with the belief of high perceived ability produced a mastery response, that is greater effort, when the individuals were faced with obstacles. When the mastery orientated goal was implemented, regardless of perceived ability the individuals sought to increase their competence.

If this model can be applied to sport it will provide a general, yet precise, structure for understanding individual and situational factors that influence achievement behaviors. The major advantage of the model will be the structural guidelines it will provide for coaches and teachers. It will enhance skill development, participation, and enjoyment all of which will increase the individual's perceived competence in the physical domain.

Research Hypotheses

Hypothesis 1 - According to Dweck and Leggett's (1988) model there is an interaction between type of goal orientation and level of perceived competence in failure conditions. Under failure conditions subjects with an outcome/win orientation and low perceived competence will demonstrate low positive affect and high negative affect, and display lack of

persistence. The other three groups will all display a mastery pattern of continued persistence, and the presence of high positive affect and low negative affect.

Hypothesis 2 - Dweck and Leggett's (1988) model proposes that under successful conditions, all groups will display equivalent high positive affect, low negative affect, and task persistence.

Hypothesis 3 - Nicholls (1984) advocates that when given a task choice, individuals will choose a task that either demonstrates high ability or avoids demonstrating low ability. Therefore it is expected that subjects with a mastery goal orientation, regardless of level of perceived competence, will choose a task close to their perceived competence. Subjects with an outcome/win goal orientation and high perceived competence expect to be successful and therefore choose tasks at or above moderate difficulty levels. Those individuals with an outcome/win orientation and low perceived competence expect to fail and therefore choose extremely easy or extremely difficult tasks depending on the certainty of their lack of ability.

Chapter 3

METHODOLOGY

Subjects

Sixty one (38 males 23 females) undergraduate students, ranging in age from 18-25yrs, and majoring in Physical Education at Lakehead University volunteered to participate in the study. Participants were assigned into either a high or low perceived competence group. Subjects from each group will then be randomly assigned to either a mastery or an outcome/win goal orientation condition.

Measures

Perceived competence: Three measures of perceived competence were utilized in the experiment (see Appendixes A, B and C). The two scales related to physical competence were Neemann and Harter's (1986) perceived athletic competence scale for college students, and a task specific competence scale (adapted from Harter's perceived physical competence scale). The perceived athletic competence scale was used to measure general athletic competence. Neeman and Harter (1986) reported that the internal consistency of the athletic competence scale as assessed by Cronbach's (1958) alpha was $\alpha=.92$. The task specific competence scale, composed of three items, determined the subjects competence for the throwing and balancing task (see Appendix A). The third scale measuring intellectual competence is regarded as an independent domain from physical competence (Neeman & Harter, 1986). It was administered to determine divergent validity. It was expected that there would be no or very low correlation between intellectual competence, the athletic competence, and task competence scales.. This scale has demonstrated sound internal consistency ($\alpha=.86$).

The question format for all competence scales is designed to offset individuals giving socially desirable answers. The format asks individuals to decide what type of person they are most like. The individual then decides whether the description is "sort of true" or "really true" for him or her. Items are scored on a 4-point ordinal scale where a score of 1 indicates low-perceived competence and a score of 4 reflects high-perceived competence.

Really True For Me	Sort of True For Me				Sort of True For Me	Really True For Me
<input type="checkbox"/>	<input type="checkbox"/>	Some people do well balancing & throwing the ball at the target.	BUT	Other people do at not do so well balancing throwing the ball.	<input type="checkbox"/>	<input type="checkbox"/>

Affect: The "Positive Affect Negative Affect Schedule" (PANAS) were used to measure positive and negative affect (Watson, Clark, & Tellegen, 1988)(See Appendix D). Positive affect reflects one's level of pleasurable engagement with the environment. Negative affect subsumes a broad range of aversive mood states (Watson, 1988). The terms comprising the Positive Affect scale consist of: active, alert, attentive, determined, enthusiastic, excited, inspired, interested, proud, and strong.

The Negative Affect terms are: afraid, ashamed, distressed, guilty, hostile, jittery, nervous, scared, and upset (see Appendix D). The PA and NA scales are not highly correlated as they are tapping different underlying factors. Each item in the schedule is scored on a five point Likert type scale ranging (1) very slightly or not at all to (5) very much.

Watson's (1988) research on the psychometric characteristics of the PANAS scale provided evidence that it has high convergent validity with other measures tapping the same underlying constructs. For example, the correlation with Deiner and Emmon's (1984) measures

for PA were $r=.74$, and for NA were $r=.81$. He found that both the positive and negative scales affect had high internal consistency, $r=.88$, showing that the items on each of the PA and NA scales to be homogeneous.

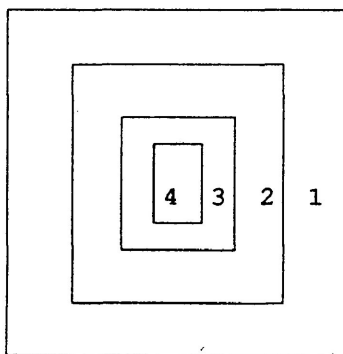
Persistence - Behavioral patterns will be measured by evaluating persistence. Persistence is defined as the number of optional practice trials the subject participates in after each compulsory trial.

The task

Subjects threw a backhand pass at a target while balancing on a stability platform. In the backhand pass the ball is carried in two hands to the throwing-arm side and toward the back as if in a wind-up for hip or underarm throw. As it moves behind the hip its control is taken over by the throwing arm which propels it across the body behind the back with an elbow leading quick throw which terminates with a vigorous wrist action.

The stability platform: The model being used (Mod. 3-15A, Marietta Apparatus Company) is constructed basically with aluminum deckplate. It consists of ball bearing suspension, adjustable rubber bumpers to serve a platform stops, and rubber feet supports under the base plate.

The target: The target was constructed of plywood. Colored tape was used to outline the target areas.



Target size -

- 1 - 1.5m X 1.5m
- 2 - 1m X 1m
- 3 - .5m X .5m
- 4 - .2m X .2m

Manipulation of difficulty: The criteria for success was determined from the subjects pretest scores. Difficulty was manipulated in one of four ways,

1. The throwing distance was increased (2-4metres).
2. The chosen target area was reduced in size,
3. The number of targets in a given time period.
4. The number of consecutive targets in a given time period.

Procedure

The experiment involved subjects attending on two separate days, approximately seven days apart. On day one subjects were tested in groups of approximately six to enable social comparison of ability. There were 3 males and 3 females in each group so individuals could make comparisons amongst members of their own gender. Subjects first answered two questionnaires; Harter and Neeman's (1986) perceived competence scale for college students on athletic competence, and Harter and Neeman's (1986) perceived competence scale on intellectual ability. After a brief introduction explaining procedures, the subjects viewed a video tape highlighting the important components of the skill to be executed. The subjects were given two one minute periods to practice the skill on the stability platform. To avoid boredom subjects rotated in order after each practice, thus enabling social comparison to take place between each practice. Following the practice, the subjects answered a questionnaire to determine their level of perceived task competence. The subjects were then pretested individually to determine their ability limits for the skill. There were 2 X 1min trials from each of the specified distances, two, three, and four metres. The scores were used to

manipulate the success/failure conditions used in the second session.

The scores from the Perceived Competence Questionnaire were median split by gender (see Appendix H). Those scoring in the upper half of the split were in the high perceived competence group, those scoring in the lower half were in the low perceived competence group. The perceived competence groups were randomly assigned to either a Mastery or an Outcome/win goal orientation group. The Mastery and Outcome/win goal orientation groups were differentiated by the set of instructions concerning the assessment of their skill ability.

Instructions for Mastery goal orientation - The experimenter explained to the subjects that the different strategies people use to learn skills will be under investigation. It was emphasized that there was no evaluation: the subjects were to concentrate on mastering the skill shown on the video tape when performing in the trials; they were told to try different strategies; these strategies would help in later sessions when a difficult but similar skill was presented.

Instructions for Outcome/win orientation - The experimenter told the subjects that their performance will be evaluated against the performance of their peers. They were told that for performance to be considered successful, the criteria set by the experimenter must be reached. It is important to reach the criteria as often as possible as the number of successful trials will be judged.

The task specific perceived competence scale was re-administered to determine reliability. It was re-administered three to five days after the first testing session in the subjects class time.

On day two, each subject individually performed the balancing and throwing task. Before the trials each subject received specific goal orientation instructions. The level of difficulty was determined by their pretest scores. There were eight trials lasting one minute each. The criteria for success progressively increased with each trial. The first four trials were manipulated so that the subjects reached the criteria. The last four trials were manipulated so

that they failed to reach the criteria. The subject filled out the PANAS scale after trials four and eight.

The subjects were given the option of additional trials (up to five) after each trial. These additional trials had the same criteria for performance and had the same time constraints as the test trial. These trials were used to measure persistence at the task.

After the last trial, the subject was given a task choice of difficulty level for a task to be performed. The task varied in the level of difficulty, from extremely easy, to moderately difficult, to extremely difficult. Unbeknown to the subject they did not have to do the task, knowledge of their choice was all that was required to support Nicholls (1984) theory on task choice and perceived competence.

To determine the strength of the goal orientation instructions, a post-enquiry interview did take place with each subject following the trials. The sport orientation subscale of Gill and Deeter's (1988) sport orientation questionnaire was adapted for use in the post-enquiry interview.

Chapter 4

RESULTS

Data Analysis

Data analysis consisted of two stages. The first stage involved investigating the psychometric properties of the task specific competence scale and the Positive Affect Negative Affect Schedule (PANAS). Reliability analysis for the Task Specific Perceived Competence scale (TSPC) involved testing the homogeneity of the subscales (internal consistency), and test-retest reliability. Validity was established by correlating the scale with other measures that should provide either convergent or divergent validity. The PANAS scale was investigated for internal consistency, and compared to Watson's (1988) original findings for this scale.

The second stage of the data analysis involved examining patterns of behaviour and affect in relation to the selected hypotheses of Dweck and Leggett's (1988) social cognitive model of motivation. The primary analysis investigated Dweck and Leggett's hypothesis that patterns of behaviour and affect are a function of an interact between levels of perceived competence, type of goal orientation, and the achievement situation. The secondary hypothesis examined Nicholl's (1984) proposal that a subject's task choice can be predicted by level of perceived competence and type of goal orientation.

The results are presented in three parts. The first section documents the psychometric properties of all scales used in the study. The second section presents the results for affect and task persistence for all groups in success and failure conditions. The third section presents the data on task choice.

Preliminary analysis

Task Specific Perceived Competence

The results of the reliability tests of the TSPC scale provided evidence of sound psychometric properties. Internal consistency of the TSPC scale was assessed using coefficient alpha (Cronback, 1951). There are two values as the scale was administered twice. For time one $\alpha=.80$ and for time two $\alpha=.82$. All item means fell between 2.56 and 2.97, with the standard deviations ranging from .56 to .67, thus indicating sufficient item variability. A test-retest of the Task Specific Perceived Competence Scale was undertaken to determine whether the test was stable over time. The Pearson's product moment correlation of the two TSPC scale measures were .79 (Trial 1 M= 8.13 SD= 1.71; Trial 2 M= 8.64, SD 1.54)

Construct validity was determined by comparing the TSPC scale to Neemann and Harter's (1986) subscales for athletic competence and intellectual competence for college students. As the TSPC scale has never been administered or tested before it was important to provide evidence of correlation with similar measures. The average of the two administrations of the test was used as a composite score for the TSPC.

The TSPC scale was designed to determine whether the subject felt competent at throwing a ball at a target while balancing on a stabilometer. A similar but more general construct is measured by Neeman and Harter's (1986) athletic competence subscale for college students. This scale assesses whether a person feels they are good at physical activities and sport. The analysis found a low but positive correlation between the TSPC scale and the athletic competence subscale ($r=.29$). In contrast, when the TSPC was correlated with the intelligence subscale, the results indicated an extremely low correlation ($r=.06$). This provides support that the TSPC scale was measuring some of the same underlying constructs as the athletic competence subscale. A strong correlation would be unlikely to occur as the TSPC scale is task specific whereas the other is a general measure of perceived athletic competence. The intelligence subscale is designed to measure a construct not conceptually related to athletic

or task competence. The low correlation between the TSPC and intelligence competence scales provided further support for the construct validity of the TSPC scale.

PANAS Scales

The Positive Affect Negative Affect Schedule Scale has previously been found to have high internal consistency ($r=.88$) and high convergent validity with other scales that also measure positive and negative affect (Watson, 1988). The reliability tests were assessed by coefficient alpha (Cronback, 1951). The results for the PANAS scale in this research support Watson's (1988) results. The reliability for Positive Affect Scale (PA) on the first administration (PA1) was $\alpha=.77$, on the second administration of the PA Scale (PA2) $\alpha=.80$. The Negative affect scales (NA) showed high internal consistency, with $\alpha=.85$ on the first administration and $\alpha=.92$ on the second administration. The results support the homogeneity of all the items on each scale.

Primary analysis

Dweck and Leggett (1988) argued that there should be an interaction between the type of goal orientation and level of perceived competence and the achievement situation. They predict that under successful conditions all groups will display similar patterns of task persistence, with high positive affect and low negative affect. It is expected however, that under failure conditions, subjects with an outcome/win goal and low perceived competence will demonstrate lack of persistence and high negative affect. The other three groups were hypothesized to display a mastery pattern of increased persistence, high positive affect and low negative affect.

Affect

The data for each affect measure was analyzed separately by a 2(perceived

competence) by 2(gender) by 2(goal orientation) by 2(condition) ANOVA with repeated measures on the last factor. The analysis revealed that there were no significant interactions. For positive affect there were no significant main effects (see Appendix E). For negative affect there was a condition effect $F(1,53) = 17.68$, $p < .001$ (see Appendix F). Subjects under failure conditions demonstrated higher negative affect ($M = 22.56$, $SD = 8.21$) as compared to the success condition ($M = 19.69$, $SD = 6.88$). Although there was no significant main effect for perceived competence, there was a strong trend, $F(1,53) = 3.59$, $p < .064$. The results indicate that there is no significant group differences and that under failure conditions all groups will experience higher negative affect as compared to success.

Persistence

The data for Persistence was analyzed by a 2(perceived competence) by 2(gender) by 2(goal orientation) by 2(condition) ANOVA with repeated measures on the last factor. It was expected that there would be no significant differences between groups in the success trials, therefore all four groups would have equivalent persistence. Under failure conditions, however, it was predicted that subjects with low perceived competence and an outcome/win goal orientation would fail to take extra practice trials whereas the other three groups would continue to choose extra practice trials in failure conditions.

The analysis revealed a Goal Orientation X Gender X Conditions interaction, $F(1,53) = 4.50$, $p < .05$ (see Appendix G). Table 1 provides a summary of the relevant descriptive statistics. A Scheffé test of pairwise comparisons indicated that there were no significant differences between groups in successful conditions. In failure conditions there were significant differences between females with different goal orientations. Females with a mastery goal orientation elected to have more practice trials than females with an outcome/win goal orientation. There were no differences in the number of trials taken between males with different goal orientation.

Across conditions females with a mastery goal orientation and males regardless of goal orientation all chose significantly more trials during failure when compared to the success condition ($p < .05$ in each case). Females with an outcome/win goal showed no significant increase in the number of practice trials they elected to have in failure conditions (see Figure 1). These results indicate that under failure conditions, females with an outcome/win goal will be the most likely group to give up on the task.

No significant main effects were found for persistence. Therefore neither gender, perceived competence (PC), or goal orientation (GO), had any independent effect on whether the subject chose to have extra trials. Perceived competence, although showing a strong trend ($p < .09$) in the direction of a main effect, was short of statistical significance. Although these results provide no support for the original hypothesis they do suggest we should be concerned with the interaction between gender and goal orientation in failure conditions.

Table 1

Means and Standard Deviations of Persistence Trials taken during Success and Failure Conditions as a function of Gender and Goal Orientation.

		Goal Orientation			
<u>Gender</u>		<u>Mastery</u>		<u>Outcome</u>	
		<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Success					
F		.69	1.25	.71	1.31
M		.27	.90	.65	1.04
Failure					
F		3.8	1.93	1.09	1.04
M		2.36	2.42	2.60	2.56

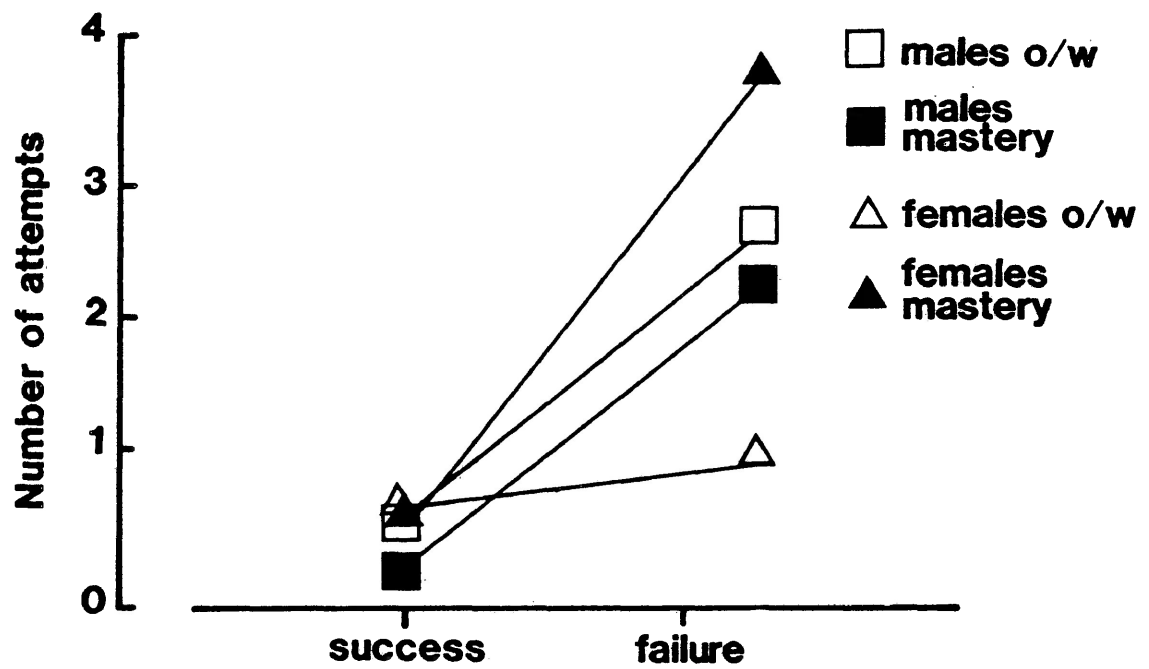


FIGURE 1: Persistence scores during success and failure conditions as a function of gender and goal orientation.

Task Choice

Analysis of task choice was examined using the χ^2 measure of prediction accuracy (Hilderbrand, Laing, & Rosenthal, 1977). The predictive independent measures were perceived competence and goal orientation. Nicholls (1984) proposed that the interaction between different levels of perceived competence and goal orientation would determine whether a subject would choose an extremely easy, a moderately difficult, or an extremely difficult task if given a task choice. The results provide no support ($p = .01$) for this theory in the physical activity setting (see Table 2).

The results for all four groups indicate that, when given a choice, the majority of subjects will choose a moderately difficult task. The distribution of task choice selection suggests that all groups will have a minority of subjects that will choose a very easy or a very difficult task.

Table. 2

Task Choice Selection data for Perceived Competence and Goal Orientation groups.

<u>Perceived Competence</u>	<u>Goal Orientation</u>	<u>Task Choice</u>		
		<u>EASY</u>	<u>MODERATE</u>	<u>DIFFICULT</u>
Low	Outcome/win	3	9	2
Low	Mastery		10	
High	Outcome/win		9	
High	Mastery		10	

Summary of the Data

There was no evidence to suggest that in failure conditions goal orientation interacts with perceived competence in determining task persistence or affect in a physical activity setting. There is support that all subjects will experience higher levels of negative affect in failure conditions regardless of perceived competence, goal orientation, and gender.

Gender and goal orientation will determine whether someone persists at a task under failure conditions. The most susceptible group is females with an outcome win goal. When faced with failure they choose less practice trials than the other subjects. The level of perceived competence and goal orientation failed to influence task choice.

Chapter 5

DISCUSSION

The present study was designed to examine Dweck and Leggett's (1988) social-cognitive model of motivation in a physical activity setting. Based upon their framework, it was hypothesized that perceived competence and goal orientation would interact under failure conditions to produce differential behavioral affective patterns. Specially, in situations where failure was experienced participants with low perceived competence and an outcome/win goal would demonstrate high negative affect and lack of persistence at the task whereas the other three groups would continue to demonstrate a mastery pattern of affect and behavior. The data does not provide any evidence to support Dweck and Leggett's claims.

In the failure condition there was no support for Dweck and Leggett's (1988) social-cognitive model of motivation. The ANOVA revealed that level of perceived competence and goal orientation had no systematic effect on affect and persistence. There was, however, a three way interaction between Gender, Goal Orientation and success failure. There were significant differences in persistence between females with an outcome win goal and the other three groups. Females with the outcome/win goal persisted less under failure conditions compared to females with a mastery goal, and males with either goal orientation. This has implications for both teaching and coaching physical activity which will be discussed later.

The secondary hypothesis related to task choice, predicting that perceived competence level and goal orientation would effect task selection received no support. Nicholl's (1984) theory predicted that subjects with low perceived competence and an outcome win goal would choose either an extremely difficult task, or an extremely easy task enabling them to avoid demonstrating low ability. Specially subjects with high perceived competence and an outcome

win goal would choose a task of moderate difficulty or the extremely difficult task, dependent on their predicted ability level. Mastery goal orientated subjects with either high or low perceived competence would choose the moderately difficult task as it provided challenged allowed them to demonstrate their level of ability. The majority of all participants in this study chose a moderately difficult task. In each group it was a small minority that chose extremely easy or an extremely difficult task.

The discussion of results will address each dependent measure, how the results compare to other related literature, and the possible reasons for any discrepancies. Directions for future research will be discussed in the implications section.

Affective Measures

Analysis of the PANAS scales following success and failure provided no evidence that there were any systematic differences between the experimental groups. The results failed to support the original hypothesis that subjects with low perceived competence and an outcome/win goal orientation would experience higher negative affect as compared to the other three groups during failure. However higher negative affect increased significantly from success to failure conditions for all four experimental groups.

The results of the present study are somewhat surprising since the social-cognitive approach has been proven very successful in predicting affect in the academic setting in a limited number of studies (Deiner & Dweck, 1988). It was anticipated that because of the overt nature of the sporting environment, this model would have stronger effects than that of the classroom setting. Success and failure are much more observable and open to social evaluation in physical activity as compared to the classroom. Several issues that may have produced the results need to be discussed. These issues include the differences between the cognitive and the physical domain when faced with difficult conditions, task relevance and importance, and the stability of perceived competence and goal orientation for adults.

The physical domain is qualitatively different from the cognitive domain. It was assumed that success and failure in movement behavior are readily observable and open to social evaluation, therefore the social-cognitive model would be a strong predictor of affect. This may not be the case.

Duda (1981) investigated the differences between the classroom and the playing field achievement situation. The results found that both males and females preferred to succeed in sport rather than the classroom. In the failure situation boys found failure in the academic setting less upsetting than in the sporting environment. Girls, on the other hand, cited failure in the sports environment as less disturbing compared to failure in the academic setting. In contrast, Harter (1981) found that anxiety was generally higher in the cognitive domain as compared to the sports domain regardless of gender. This was due to the greater importance given to classroom success by adult authority. In the sporting domain performance anxiety was lower and intrinsic motivation higher as compared to the cognitive domain.

Evaluation in sport is often under peer evaluation as compared to adult evaluation in the classroom. In support of Harter's (1981) findings, Buchanan, Blankenbaker, & Cotten (1976) found that both boys and girls placed greater importance in good grades rather than being good at sport. When popularity was the issue, boys indicated that being good at sport was most important whereas girls felt grades were slightly more important. Furthermore, with regard to setting, the literature suggests that in a strictly achievement oriented environment the cognitive domain is recognized as being more sensitive under failure conditions. In a social setting where peer comparison and peer evaluation are taking place both males and females find it worrying to fail in sporting activities.

Peer evaluation is an important form of evaluation in sport. In retrospect our subjects may have had higher levels of negative affect if their peers had been in the room when they were being tested. The nature of the task employed in this study and the environment may not have produced the same threat to self esteem that an adult would experience in the sporting

domain.

The threat of failure may not have been aversive enough to effect levels of affect in adults. Four failure trials may not have been powerful enough stimulus to produce changes in affect.

The second factor that may have influenced our results is task value. The degree of importance given to the task can influence the pattern of behavior. If the task was of little value the subjects may lack motivation to increase effort in the failure condition. The novelty of the task made it difficult to determine its importance to the subject. If the task was unimportant, failure may not have greatly changed their affective pattern, therefore the results may not truly reflect their behavior in difficult achievement situations. The conditions of an achievement situation must ensure there is challenge, but not so far removed from the subjects perceived ability that it leads to discounting the importance of the experience (Bandura, 1977; Deci & Ryan, 1987). This provides the opportunity for people to engage in activity that will challenge them to meet certain goals, to be responsible for those goals, and to demonstrate high ability and avoid the demonstration low ability (Nicholls, 1980). The balancing and throwing task may have lacked the necessary challenge, this would partly explain the lack of differentiation between groups in levels of affect. However there was a condition effect for negative affect which suggests in the failure condition there was distress when goals could not be achieved.

Perceived competence and goal orientation may be more stable in adults as compared to children. If this is true adults may need a greater amount of manipulation to change their goal orientations. Rudisill (1988a) suggests that levels of perceived competence are much more stable in adults than children. Children are more willing to accept different goal orientations and disregard their feelings of competence when told they could improve, whereas adults were not. Adults with strong fixed and incremental views of perceived physical competence may require a longer intervention period to change goal orientations.

The results give no clear cut answers. It is difficult to determine without further

research whether the results are a reflection of the sporting domain or the experimental design.

Future research may employ a broader subject pool. There was relatively small variance in the subject population for perceived competence (see Appendix H). Physical education students may have a standardized set of standards for themselves that are different from others. Extensive experience in the field of movement behavior may instill in these subjects an incremental view of physical performance. These students are expected to mastery new physical activities as part of their course work. Hence this sample may realize that increased effort and practice will eventually lead to increased performance. They might also more realistically evaluate competence and may not be as easily manipulated by goal orientation. These factors may have rendered them impervious to experimental manipulation.

Persistence Measures.

Persistence refers to continuation of a task under difficult conditions. In failure conditions there was support for group differences in persistence. The results indicated it was a gender by goal orientation interaction. There was no support for the initial hypothesis which predicted an interaction between perceived competence and goal orientation in failure conditions.

In failure conditions, males with both goal orientations and females with a mastery orientation increased persistence on the task. Females with a outcome/win goal orientation persisted less. All males and females with a mastery goal orientation chose more practice trials between tests than females with an outcome win goal.

The literature on motivation has supported a gender difference in achievement situations. Attribution theory (Weiner, 1985; Roberts & Duda, 1984) confirmed causal differences between gender. Roberts and Duda (1984) found that in achievement situations outcome is the strongest indicator of performance for males. On the other hand, perceptions of ability for females were tied to attributions of skill and luck. Women were also less likely

to use social comparison in order to determine their own importance in the sporting domain. Although Roberts et al.(1984) study provides insight into how males and females determine their performance, it does not serve as a predictive tool for ascertaining patterns of behavior while participating in the activity. The present results suggest that females with a mastery goal orientation have a similar behavior pattern as males. It is a subgroup of females, those with an outcome/win goal, that fail to persist in difficult situations.

It is worth noting that males persist regardless of goal orientation. Rudisill (1988a) found that when cognitive and behavioral comparisons were made between gender in a win/loss situation there were differences in perceived competence, persistence and performance. Males regardless of outcome, had higher perceived competence, longer persistence and better performance than females. There are two reasons males may be persisting in the face of adversity. First, they may be untroubled by the outcome. Second, they may fear demonstrating low ability by failing to persist. Diener and Dweck (1978) propose that the reason for persisting may be to avert failure. Although they never specified that the effect was gender related, they stated that this group persisted in order to forestall the admission of failure. Although the results of the present study only recognize a deterioration in persistence in females with an outcome/win goal orientation, if the males with and outcome/win goal are persisting to avert failure then instructions for this group should also be mastery oriented

Goal manipulation may help all athletes in achievement situations focus on performance rather than outcome. Further research is required to tease out why males with an outcome/win goal persist and females with an outcome/win goal do not. Finally, what are the characteristics of a mastery goal that encourage persistence in difficult situations.

Task Choice

A secondary question of interest was the impact of perceived competence and goal

and whether they are situational or a consequence of socialization. Fixed and implicit notions of intelligence may differ across the two domains. In movement activities adults may realize that they can and will improve with practice. Further attempts to understand motivation in the achievement setting will only enhance the experience to be gained from participating in physical activity.

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APPENDICES

Appendix A

Task Specific Perceived Competence Scale

As you can see from the top of your sheet where it says "What I am like," we are interested in what you are like as a person. This file contains statements which allow you to describe yourself. This is not a test. There are no right or wrong answers. Since students are very different from one another, each individual will be marking something different.

Let me explain how these questions work. Please look at the first item. This question asks about two different kinds of people, and we want to know which student is most like you.

What you need to first decide is whether you are more like the students on the left side who like the kind of person they are, or whether you are more like the person on the right side who wish they were different. Don't mark anything yet, but first decide which kind of student is most like you, and go to that side of the statement.

- 2) Now, I want you to think about whether that is only sort of true for you, or really true for you. Place an X in the appropriate box.
- 3) For each statement, check only one box. Do not check both sides, just the one most like you.

Really True For Me	Sort of True For Me	BUT..		Sort of True For Me	Really True For Me
<input type="checkbox"/>	<input type="checkbox"/>	Some people do well at balancing & throwing the ball at the target.	Other people do not do so well balancing and throwing the ball.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	If picking teams for a competition, some people would be among the first chosen for the balancing & throwing skill.	Other people would not be among the first chosen for balancing & throwing skill.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Other people are good enough at the balancing/throwing task.	Some people are <u>not</u> good enough at the balancing/throwing task.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Other people would not do well as the balancing/throwing task got more difficult.	Some people would do well as the balancing/throwing task got more difficult.	<input type="checkbox"/>	<input type="checkbox"/>

Appendix B

Athletic Competence Scale

As you can see from the top of your sheet where it says "What I am like," we are interested in what you are like as a person. This file contains statements which allow you to describe yourself. This is not a test. There are no right or wrong answers. Since students are very different from one another, each individual will be marking something different.

Let me explain how these questions work. Please look at the first item. This question asks about two different kinds of people, and we want to know which student is most like you.

What you need to first decide is whether you are more like the students on the left side who like the kind of person they are, or whether you are more like the person on the right side who wish they were different. Don't mark anything yet, but first decide which kind of student is most like you, and go to that side of the statement.

- 2) Now, I want you to think about whether that is only sort of true for you, or really true for you. Place an X in the appropriate box.

For each statement, check only one box. Do not check both sides, just the one most like you.

Really True For Me	Sort of True For Me	BUT..		Really True for Me	Sort of True For Me
<input type="checkbox"/>	<input type="checkbox"/>	Some students feel they could do well at just about any new athletic activity they haven't tried before.	Other students are afraid they might not do well at athletic activities they haven't ever tried.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Some students feel they are better than others at sports.	Other students don't feel they can play as well.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Some students don't do well at activities requiring physical skill.	Other students are good at activities requiring physical skill.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Some students don't feel they are very athletic.	Other students do feel they are athletic.	<input type="checkbox"/>	<input type="checkbox"/>

(Neeman & Harter, 1986)

Appendix C

Intellectual Competence Scale

As you can see from the top of your sheet where it says "What I am like," we are interested in what you are like as a person. This file contains statements which allow you to describe yourself. This is not a test. There are no right or wrong answers. Since students are very different from one another, each individual will be marking something different.

Let me explain how these questions work. Please look at the first item. This question asks about two different kinds of people, and we want to know which student is most like you.

What you need to first decide is whether you are more like the students on the left side who like the kind of person they are, or whether you are more like the person on the right side who wish they were different. Don't mark anything yet, but first decide which kind of student is most like you, and go to that side of the statement.

Now, I want you to think about whether that is only sort of true for you, or really true for you. Place an X in the appropriate box.

For each statement, check only one box. Do not check both sides, just the one most like you.

Really True For Me	Sort of True For Me		BUT..		Really True for Me	Sort of True For Me
<input type="checkbox"/>	<input type="checkbox"/>	Some students do not feel they are very mentally able.		Other students feel they are very mentally able.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Some students question whether they are very intelligent.		Other students feel they are intelligent.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Some students feel they are just as bright or brighter than most people.		Other students wonder if they are as bright.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Some students feel like they are just as smart or smarter than other students.		Other students wonder if they are as smart.	<input type="checkbox"/>	<input type="checkbox"/>

(Neeman & Harter, 1986)

Appendix D

Positive Affect Negative Affect Schedule

The following words describe how people feel in a sporting situation. We want to know how you feel about the situation you have just participated in. Read each word and circle the letter that indicates how much you agree or disagree with each statement: There are no right or wrong answers; simply answer as you honestly feel. Do not spend too much time on any one word.

	Strongly agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Strongly disagree
1. ACTIVE		B	C	D	E
2. AFRAID		B	C	D	E
3. ALERT	A	B	C	D	E
4. ASHAMED	A	B	C	D	E
5. ATTENTIVE	A	B	C	D	E
6. DISTRESSED	A	B	C	D	E
7. DETERMINED	A	B	C	D	E
8. GUILTY	A	B	C	D	E
9. ENTHUSIASTIC	A	B	C	D	E
10. HOSTILE	A	B	C	D	E
11. EXCITED	A	B	C	D	E
12. IRRITABLE	A	B	C	D	E
13. INSPIRED	A	B	C	D	E
14. JITTERY	A	B	C	D	E
15. INTERESTED	A	B	C	D	E
16. NERVOUS	A	B	C	D	E
17. PROUD	A	B	C	D	E
18. SCARED	A	B	C	D	E
19. STRONG	A	B	C	D	E
20. UPSET	A	B		D	E

Appendix E

Summary of Repeated Measures ANOVA for Positive Affect across Success and Failure conditions.

Source	SS	df	MS	F	p
PC	92.84	1	92.84	2.59	<.11
GO	70.68	1	70.68	1.97	<.17
GEND	.86	1	.86	.02	<.88
PC BY GO	.19	1	.19	.01	<.94
PC BY GEND	3.55	1	3.55	.10	<.75
GO BY GEND	54.09	1	54.09	1.51	<.23
PC BY GO BY GEND	1.08		1.08	.03	<.86
ERROR BETWEEN	1902.37	53	35.89		
TIMES	26.80	1	28.60	2.75	<.10
PC BY TIMES	3.63	1	3.63	.37	<.54
GO BY TIMES	.00	1	.00	.00	<.99
PC BY GO BY TIMES	9.06		9.06	.93	<.34
PC BY GEND BY TIMES	.05		.05	.01	<.94
GO BY GEND BY TIMES	2.01		2.01	.21	<.65
PC BY GO BY GEND BY TIMES	6.48		6.48	.66	<.42
ERROR WITHIN	516.54	53	9.75		

Note: GEND = Gender; PC = Perceived Competence; GO = Goal Orientation;
TIMES = Success/failure Condition

Appendix F

Summary of Repeated Measures ANOVA for Positive Affect across Success and Failure conditions.

Source	SS	df	MS	F	p
PC	353.09	1	353.09	3.59	<.06
GO	34.76	1	34.76	.35	<.56
GEND	188.63	1	188.63	1.92	<.18
PC BY GO	237.19	1	237.19	2.41	<.13
PC BY GEND	4.55	1	4.55	.05	<.83
GO BY GEND	.55	1	.55	.01	<.94
PC BY GO BY GEND	47.11	1	47.11	.48	<.49
ERROR BETWEEN TIMES	5216.87	53	98.43		
PC BY TIMES	246.31	1	246.31	17.68	<.00
GO BY TIMES	30.92	1	30.92	2.22	<.14
GEND BY TIMES	4.67	1	4.67	.33	<.56
PC BY GO BY TIMES	.33	1	.33	.02	<.88
PC BY GO BY GEND	3.36	1	3.36	.24	<.63
PC BY GEND BY TIMES	4.94	1	4.94	.35	<.55
GO BY GEND BY TIMES	6.55	1	6.55	.47	<.49
PC BY GO BY GEND BY TIMES	40.93	1	40.93	2.94	<.09
ERROR WITHIN	789.57	53	13.94		

Note. GEND = Gender; PC = Perceived Competence; GO = Goal Orientation; TIMES = Success/failure condition.

Appendix G

Summary of Repeated Measures ANOVA for Persistence Measures during Success and Failure Conditions

Source	SS	df	MS	F	p
Between subjects					
PC	13.68	1	13.68	3.27	<.08
GO	10.95	1	10.95	2.61	<.11
GEND	1.62	1	1.62	.39	<.54
PC X GO	.10	1	.10	.02	<.88
PC X GEND	.10	1	.10	.02	<.88
GO X GEND	16.80	1	16.80	4.01	<.05
PC X GO X GEND	2.77	1	2.77	.66	<.42
ERROR BETWEEN	221.88	53	4.19		
Within subjects					
TIMES	90.24	1	90.24	44.26	<.00
PC X TIMES	1.84	1	1.84	.90	<.35
GO X TIMES	4.34	1	4.34	2.13	<.15
GEND X TIMES	.04	1	.04	.02	<.89
PC X GO X TIMES	.37	1	.37	.18	<.67
PC X GEND X TIMES	.07	1	.07	.03	<.85
GO X GEND X TIMES	9.17	1	9.17	4.50	<.04
PC X GO X GEND X TIMES	.13	1	.13	.06	<.80
ERROR WITHIN	108.05	53	2.04		

Note. GEND = Gender; PC = Perceived Competence; GO = Goal Orientation; TIMES = Success/Failure condition.

Appendix H

Perceived competence groups for both genders based on a composite score from two administerings of the task specific perceived competence scale.

MALES	FEMALES
9.00	12.00
10.00	12.00
11.00	12.00
11.00	13.00
12.00	13.00
12.00	14.00 LOW PERCEIVED
13.00	14.00 COMPETENCE
14.00 LOW PERCEIVED	15.00
15.00 COMPETENCE	16.00
15.00	16.00
15.00	17.00
16.00	17.00
16.00	----
17.00	17.00
17.00	17.00
17.00	18.00
18.00	18.00
	18.00 HIGH PERCEIVED
19.00	19.00 COMPETENCE
18.00	19.00
18.00	19.00
18.00	20.00
18.00	20.00
18.00	20.00
18.00	20.00
18.00 HIGH PERCEIVED	
18.00 COMPETENCE	
18.00	
18.00	
18.00	
19.00	
20.00	
20.00	
20.00	
21.00	
22.00	
24.00	
24.00	