A TEST OF WEINER'S ATTRIBUTIONAL THEORY OF ACHIEVEMENT MOTIVATION AND EMOTION IN A YOUTH SPORT ACHIEVEMENT SETTING

by
DAVID WILLIAM ROBINSON

B.A. Comb. Hons., University of Birmingham, England, 1977
P.G.C.E., University of Loughborough, England, 1978
M.A., University of Victoria, 1983

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to the required standard

[redacted]
Dr. Bruce L. Howe

[redacted]
Dr. Walter Muir

[redacted]
Dr. David Turkington

[redacted]
Dr. Geraldine Van Gyn

[redacted]
Dr. Bryan Harvey

[redacted]
Dr. Murray Smith

Supervisor: Dr. Bruce L. Howe

ABSTRACT

This study assessed the applicability of Weiner's (1985) attributional theory of achievement motivation and emotion to the youth sport achievement setting.

After participating in a six-week competitive team sport program, 351 male and 395 female grade 8 and 9 students completed a questionnaire which employed Likert-type scales to assess their (a) perceived personal performance appraisal, (b) attributional appraisals for personal performance, (c) general (GA), self-related (SRA), and other-related (ORA) affective reactions, and (d) EXPECTANCY for future achievement.

Multivariate analyses revealed the following :

1. both perceived success and perceived failure were affectively involving, with perceived success being associated with (a) greater internality, stability, and controllability of attributions, (b) more positive GA, SRA, and ORA, and (c) greater EXPECTANCY,
2. perceived performance played a more important role in the affect and expectancy processes than did attributional appraisal,
3. the causal dimensions had roles of differing importance in each of the perceived success and perceived failure conditions,
4. congruent with the linkages proposed by Weiner, it was shown that (a) perceived performance had the greatest predictive power for GA, (b) internal and stable attributions were linked with positive SRA in success outcomes, and uncontrollable attributions were linked with negative SRA in failure outcomes, (c) internal

attributions were linked with positive ORA in success outcomes, and external attributions were linked with negative ORA in failure outcomes, and (d) stable and internal attributions were linked with high EXPECTANCY in success outcomes, and unstable and uncontrollable attributions were linked with low EXPECTANCY in failure outcomes, 5. contrary to Weiner's model it was shown that, (a) perceived performance was linked not only with GA, but with SRA, and ORA, and EXPECTANCY also, and (b) attributional appraisals may not always be involved in the affect or expectancy processes, but when operative they may influence each of the affect types and EXPECTANCY, and 6. males and females had similar appraisal variable-affect relationship patterns, but dissimilar appraisal variable-EXPECTANCY relationship patterns.

It was concluded that, although Weiner's model provides a useful theoretical framework for research, the need exists for a sport specific model of the antecedents of affect and expectancy.

Dr. Bruce L. Howe

Dr. Walter Muir

Dr. David Turkington

[redacted]

Dr. Geraldine Van Gyn

[redacted]

Dr. Bryan Harvey

[redacted]

Dr. Murray Smith

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This is dedicated to my mother and father,

to whom I will always be grateful.

CHAPTER 1

INTRODUCTION

The number of children participating in organized sport is increasing yearly. More than 2.5 million children between the ages of 6 and 16 participate in organized sport in the U.S. and Canada (Smith, Smith, and Smoll, 1983). Yet, available statistics indicate that a staggering 80% of all children involved in organized sport at all levels drop out between the ages of 12 and 17 (Roberts, 1984). This phenomenon of dropout in youth sport is currently of major concern to both sport psychologists and youth sport practitioners. It has been suggested that an affective approach to student motivation may help to further our understanding of this phenomenon (e.g., Biddle, 1984; Dweck, 1980).

Emotion or affect pervades human experience. In its diverse forms, it may influence behavior in different ways. Izard, Kagan, and Zajonc (1984) have stressed its role in the development of relationships, Dollard and Miller (1950) have used it to explain defense mechanisms, Harter (1966) has emphasized its role in personality adjustment, and yet others even suggest that emotion may be the most important motivational factor in behavior (e.g., Arnold, 1960; Campos and Barrett, 1984; Weiner, 1985). This has recently brought about a call for more research on the concept of emotion in the contexts of sport (Silva and Hardy, 1984; Vallerand, 1984, 1987), including the antecedents of discrete emotions.

Reviews by Leventhal (1980) and Vallerand (1984, 1987) indicate that research on this topic has generally adopted one of the three approaches: the physiological (e.g., Cannon, 1927; James, 1884), the behavioral (e.g., Dollard and Miller, 1950; Izard, 1971; Soloman and Corbitt, 1974), and the cognitive (e.g., Arnold, 1960; Mandler, 1984; Schachter, 1964; Speilberger, 1976; Weiner, 1985).

Work in the cognitive area by Arnold (1960), Lazarus (1984), Schachter (1964), and more recently Campos and Barrett (1984), Mandler (1984) and Weiner (1982a, 1985), has led to the acceptance of the assumption that emotional reactions in a specific situation are dependent upon the individual's appraisal of the event. However, despite such a belief, there has not been a systematic mapping of the relationships that may exist between types of cognitions and certain types of emotional reactions. Investigations of this sort have tended to be restricted primarily to either positive states of pleasure, such as optimal arousal (e.g., Zuckerman, 1979), or negative states of fear and anxiety (e.g., Fenz and Epstein, 1967; Klausner, 1968; Martens, 1977).

Cognitive antecedents are hypothesized to include various forms of event appraisal, for example, intellectualization, comparison (self, outcome and social) processes, mastery-oriented cognitions, imformation-processing functions, and causal search (Vallerand, 1987). The latter form of appraisal is clearly salient to the sports achievement setting, and is readily amenable to research through already established cognitive social

psychological theories (e.g., Arnold, 1960; Heider, 1958; Kelley, 1972; Schachter, 1964; Weiner, 1985).

Weiner's approach to student motivation and experience (Weiner, 1979, 1980, 1984) emphasized the importance of causal attributions in explaining the consequences of academic failure and success. According to this theory, achievement behavior, affective reactions, and expectations are determined, in part, by students' attributional conclusions concerning their classroom experiences. Following performance on a particular task, students react affectively in a generally positive or negative manner, ascribe causal attributions to explain their performance, and then experience further affect and expectancy changes dependent in part on the nature of these attributions.

Weiner's model proposes three stages to the outcome-affect relationship. First, it is suggested that after experiencing an achievement related outcome, individuals first appraise their performance, assigning it on a continuum ranging from subjective success to subjective failure. This subjective appraisal of the performance leads to a broad set of outcome dependent affects (e.g., success:happy; failure:sad) which are independent of the "why" of the outcome. Second, for both success and failure there are many emotions, which as a consequence of his or her performance, are discriminately related to specific attributions. These are termed attribution dependent affects (e.g., success: ability: competence, or, failure: ability: incompetence).

Finally, in the third stage, the attribution for success or

failure is classified into causal dimensions. These dimensions denote the psychological meaning of a particular attribute, with attributes being grouped under the dimensions of locus of causality (internal versus external), stability (stable versus unstable) and controllability (controllable versus uncontrollable). Following classification, further affective experiences follow as a consequence of the fact that some of the ascriptions have implications for self-evaluation and expectancy. Weiner (1985) considers that these dimension related affects have greater longevity than outcome or attribution linked emotions, and that such self-evaluation experiences will positively or negatively affect self-esteem and levels of motivation, and may ultimately help to determine whether an individual persists with or withdraws from a particular task or activity.

Although there has been extensive research on attributions in sport, a very limited amount of empirical work has been carried out on the links which may exist between attributions, affective reactions and expectancy. Furthermore, the existing studies (e.g., Hill and Biddle, 1985; Robinson and Howe, 1987; Vallerand, 1987) have focused almost exclusively on adult populations. To date, the study of attribution-affect and expectancy relationships in youth sport settings has been neglected. Furthermore, as Little (1985) pointed out, researchers have tended to assume that the range and type of children's attributions are the same as those of adults; that the

dimensions used to organize attributions are the same for children of all ages and adults; that all attributions conform to a causal structure of efficient causality; and that the meanings attached to attributions are the same for children and adults. As such, there is also a clear need for in-depth study of the nature of the attribution-affect and expectancy relationships which exist amongst young people. In terms of sport research, this need would perhaps be most usefully fulfilled by the study of early-adolesence, since this appears to be a crucial period when many young people opt to withdraw from organized sport.

STATEMENT OF THE PROBLEM

Participants in achievement situations, such as the school sports program, are assumed to progress through various cognition-emotion scenarios which may positively or negatively influence self-esteem, feelings toward others, enhance or inhibit levels of motivation, and ultimately help to determine whether an individual persists with or withdraws from an activity (Weiner, 1985). In this light, Weiner's attributional theory of achievement motivation and emotion provides a useful theoretical framework with which to examine the phenomenon of youth sport involvement, research on which to date has been rather limited and of a primarily descriptive nature (Gould, 1984).

Thus, adopting a theory-testing approach, the purposes of this study were, with specific regard to both success and failure outcomes in a youth sport achievement setting, to determine:

1. the nature and extent to which the appraisal variables (Arnold, 1966; Frijda, 1986) of perceived performance, locus of causality, controllability, and stability are, as a group, associated with affective reactions of the general, self-related, and other-related types,
2. the nature and extent to which each of the appraisal variables of perceived performance, locus of causality, controllability and stability are independently associated with (a) affective reactions of the general, self-related, and other-related types, and (b) expectancy for future performance, and,
3. the nature of possible gender differences in (a) causal dimension-affect, and (b) causal dimension-expectancy relationships.

CHAPTER 2

REVIEW OF LITERATURE

In reviewing the tenets of Weiner's (1982a, 1985) attributional theory of motivation and emotion and the related literature, this chapter is divided into the following sections:

1. An overview of Weiner's model.
2. Weiner's model and related research:
   (a) Causal attributions: perceived causes of success and failure.
   (b) The structure (dimensionality) of causal attributions.
   (c) The invariant nature of the causal dimensions.
   (d) The motivational dynamics of perceived causality: expectancy change.
   (e) The motivational dynamics of perceived causality: affective reactions.
   (f) Recent empirical research involving Weiner's model.
3. Application of Weiner's model to sport achievement settings:
   (a) Attributional research in sport.
   (b) Attribution-affect and expectancy processes in sport.
   (c) Youth sport settings and Weiner's model.

Overview of Weiner's Theory

Weiner (1982a, 1985) has advanced an attributional theory of motivation and emotion, with achievement strivings as the theoretical focus. A central assumption of this theory is that people are information seeking and process information

veridically. That is, people ask "why" questions in terms of the causes of success or failure outcomes in achievement settings. It has been demonstrated that this search is more likely given failure than success (Folkes, 1982), is more likely given unexpected rather than expected events (Hastie, 1984), and will be influenced by the subjective importance of the achievement situation (Weiner, 1982a). According to Weiner (1982b), attributional inferences are retrospective, summarize a number of experiences, often take place below a level of immediate awareness, and are intimately associated with self-esteem and self-concept.

Based primarily upon research in educational settings (Weiner, Russell, and Lerman, 1978; 1979), Weiner (1982a), has postulated a taxonomy of causes for success or failure outcomes in achievement settings. Table 1 indicates that the various causal attributions are classified along three causal dimensions of Locus of Causality (causes are either internal or external to the person), Stability (causes either change over time or are relatively enduring) and Controllability (causes are controllable or uncontrollable by the person).

Weiner (1982a, 1985), has proposed that causal attributions made for performance determine, in part, affective reactions, expectancy for future performance, and achievement behavior. Expectancy is considered to be determined primarily by the perceived stability of the cause. The emotional reactions are considered to be progressive and of three types.

Initial reactions are termed outcome-dependent emotions.

Table 1

Causes of Success and Failure Classified According to Locus, Stability and Controllability

	Internal		External	
	Stable	Unstable	Stable	Unstable
Uncontrollable	Ability	Mood	Task difficulty	Luck
Controllable	Typical effort	Immediate effort	Teacher bias	Unusal help from others

(Note. From An attributional theory of motivation and emotion, by B. Weiner, 1982a, In H.W. Krohne & L. Laux (Eds.), Achievement, stress and anxiety (p. 145). New York: Hemisphere).

These are broad positive or negative reactions which, although short-lived, are experienced intensely following success or failure, regardless of the "why" of the outcome. Subsequent attribution-dependent emotions follow as the result of the specific causal attributions made for the outcome. For example, attributing failure to a lack of effort produces feelings of guilt. Finally, the attributions for success or failure are classified into causal dimensions, and further affective experiences follow as a consequence of the fact that some of these ascriptions have implications for self-esteem and future expectancies. These dimension-tied affects are considered to have greater longevity than outcome- or attribution-linked emotions.

Weiner (1985) contends that such cognition-emotion experiences may positively or negatively effect self-esteem, enhance or inhibit levels of motivation, and may ultimately help to determine whether an individual persists with or withdraws from an activity or task.

Causal Attributions: Perceived Causes of Success and Failure

Numerous investigations have examined the perceived causes of success and failure in achievement-related situations. Table 2 (adapted from Weiner, 1985, p.550) summarizes ten such studies. These studies have employed two types of research procedures.

In one, subjects are provided only with outcome information, namely that success or failure has occurred. The outcome may be imagined, induced, or have occurred in a real setting, and might

Table 2

Investigations of the Perceived Causes of Success and Failure

Experiment	Subjects	Perspective	Task	Dominant Attributions
Frieze (1976)	College students	Self & other	Hypothetical school & game performance	Effort, ability, luck, & other persons
Elig & Frieze(1979)	College students	Self	Anagrams	Task, ability, stable effort, & mood
Freize & Snyder(1980)	1st-5th graders	Other	Hypothetical academic test, art project sports & game	Unstable effort, ability, interest & task
Cooper & Burger(1980)	Teachers	Other	School performance of students	Typical effort, academic ability, immediate effort & attention
Burger, Cooper, & Good(1982)	Teachers	Other	School performance of students	Ability, immediate effort, stable effort, & attention
Anderson (1983a)	College students	Other	Variety of hypothetical situations	Behavioral preparation, experience & skill, effort level, & general knowledge
Wilson & Palmer(1983) Study 1	College students	Self	School exam	Effort, luck/ chance, task characteristics & interest
Study 2	College	Self	School exam	Effort, ability, task character-istics & interest

(continued over)

Table 2

Investigations of The Perceived Causes of Success and Failure

Experiment	Subjects	Perspective	Task	Dominant Attributions
Bar-Tal, Goldberg, & Knaani(1984)	7th graders			
Study 1	Advantaged students	Self	Academic test	Test preparation, effort for study, concentration study, & teacher's ability
Study 2	Disadvantaged students	Self	Academic test	Test preparation, concentration study, effort for study, & self-confidence

(Note. From An attributional theory of achievement motivation and emotion (p.550), by B. Weiner, 1984, Psychological Review, 92, 548-573).

pertain to the subject or to another who is being judged. The subjects are then asked to explain the outcomes, using a free-response procedure where the possibilities that come to mind are listed.

In a related methodology, participants are provided with a large list of causes and rate the contribution of each cause to the outcome (Weiner, 1985). These causes often were ascertained in pilot research using a free-response methodology.

Although a virtually infinite number of causal ascriptions are available in memory, the research summarized in Table 2 suggests that within the achievement domain a relatively small number of causes tend to be salient. Table 1 documents the eight attributions which Weiner (1982a) proposes as being the most salient, with ability and effort considered to be the most dominant of these causes.

The Structure (Dimensionality) of Causal Attributions

In describing the nature of attributions that are relevant to educational settings, Weiner (1982a) has advanced a three dimensional taxonomy of causal attributions (see Table 1). According to Weiner (1979), causal dimensions reflect psychologically meaningful properties or characteristics of causal attributions.

The first of the dimensions, locus of causality, was originally introduced by Heider (1958), who suggested that the attributions people offer as explanations for behavior and events emphasize factors that originate within the person or arise from

environmental sources. As shown in Table 1, Weiner (1985) uses ability and effort as examples of internal causes, and luck and task difficulty as examples of external causes.

The second dimension, stability, was proposed to account for the differences in endurability of the particular causal attributions. That some attributes are unstable and have the potential to change (e.g., luck, mood, effort) while others are relatively permanent or stable (e.g., ability), suggests that the stability of causes should be considered when describing attributions (e.g., Clifford, 1986; Frieze & Weiner, 1971; Weiner, 1982a, 1985). Research on the changes in expectancy which follow successful or failure outcomes has indicated that these expectancy shifts are closely linked to the stability dimension (e.g., Feather & Simon, 1971; Weiner, Nirenberg, & Goldstein, 1976).

More recently Weiner (1979, 1980) has proposed that controllability is the third dimension of attributions. This dimension was added to his model to account for the logical distinction between such causes as mood and effort; although mood and effort are both internal/unstable causes, mood is considerably less controllable than effort.

Research in a variety of areas suggests that controllability dramatically influences reactions to outcomes. A number of concepts emphasize the importance of personal control (deCharms, 1968; Deci & Ryan, 1985; White, 1959), and related research indicates that loss of control is associated with depression (Seligman, 1975), motivational deficits (Weiner, 1979, 1984),

deterioration of physical health (Rodin & Langer, 1977), and stress-related illness (Glass, 1977). Furthermore, both Wortman and Dintzer (1978) and Seligman (1975; Abramson, Seligman & Teasdale, 1978) emphasize controllability as the primary mediator of low expectancy in their theories of learned helplessness.

Research, which has analysed the underlying causal structure, has employed three mathematical techniques: factor or cluster analysis (Meyer, 1980; Meyer and Koelbl, 1982; Wimer and Kelly, 1982), multidimensional scaling (Michela, Peplau and Weeks, 1982; Passer, 1977; Passer, Kelly and Michela, 1978; Stern, 1983) and correlations with a priori schemes (Stern, 1983).

In a summary of this research Weiner (1985) found that (i) all studies, with the exception of Passer et al. (1978) identified a locus of causality dimension, (ii) all studies with the exception of Passer (1977), and perhaps Passer et al. (1978) and Wimer and Kelly (1982) found a temporary-enduring property of causality, and (iii) all studies, with the exception of Michela et al. (1982) and Wimer and Kelly (1982) described a controllability dimension.

Meyer (1980) has provided the strongest support for the constuct validity of Weiner's three-dimensional model. In seeking to identify the dimensions underlying causal attributions for success and failure, Meyer employed 3-mode factor analysis to assess students' reasons for their performance on a university entrance examination. The results revealed three factors which clearly corresponded to the locus of causality, stability, and

controllability dimensions proposed by Weiner.

The data, therefore, supported Weiner's contention that there are three dimensions or properties of perceived causality. It must be recognized, however, that in the empirical studies reported, the dimensions require a subjective or experimenter labeling, and at times the empirical methodologies have imposed constraints on the causal perceptions of the subjects.

The scaling and correlational procedures, as well as those of factor analyses, yielded comparable dimensions corresponding to those evolved from the logical thinking of attribution theorists (e.g., deCharms, 1968; Heider, 1958; Weiner, 1979). Consequently, Weiner (1985) argued that the proposed structure of causality is not merely a convenient classification system,but is a structure which is actually employed by individuals involved in causal thinking.

Weiner (1985) acknowledged that two additional dimensions of intentionality (Weiner, 1979) and globality (Abramson, et al., 1978) may exist, but maintained that further evidence is required before attempts con be made to incorporate these dimensions into the full model.

The Invariant Nature of The Causal Dimensions

As previous researchers have noted (e.g., Elig & Frieze, 1979; Forsyth & McMillan, 1981) procedures that assess attributional processes by asking respondents to rate the causal importance of specific causes (e.g., ability, task, difficulty) possess two limitations.

First, subjects responses are limited to those causes the

researcher anticipates and includes on the assessment questionnaire. Most research has typically been limited to assessing causes contained within Weiner's (1982a) original taxonomy (see Table 1), but many other causes that respondents feel are important may be left untapped. For example, in a study to assess children's understanding of the causes of academic success and failure, Little (1985) derived 18 categories of causes (including those in Weiner's original taxonomy) from the responses of children in the 5 to 14 age range.

Second, the link between a specific cause and the conceptual attributional dimension is sometimes unclear. Although most of the theoretical emphasis is on dimensions of attributions, rather than specific causes (Weiner, 1985), using specific cause ratings to make inferences about dimensions is problematic, since causes fall at varying intervals along the dimensional continua, depending on the situation and the respondent's attributional perspectives. Effort, for example, is perceived to be a stable factor when it refers to the typical level of motivation of the individual, but at other times can be changeable when it refers to energy expended in seeking success on a particular task. Thus, when a respondent reports an attribution to effort, the researcher cannot be sure that a stable or unstable causal factor is being emphasized (Forsyth & McMillan, 1981).

However, although the interpretation of specific causes may vary over time and between people and situations, the underlying dimensions on which causes are given meaning remain constant. That is, dimensions are conceived as invariant, whereas the

location of any specific cause on a dimension is variable (Weiner, 1985).

Therefore, in order to circumvent the problems inherent in the unitary cause procedure, it would appear necessary to assess Weiner's concept of attributions by focusing on causal dimensions. For this purpose, Russell (1982) devised the Causal Dimension Scale (CDS) to measure how the respondent perceived the cause of his or her achievement outcome in terms of Weiner's three causal dimensions. The CDS scale was employed in this study.

The Motivational Dynamics of Perceived Causality: Expectancy Change

Every major cognitive motivational theory (e.g., Atkinson, 1964; Heider, 1958; Rotter, 1966) includes the expectancy of goal attainment among the determinants of action. Although consensus does not exist about the antecendents of goal expectancy, all theorists do agree that past reinforcement does play some important role.

Weiner's (1985) attributional position is that the stability of a cause determines expectancy shifts. Thus, if conditions are expected to remain the same, then the outcome(s) experienced in the past will be expected to recur. A success under these circumstances would produce relatively large increments in the anticipation of future success, and a failure would strengthen the belief that there will be subsequent failures. On the other hand, if the causal conditions are perceived as likely to change,

then the present outcome may not be expected to repeat itself and there is likely to be uncertainty about subsequent outomces or a belief that something different will result. A success, therefore, would yield no increments in subsequent expectancy and could give rise to decrements in the subjective probability of future success. Similarly, a failure will not augment the belief that there will be future failures (Weiner, 1985).

These ideas have given rise to a large body of research, primarily in achievement-related contexts. Two research strategies have been employed: correlational, and the manipulation of causal ascriptions. In the correlational research subjects were induced to succeed or fail at some laboratory task and their expectancies of future success as well as causal ascriptions were assessed. In the causal manipulation procedure, perceptions of task outcome as caused by particular causal attributions (e.g., ability, effort, luck, etc.,) were induced, and expectancy of success was ascertained following success or failure. Table 3 summarizes a sample of 12 investigations reporting that stable, relative to unstable, ascriptions are related to high expectancies of success after goal attainment and to low expectancies of success following a failure.

Although, none of the studies are definitive in that often other possible interpretations of the data have not been ruled out, the consistency of the findings indicate support for Weiner's theory. Weiner (1985) has subsequently proposed a fundamental psychological law relating perceived stability to

Table 3

Research Relating Attributions to Expectations

Experiment	Subjects	Task	Attribution Measure	Expectancy Measure
		Correlational Studies		
Meyer, W. (1973)	High school students	Digit-symbol substitution	Percentage ratings	Probability of future success
McMahan (1973)	Grammmer, high school, college students	Anagrams	Paired comparison	Confidence of future success
Weiner, Nierenberg, & Goldstein, (1976)	College students	Block design	Within-dimension scale rating	Anticipated performance
Inagi (1977)	College students	Puzzle	Percentage rating	Probability of future success
Kovenk-lioglu & Greenhaus, (1978)	College students	Test performance	Paired comparison	Anticipated performance
Ronis, Hansen, O'Leary (1983)	College students	Unspecified achievement stories	Dimension scale rating	Confidence in outcome repetition

(continued over)

Table 3 (continued)

Research Relating Attributions to Expectations

Experiment	Subjects	Task	Attribution Measure	Expectancy Measure
		Research manipulating attributions		
Rosenbaum (1972)	College students	Unspecified project (hypothetical)	Percentage rating	Probability of future success
Neale & Friend (1972)	College students	School exam (hypothetical)	Causes give in description	Anticipated grade
Fontaine (1874)	College students	Unspecified tasks	Fictitious ascriptions of others	Expected score
Valle (1974)	College students	Sales (hypothetical)	Causes given in description	Anticipated performance
Pancer & Eiser (1977)	College students	Anagrams	Fictitious information from others	Performance prediction
Heilma & Guzzo (1978)	College students	Job performance (hypothetical)	Causes given in description	Predicted personal action

(Note. From An attributional theory of achievement motivation and emotion (p.558), by B. Weiner, 1985, Psychological Review, 92, 548-573).

expectancy change. This Expectancy Principle (Weiner, 1985, p. 559) has three corollaries:

1. If the outcome of an event is ascribed to a stable cause, then the outcome will be anticipated with increased certainty, or with an increased expectancy, in the future.
2. If the outcome of an event is ascribed to an unstable cause, then the certainty or expectancy of that outcome may be unchanged or the future may be anticipated to be different from the past.
3. Outcomes ascribed to stable causes will be anticipated to be repeated in the future with a greater degree of certainty than are outcomes ascribed to unstable causes.

Motivational Dynamics of Perceived Causality: Affective Reactions

Both cognitive and mechanistic conceptions of behavior propose that motivation is determined by what one can get (incentive) as well as the likelihood of getting it (expectancy). This is the essence of the position of Expectancy x Value theorists (e.g., Atkinson, 1964).

Weiner's (1985) theory proposed a similar position, and considers incentive to mean the consequences of goal attainment for the actor, or the subjective value of the goal. Thus, although causal ascriptions do not influence the objective properties of goal objects, they do determine or guide emotional reactions, or the subsequent consequences of goal attainment.

These diverse affective reactions are considered to generate quite disparate actions.

Most emotion theorists with a cognitive approach conceive of emotional experience as a temporal sequence involving cognitions of increasing complexity (e.g., Arnold, 1960; Lazarus, 1984; Schachter & Singer, 1962). Weiner's (1985) attributional approach also assumes a sequence in which cognitions of increasing complexity enter into the emotion process to further refine and differentiate experience.

Thus, Weiner's (1982a, 1985) model proposes three stages to the outcome-affect relationship. It is contended that, after experiencing an achievement related outcome, individuals first appraise their performance, assigning it on a continuum ranging from subjective success to subjective failure. Then, based on the perceived success or failure of the outcome (the "primary appraisal"), there follows a general positive or negative reaction (a "primary" emotion). These emotions, which include happy and satisfied for success and sad and frustrated for failure (Weiner et al. 1978, 1979), are labelled outcome dependent-attribution independent, for they are determined by the attainment or non-attainment of a desired goal, not by the cause of the outcome. These broad outcome dependent emotions are the most short-lived and intense of the affective experiences in acheivement settings (Weiner, 1982a).

Following outcome appraisal and the immediate affective reaction, a causal ascription is assumed to be sought. In this second stage, a different set of emotions is then generated by

the chosen attribution(s). For example, success perceived as due to ability is considered to produce competence, whereas success following a long-term period of effort expenditure is considered to result in a feeling of calmness or serenity. Emotions such as competence and pride are labelled attribution dependent, inasmuch as they are determined by the perceived cause of the prior outcome.

Finally, in the third stage, the attribution for success or failure is classified into causal dimensions, which according to Weiner (1985), play a key role in the emotion process. Each dimension is uniquely related to a set of feelings and these feelings, in turn, influence subsequent behavior.

Weiner (1985) considered that those dimension related affects have greater longevity than outcome or attribution related emotions, and that such self-evaluation experiences will positively or negatively affect self-esteem and levels of motivation, and may ultimately help to determine whether an individual persists with or withdraws from a particular task or activity.

Locus of causality attributions are hypothesized to contribute to individual's self-worth and self-esteem. For example, success and failure perceived as due to internal causes such as personality, ability, or effort respectively raises or lowers self-esteem or self-worth, whereas external attributions for positive or negative outcomes do not influence feelings about the self. Hence, self-related emotions are influenced by the causal property of locus, rather than by a specific cause per se.

The success-internal attribution linkage enhances positive self-image. Similarly, the failure-internal attribution linkage contributes to negative self-image (Stipek, 1983; Weiner et al; 1978, 1979). Failure outcomes ascribed to lack of ability, lack of effort, or other personal characteristics generate feelings of guilt and shame. These affective reactions are also independent of the controllability of the attribution. That is, whether the perceived cause of failure is lack of effort or lack of ability, guilt and shame ensue. In both cases, the self is responsible (Weiner, 1985). Research conducted within the framework of self-worth theory, as proposed by Covington (1984; Covington & Beery, 1976; Covington & Omelich, 1981), lends further support to the link between self-worth and internal-external / stable-unstable attributions, and according to this approach, failure is more likely to lead to shame, depressed expectations, and lowered self-worth when it is ability linked rather that effort linked.

A voluminous attributional literature also documents the existence of a self-serving bias, or a tendency for individuals to ascribe success to internal factors and failure to external factors (e.g., Marsh, 1986, Snyder, Stephan, and Rosenfield, 1978). By taking credit for good acts and denying blame for bad outcomes, the individual presumably may be able to enhance or protect his or her self-esteem. Pride and personal esteem therefore are self-reflective emotions, linked with the locus dimensions of causality (Weiner, 1985).

Internal attributions also have been shown to influence

expectancy and to enhance the likelihood of future engagement in achievement related tasks (Weiner, Neirenberg, & Goldstein, 1976). This consequence occurs whether the cause is controllable, such as effort, or is uncontrollable, such as intelligence (Weiner, 1982b).

As described earlier, the primary influence of the stability dimension is considered to be on the expectancy of future outcomes. The stability dimension also influences expectancies independently of the other two dimensions (Weiner, 1985). Weiner et al. (1976) showed that subjects' expectations of future success after prior success experiences indicated that expectancy increments were positively associated only with the stability property.

The secondary association for the stability dimension is its influence on the magnitude of emotional reactions. Failure attributed to stable causes (e.g., ability, task, difficulty) contribute to apathy, resignation, and depression. Emotions generated by unstable attributions, however, are unlikely to be extended to future events (Bell-Gredler, 1986).

Research suggests that the controllability dimension also generates a different set of emotional reactions. The attributional antecedent for anger (and often aggression) is an ascription of a negative self-related outcome to factors controllable by others (Weiner, Graham, & Chandler, 1982). In constrast to the link between controllability and anger, it is hypothesized that uncontrollable causes are associated with pity (Weiner, 1985).

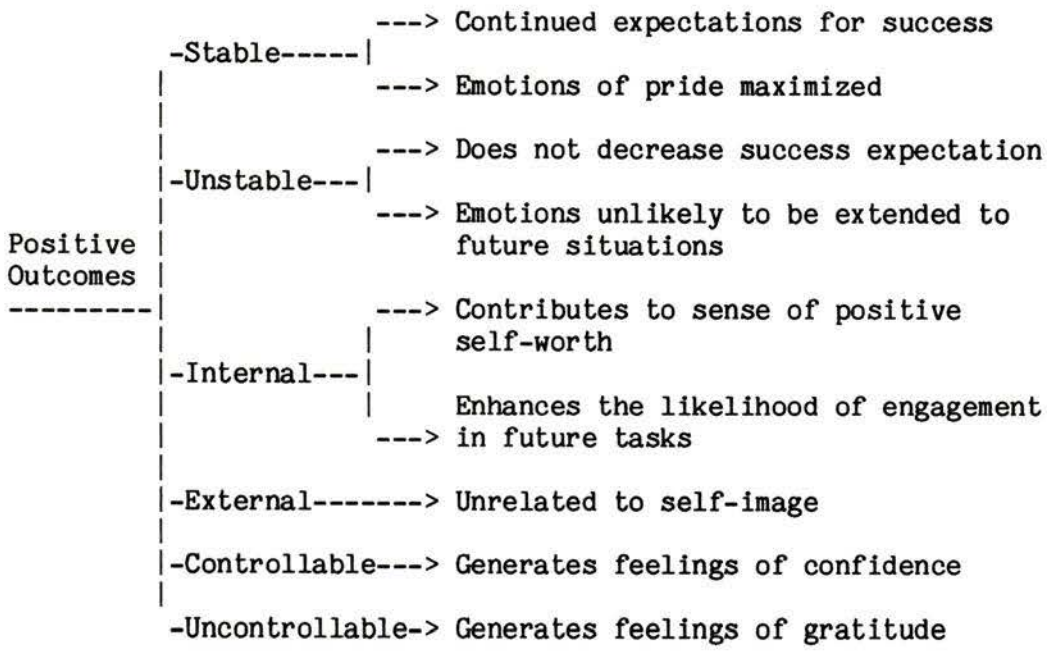
Guilt is considered to follow from acts that violate ethical norms, principles of justice or moral values, and is accompanied by feelings of personal responsibility. Guilt, therefore, is assumed to be elicited by controllable causes, such as a lack of effort toward an important goal (Weiner, 1985). Shame is frequently contrasted with guilt, although both involve negative self-evaluations that are painful, tense and depressing (Wicker, Payne, & Morgan, cited in Weiner, 1985). Weiner (1985) believes that one antecedent is an attribution for failure that is self-related and uncontrollable, such as ability. It has been documented that shame-related emotions give rise to withdrawal and motivation inhibition, whereas guilt-related emotions promote approach behavior, retribution, and motivational activation (Hoffman, 1982; Wicker et al., cited in Weiner, 1985).

There has been relatively little research with gratitude, but the evidence suggests that gratitude toward others is elicited only if the act of the benefactor was under volitional control and was intended to benefit the recipient (Weiner, 1985).

Figure 1 (Bell-Gredler, 1986) provides a useful summary of the hypothesized associations between the causal dimensions and affects, and the causal dimensions and expectations for both success and failure outcomes.

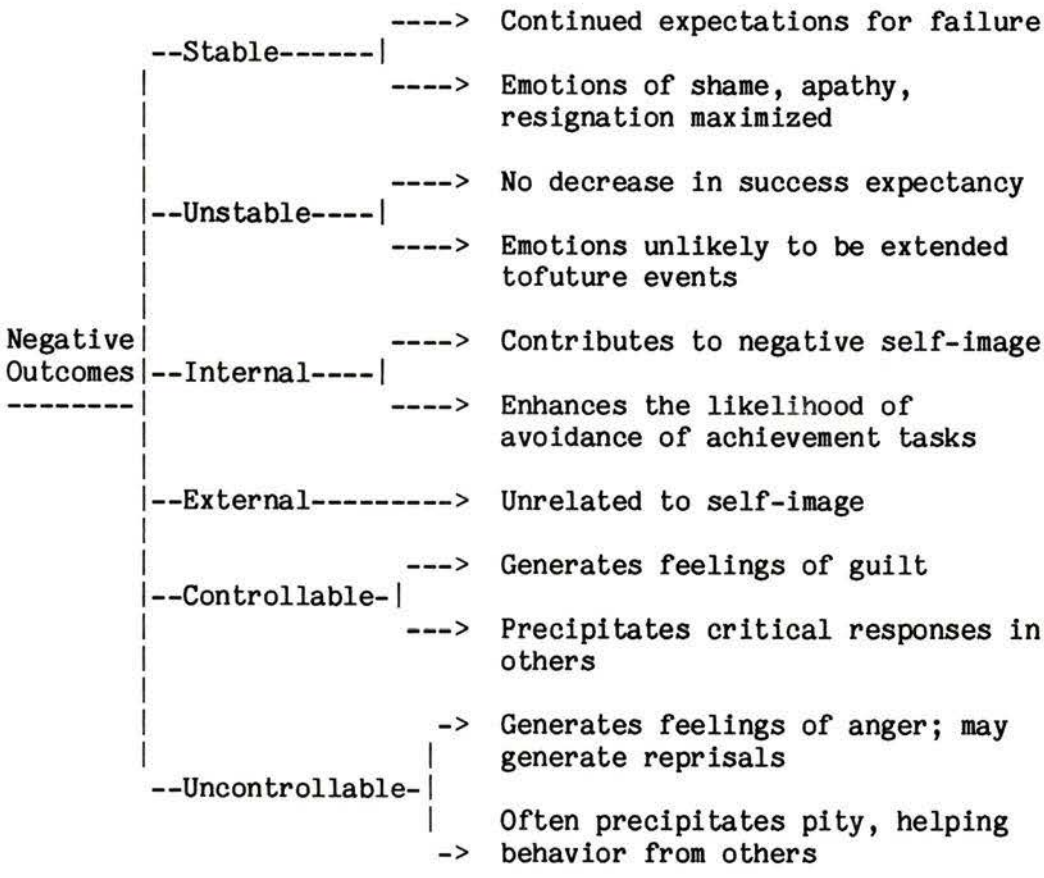
It is important to realize however, that the dimension-affect relationships are not necessaryily invariate. For example, one may not have put forth effort at something important, yet still be free from guilt. Or one may attribute success to help from others, yet not feel grateful. Furthermore,

Figure 1. The Theoretical Associations Between The Causal Dimensions, Affects, and Expectancy



(continued over)

Figure 1 (continued). The Theoretical Associations Between The Causal Dimensions, Affects, and Expectancy



(Note. From Learning and Instruction: Theory into Practice (p. 286) by M.E. Bell-Gredler, 1986, New York: McMillan).

an emotion may be experienced in the absence of its linked antecedent. For example, one may not be responsible for an outcome, but will experience guilt. Hence, the position being espoused is that the dimension-affect relations are not invariant, but are quite prevalent in our culture, and perhaps in many others as well. This position is similar to the argument that there is a linkage between frustration and aggression, although frustration elicits reactions other than aggression, and aggression has other antecedents in addition to frustration (Weiner, 1985).

Finally, Appendix 1 documents Weiner's (1985) example of a cognition-emotion scenario, involving a youth baseball player, in terms of his full model.

In summary, Weiner's model proposes that the three causal dimensions have independent and interacting effects upon affect and expectancy. Clearly all three dimensions must be investigated simultaneously and unambiguously if the relationship between attributions, expectations and affect is to be adequately understood.

Recent Empirical Research

Recent studies have shown that unitary causes (i.e., causal attributions) influence affective reactions to achievement outcomes. For example, McMillan and his colleagues (McMillan & Forsyth, 1983; McMillan & Spratt, 1983), and Milech and Nesdale (1984), reported partial support for Weiner's model, although

their results generally indicated that the achievement outcome was the most important determinant of affective reactions. McFarland and Ross (1982) examined affective reactions to performance on a fictitious social sensitivity test, manipulating subjects' performance and causal attributions (i.e., ability vs. task difficulty). Consistent with the findings reported by Weiner et al. (1978, 1979), ability attributions were found to be related to the experience of esteem-related affects (e.g., pride, confidence, and competence).

A number of recent studies have also indicated partial support for Weiner's (1985) position that causal structure (i.e., causal dimensions) has an important influence upon affective reactions to achievement outcomes. In a study of affective reactions to performance on a midterm examination, Forsyth and McMillan's (1981) findings were generally consistent with Weiners' model, and showed that more positive affective reactions were reported by students who (a) felt they controlled the causes of their performance, (b) attributed success to internal factors or failure to external factors, and (c) attributed their outcomes to factors that were stable, controllable, and internal. Expectations, however, were found to be related more to locus of causality and controllability than to stability.

Russell and McAuley (1986) carried out two studies to test Weiner's model. Study 1 involved a simulation-respondent format in an academic setting, and Study 2 an actual midterm

examination. Both studies employed Russell's (1982) CDS to place causal attributions into perceived dimensions. Their results were generally consistent with Weiner's model, and indicated causal dimensions to be predictive of affective reactions in both success and failure outcomes. The locus of causality dimension was consistently found to be the most influential of the three dimensions, and for several affects, the stability and/or controllability dimensions were also found to be significant. Their results indicated , however, that the relationships between causal dimensions and affective reactions are not as meaningful when tested in the context of an actual achievement. This finding is paralleled in the causal attribution-affect relationship research in actual achievement settings (e.g., Frieze, Fontaine & Synder, (cited in McMillan & Spratt, 1983; Bailey, Gladstone & Helm, 1975; and Arkin & Maruyanma, 1979). Russell and McAuley (1986) suggested that a restriction in the range of reported perceived causes may have lessened the impact of the causal dimensions on affective reactions, but they also concede that their findings may simply indicate that causal dimensions are less important determinants of affect in response to real achievement outcomes.

Smith and Krugel (1982) examining the locus of causality dimension only used data from a national probability sample to examine how causal explanations for a respondent's standard of living were related to affective reactions to quality of life.

Being generally consistent with Weiner's model, they found that internal attributions were associated with feelings of confidence, pride and satisfaction, whereas external attributions were associated with feelings of guilt, disappointment and frustration.

Although research studies concerning differences in attribution patterns as a function of gender have indicated that men and woman generally follow the same patterns (e.g., Iso-Ahola, 1979; Roberts, Kleiber, & Dudas, 1981; Russell & McAuley, 1986; Vallerand, 1987) there are data to suggest that gender differences exist in making attributions (Bar-Tal & Frieze, 1979; Feather, 1969; Murray & Medrick, 1975; Simon & Feather, 1973). Bar-Tal (1978) summarized these data by stating that there is a tendency for females to be more external and to employ more luck attributions than males, and that females, in general, rate their ability less highly than males, particularly in situations involving success.

To date, no data is available which has compared gender patterns in causal attribution/causal dimension-affect relationships.

Application of Weiner's Model to Sport Achievement Settings

(a) Attributional Research in Sport

Weiner's model of causal attributions has had a major impact on the study of attribution in sport. Weiner's theory, usually in the earlier 2 x 2 (locus x stability) model, has been applied

in competitive sport in both field and laboratory studies (e.g., McAuley, Russell & Gross, 1983; Rejeski & Lowe, 1980; Spinks & Roberts, 1980; Weinberg, Poteet, Morrow & Jackson, 1982; Williams, 1981), and in studies of team and individual attributions (e.g., Gill, 1980; Mark, Mutrie, Brooks, & Harris, 1984; Scanlan & Passer, 1980b).

The results, while not all in agreement have given some indication as to causal consistency. Individual sport athletes who won were more internal in their casual ascriptions than losers (Bukowski & Moore, 1980; Williams, 1981) as were team sport athletes (Brawley & Roberts, 1984). Using Russell's (1982) CDS, McAuley and Gross (1983) found winners in table tennis to give more internal reasons for their win. However, both winners and losers were more internal than external, stable than unstable, and controllable than uncontrollable. In contrast, Mark et al. (1984), using the CDS (Russell, 1982) with male and female squash and racketball players, found no difference between winners and losers in locus of causality (both groups gave internal reasons). They did support McAuley and Gross' findings that winners gave more stable and controllable attributions than losers.

The self-serving bias is also apparent in sport settings. In a review of the literature, Bird & Cripe (1986) concluded that almost all the investigations have demonstrated a tendency for sport participants to attribute success internally (for example, Bird & Brame, 1979; Scanlan & Passer, 1980b). However, no clear or consistent pattern appears to exist when attributing failure.

Several variables appear to mediate between losing and making attributions. For instance, the decisiveness of the outcome (Spink, 1978), whether a player's subjective evaluation of the outcome is consistent with the objective outcome (Spink, cited in Bird & Cripe, 1986) the degree of cohesion within the sport group (Bird, Foster & Maruyama, 1980), and whether the attribution is made in private or public (Rejeski & Brawley, 1983) can all influence the attributions made for failure outcomes. This is an area that still needs attention. It is particularly important to conduct further research aimed at understanding the factors influencing explanations of negative sport outcomes because those are the attributions that can have a detrimental effect on future motivation to participate in sport (Bird & Cripe, 1986).

When studying possible differences in gender, Iso-Ahola (1979), Mark et al. (1984), Roberts, Kleib & Dudas (1981), and Scanlan and Passer (1980a, 1980b) did not find any differences in attributional responses between males and females. However, there is evidence to suggest that gender stereotypes may exist in sport.

In the only investigation that has taken a developmental approach to the study of attributions within sport settings, Bird and Williams (1980) assessed observers ranging in age from 7 to 18 years. Their results indicated that as the youths got older, sex-role stereotypes for sport performance become more apparent. The younger children attributed outcomes for both boys and girls similarly. However, by age 13, sport outcomes for girls were attributed to the external factor of luck, whereas those same

outcomes for boys were ascribed to the internal factor of effort. Thus their findings indicated that by adolescence, boys are perceive themslves to be in control of their own achievement outcomes; girls are viewed as being at the mercy of the environment. It is also important to point out that these sex-role stereotypes were held equally by both boys and girls (Bird & Cripe, 1986).

However, other evidence suggests that when children are making judgments about their own performance, rather than the performance of others, this pattern does not always arise. For example, Iso-Ahola (1979) examined the sex-role stereotypes of fourth-grade boys and girls. He found no indication of differences in the attributions for own success or opponent's success as a function of gender. The differences between the Bird and Williams findings and those of Iso-Ahola indicate that attributions made by sport participants may not be identical to those made by observers.

Interestingly, the same study (Iso-Ahola, 1979) uncovered a provocative stereotype on the part of boys. When a boy lost to another boy, he would accept lack of personal ability as the cause. However, when a boy lost to a girl, he would not accept his lack of ability as the cause. It appears that boys may become self-protective after losing to a girl.

In sum, the research evidence provides a firm foundation on which to argue that the cognitions a person holds and the attributions a person uses to explain the causes underlying performance in sport have definite effects on emotion and

expectancy. However, the literature does indicate that attributional patterns may vary as a function of the self-serving bias, and gender of the performer.

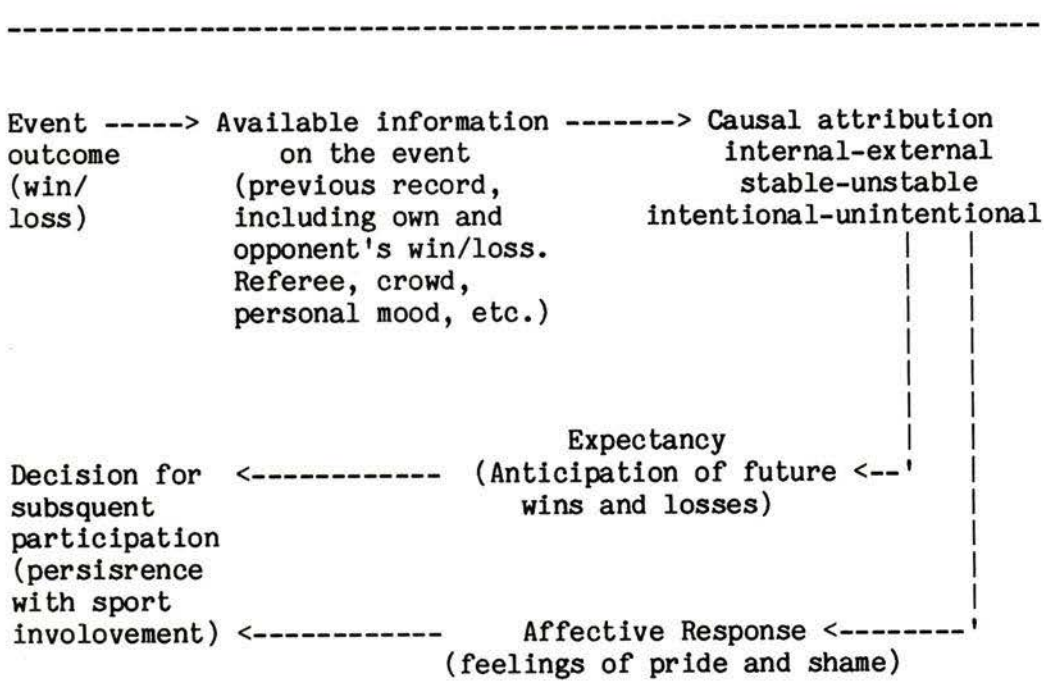
(b) Attribution-Affect and Expectancy Processes in Sport

Most empirical work in this area of sport study has tended to focus almost exclusively on attributions only; affective reactions and expectancy have played secondary roles. As Silva & Hardy (1984) and Vallerand (1984) have pointed out, this clearly is an area of sport study which requires empirical research.

Various authors (e.g., Biddle, 1984; Carron, 1984; Hill & Biddle, 1985; Rejeski & Brawley, 1983; Ryan, 1981; Vallerand, 1984; Weiner, 1981) have made theoretical applications of Weiner's model to the sport achievement setting. All of these authors agree that affective reactions to sport achievement outcomes and expectancy for future success play important roles in determining whether or not an individual persists with their sporting involvement. Carron (1984), has depicted the general attribution process in sport as that shown in Figure 2.

In applying Weiner's theory to the sport achievement setting, the attribution process depicted in Figure 2 suggests that an individual may progress through various cognition-emotion scenarios which may influence self-esteem, feelings towards others, inhibit or enhance motivation, and ultimately influence whether an individual withdraws from or persists with an activity. The following hypothetical scenario (adapted from

Figure 2. The Attribution Process in The Sport Achievement Setting



(Note. From Attributing causes to success and failure (p.12), by A.V. Carron, 1984, Australian Journal of Science and Medicine in Sport, 16, 2).

from Weiner, 1981, 1984), is an example of what may be experienced by a student upon completion of a physical education program:

(a) I just performed very poorly in that course. I will receive a very low grade. (This generates intense but fleeting feelings of being upset and frustrated).

(b) I performed in such a way because I do not have enough ability. (This is followed by feelings of incompetence and shame).

(c) There really is something lacking in me. (This is ensued by low self-esteem).

(d) What I lack I probably always will lack. (This produces low expectancy and a sense of hopelessness).

While various authors have attempted theoretical application of Weiner's model to the sport setting, in recent years there has also been a limited number of studies carried out on the attribution-affect and expectancy processes in sport achievement settings (e.g., Hill & Biddle, 1985; McAuley et al., 1983; Robinson & Howe, 1987; Vallerand, 1987).

Biddle and Hill (1985), for example, examined the link between attributions made for the causes of outcome (win/loss) amd subsequent emotional reactions in a two person sport competition. Twenty-four male and 22 female sports-active undergraduates competed in pairs of the same sex in a 30 second bicycle ergometer race in conditions where one's opponent's performance could not be monitored. Competitors were led to believe that outcome of the race was objectively determined by electronic measures, although in actuality the outcome was manipulated by the researcher.

The results showed that only one emotion experienced by winners (the general affect of satisfaction) was consistently linked to internal attributions inedpendently of perceived outcome importance. Other more specific emotions, such as pride, were linked to internal attributions only when the individual felt it important to win the contest. They found evidence of the self-serving bias, but also found that the intensity of the emotional feelings was linked almost exclusively to internal attributions for both winners and losers. In other words, when attribution/emotion relationships were examined the self-serving bias for winners (but not losers) held. Using Spink and Roberts' (1980) ideas on 'ambiguous' outcomes being associated with external attributions and 'clear' outcomes (satisfied winners, dissatisfied losers) being associated with internal attributions, Biddle and Hill suggest that performance with which the individual is dissatisfied tends to override objective outcome and force a nonself-serving bias in attributions.

McAuley et al. (1983) examined the relationships between causal dimensions and affective reactions to performance outcome in table tennis. After completion of a physical education skills class in table tennis, male and female undergraduates (N=62) participated in a competitive table tennis game against an ability matched opponent of the same sex. The CDS (Russell, 1982) was used to measure the student's causal attributions. Results showed that attribution processes were important determinants of affective reactions particularly for winners. However, in contrast to previous findings (Weiner et al., 1978,

1979) the locus of causality dimension was not found to be an important determinant of affect. Instead, the controllability dimension appeared to be the most influential causal dimension. Analyses also indicate no gender differences on any of the dependent variables.

Robinson and Howe (1987) studied causal dimension-affect relationships in a varsity soccer team involved in a national competition. The CDS (Russell, 1982) and the Profile of Mood States (McNair, Lorr & Droppleman, 1977) were employed to assess attributional inferences and mood profiles over a crucial three game period. Correlational analyses for both (a) personal perceived performance, and (b) team win/loss outcome, and the affective reactions indicated controllability to be the dimension most clearly related to emotional reactions, with stability and locus being less affectively involving. These findings paralled those of McAuley et al. (1983).

McAuley et al. (1983) and Robinson and Howe (1987) attempted to explain why the control dimension was found to be a more salient affective mediator than locus of causality in sport achievement settings. They contended that the importance of the control dimension in mediating affective responses may be increased in highly important achievement situation such as found in failure/elimination sport competition. Furthermore, the study of Robinson and Howe focused on athletes in an ongoing competitive situation, in which failure meant elimination from the seasons' most prestigious and important competition. Also, as McAuley et al. (1983) suggested, the sport achievement setting

explicitly involves observable interpersonal competition (and hence greater ego involvement) which does not normally exist in the academic setting. Thus, both the failure/elimination context and the interpersonal nature of competition of many sport settings may lead individuals to be more aware of the importance of effort and perceived control in determining their success.

In line with various cognitive theories of emotion, Vallerand (1984, 1987) has proposed an intuitive-reflective appraisal model for general and self-related types of affects in achievement situations. Vallerand's model is theoretically similar to that of Weiner's (Vallerand, 1987). However, while Weiner (1985) proposes that in achievement situations the outcome produces general type affects and attributions have an impact on self-related affects, Vallerand's model, on the other hand, posits that the intuitive (or primary) appraisal of performance has important effects on both general and self-related affects. This model also posits that attributional processes may not always be involved in the emotion process, but that when operative, attributions may affect both types of emotion. In further contrast to Weiner's model, Vallerand proposes that several types of reflective appraisals in addition to attributional processes may have causal effects on affects.

Vallerand (1987) carried out two studies to examine the antecedents of affect in achievement settings. Study 1 was conducted with 93 male and female athletes (mean age 15.9 years) of 10 high school basketball teams who were participating in provincial tournaments. Study 2 was a laboratory study involving

46 male undergraduate students (mean age 19.6 years). In the latter study, subjects were randomly assigned to conditions of success and failure, and performed on a computer game requiring motor and visual coordination. The CDS (Russell, 1982) was employed to measure the dimensionality of perceived causes in Study 2.

Results of these studies indicated that both the intuitive (performance outcome) and reflective (attributional) appraisal processes had important effects on general and self-related types of affects. The results also underscored the fundamental importance of the intuitive performance appraisal for both positive and negative self-related affects. These results parallel recent findings research conducted in the realm of education (e.g., Arkin and Maruyana, 1979; Bailey et al.; 1975; Forsyth and McMillan, 1981; McMillan and Forsyth, 1983; McMillan and Spratt, 1983) which revealed that the intuitive performance appraisal in the form of performance outcome is the main predictor of affect.

In Study 1, the locus of causality dimension was shown to serve the purpose of augmenting the effects of the intuitive performance appraisal on both general and self-related affects, particularly in the success condition. In Study 2, however, it was found that internal attributions may not play a crucial role in the emotion process, especially if the other causal dimensions of stability and control are assessed. It was interesting to note

note that the effect of the 'perceived outcome x stability' interaction took place in the perceived success condition, whereas the 'perceived outcome x controllability' interaction occured mainly in the perceived failure condition. Vallerand (1987) therefore, suggested that certain causal dimensions play a larger role in the generation of affect in some situations than in others (i.e., success/failure).

(c) Youth Sport Settings and Weiner's Model

With the exception of Vallerand (Study 1, 1987), those studies which have examined attribution-affect and expectancy relationships in sport achievement settings (e.g., Hill & Biddle, 1985; McAuley et al., 1983; Robinson & Howe, 1987) have focused exclusively on adult populations. Both theoretical and practical considerations, however, indicate the need for an attribution-affect analyses of youth sport involvement.

Evidence shows that the achievement domain of sport is a very important achievement arena for children. Indeed, Veroff (1969) suggested that comparing themselves in sporting activities may be 'the' domain in which young boys utilize social comparison processes in order to determine their standing among peers and thereby determine their self-worth. Furthermore, Dudas (cited in Roberts, 1984) in assessing the perceptions of high school boys and girls relative to their preferred domains of achievement, found that boys preferred to succeed in sport rather than in classroom settings. Girls, with the exception of individual competitive sport, also preferred to succeed in sport than in

classroom contexts. Also, boys indicated that failure in academics was less aversive than failure in sports. Girls, on the other hand, reported that failure in sport was less aversive than academic failure. Clearly, both boys and girls view the achievement domain of sport as an important arena in which to engage.

However, an obvious paradox exists with regard to youth sport involvement (Roberts, 1984). The number of children participating in organized sport is increasing yearly. More than 2.5 million children between the ages of 6-16 participate in organized sport in the U.S. and Canada (Smith, Smith & Smoll, 1983). Yet, available statistics indicate that a staggering 80% of all children involved in organized sport at all levels drop out between ages 12 to 17, (Seefeld et al., cited in Roberts, 1984). The phenomenon of youth sport dropout is currently of major concern to both sport psychologists and youth sport practitioners, and deserving of in depth enquirery.

As reported earlier, Weiner (1985) considered that a relatively minor number of causes are employed by individuals to explain success and failure outcomes in achievement settings, and of these ability and effort are the most prevalent. Nichols (1984) has shown, however, that prior to the age of 12-13 years, children do not clearly differentiate conceptually between ability and effort. In considering this data, Roberts (1984) has proposed an explanation of why after age 12 children begin to drop out of sport at such dramatic rates. Children younger than this fail to recognize whether their ability is sufficient to

succeed at an activity; they believe effort is the most important determinant of success. But after age 12, children have the necessary developmental capacity to deduce whether their ability is too low. And since, as evidence shows (Duda, 1981), the achievement domain of sport is a very important achievement arena for children, the perception of low ability may act as a catalyst for withdrawing from sport involvement. Dweck (1980) and Biddle (1984) have made similar theoretical applications of attribution theory to explain learned helplessness in young children in sport settings.

In applying Weiner's model to achievement situations such as the school sports program, participants are assumed to progress through various cognition-emotion scenarios which may positively or negatively affect self-esteem and feelings toward others, enhance or inhibit levels of motivation, and ultimately help to determine whether an individual persists with or withdraws from an activity. In this light, Weiner's model provides a useful theoretical framework with which to examine the phenomenon of youth sport involvement, research on which to date has been rather limited and of a primarily descriptive nature (Gould, 1984; Roberts, 1984).

Summary

Weiner (1982a, 1985) has proposed an attributional theory of motivation and emotion in achievement settings. This model has been widely embraced in the educational and sport research

fields, and has received fairly strong empirical support. Most empirical work in the area of sport, however, has focused almost exclusively on attributions only, and a clear need exists for research into the attribution-affect and expectancy relationships which may operate in sport achievement settings.

Furthermore, the limited amount of reserach which has been conducted on these relationships has focused almost exclusively on adult populations. This fact, coupled with the dramatic sport dropout rate which exists amongst young people, suggests that in terms of sport research, an assessment of Weiner's full model would be most usefully fulfilled by the study of early-adolescents in a sport achievement setting.

CHAPTER 3

RESEARCH METHOD

As outlined in Chapter 1, the intent of this study was to assess the applicability of Weiner's attributional theory of achievement motivation and emotion to the youth sport achievement setting. To make this possible the following methods were employed.

Subjects

The subjects (N=746) were 351 male and 395 female grade 8 and 9 students from three high schools in School District #61 (Greater Victoria). These schools were demographically representative of the schools within this district. Table 4 shows the subjects grouped by school, age, and gender. The original number of subjects surveyed totalled 781, but 35 (4.48%) of the returns were discarded because of respondent error (i.e., missing data, double responding).

Mean ages were 14.10 years (S.D. .86) and 13.95 years (S.D. .83) for the male and female subjects, respectively. All subjects participated in a six-week competitive team sport program within the physical education program. The numbers involved in each sport are shown in Table 5.

Table 4

Subjects Grouped by School, Grade, and Gender

School	Grade 8		Grade 9		
	Male	Female	Male	Female	Total
1	67	63	64	46	240
2	43	76	89	101	308
3	88	110	0	0	198
Total	198	249	153	146	746

Note. Male N=351, female N=395

Table 5

Subjects Grouped By Competitive Team Sport Programs

Sport	Male	Female	Total N
Basketball	40	201	241
Volleyball	0	43	43
Soccer	10	104	114
Rugby	301	0	301
Field Hockey	0	47	47
Total	351	395	746

The Nature of the Sport Programs

The number of schools surveyed was kept to a small number in order to limit the across-school program variability. To further ensure program consistency, the physical education staff of the three schools agreed to structure the programs in which subjects were to be assessed in the following manner. The 'fitness' component made up 30% of a program, 'skills and game situations' 40%, 'concepts' (knowledge of laws and rules, technique, positional and team play) 15%, and 'affective objectives' (sportmanship, cooperation, appropriate participation) 15%.

Contact with Schools and Subjects

In June, 1987, introductory letters (Appendix 2) were sent to the principals of the three schools. This letter provided a brief outline of the nature and purpose of the proposed study, and requested permission to use the school's grade 8 and 9 students as subjects. Subsequent to consent, the researcher met with each of the departmental heads to discuss in detail the nature and purpose of the study, to seek agreement on program

structure, to outline the testing procedure, and to arrange testing dates. Letters of parental consent (Appendix 3) were provided which were sent out to parents by the school approximately two weeks prior to testing.

Administration of the Questionnaire

Since the perceived performance item (Appendix 5b) was intended to assess an individual's subjective appraisal of his or her own level of achievement in the sport program, all subjects were tested prior to receiving the Physical Education department's formal course grade.

All testing occured on the last class of the six-week program. The testing dates were as follows:

School 1. November 9, 10, 13, 1988,

School 2. November 12, 1988,

School 3. November 6, 10, 1988.

The researcher administered all questionnaires, with the exception of School 1. on November 10, when an overlap occured in the testing schedule between schools 1. and 3. On that date, a graduate student from the School of Physical Education at the University of Victoria administered the questionnaire in one of the schools. Prior to testing, the tester was instructed in the nature and purpose of the study, and familiarized with the questionnaire. In total 26 classes were tested; each testing session lasted approximately 45 minutes. All testing took place

in the school gymnasium. The following standardized testing procedure was used.

The researcher briefly introduced himself as a researcher from the School of Physical Education at the University of Victoria, made a brief statement on the nature and purpose of the study, gave an assurance of confidentiality, and stressed the need for accuracy and honesty in completing the questionnaire. Appendix 4 provides an outline of these introductory comments. The 1-to-7 response scale was explained, subjects were asked to complete the questionnaire without discussion or conference with others. Subjects were then instructed to carefully read the frontpage of the questionnaire (Appendix 5a), which further emphasized the need for accuracy and honesty.

During completion of the questionnaire the researcher was at hand to provide clarification when requested. Upon completion, subjects were instructed to re-check the accuracy and honesty of each of their responses.

The Questionnaire (Appendix 5)

The Physical Education Questionnaire was comprised of the following four sections. All questions were scored on a 7-point Likert-type scale.

Section 1. Personal Performance

This section dealt with perceived personal performance, and used a procedure similar to those of Forsyth and McMillan

(1981), Russell and McAuley (1986) and Vallerand (1987) (see Appendix 5b). Subjects responded by circling the appropriate number, with 1 representing 'very poor' and 7 representing 'very successful'.

Section 2. Causes for Your Personal Performance

This section was comprised of the Causal Dimension Scale (CDS) (Russell, 1982) (see Appendix 5c). This measure was designed to assess how the respondent perceives the cause of an achievement outcome in terms of the locus of causality, stability, and controllability dimensions as described by Weiner (1979).

Subjects completed the instrument's nine semantic differential scales, with three scales assessing each causal dimension. For conceptual ease, Russell's (1982) original 1-to-9 score range was reduced to a 1-to-7 range.

Section 3. Feelings Associated With Your Performance in The Physical Education Course

This section was comprised of ten affective reactions (see Table 6), and was designed to assess the magnitude of the affective reactions (of the general, self-related , and other-related types) generated by the subject's subjective appraisal of his or her own performance and the perceived causes for this performance. Subjects indicated the magnitude of their feelings on each of ten 7-point scales, on which gradations were identified by four verbal labels (e.g., very incompetent,

Table 6

The Affective Reactions

General Affects	Self-Related Affects	Other-Related Affects
Unhappy-Happy	Ashamed-Proud	Angry-Thankful
Dissatisfied-Satisfied	Incompetent-Competent	Ungrateful-Grateful
Depressed-Elated	Unconfident-Confident	Hostile-Helpful
	Guilty-Guiltless	

somewhat incompetent, somewhat competent, very competent) (see Appendix 5d).

The affects used in this study were drawn from those which Weiner et al.; (1978, 1979) found to be salient to success or failure, or relevant to the attributional dimensions.

Section 4. Expectations for the Future

This section was designed to measure the subjects expectations for future achievement in activities similiar to the physical education program just recently completed (see Appendix 5e). Subjects responded on a 1 (very poor) to 7 (very successful) scale.

Development of The Questionnaire

In April, 1987, a pilot study was carried out to assess the conceptual clarity of the Physical Education Questionnaire. The pilot sample (N=90) consisted of 43 male and 44 female grade 8-9 students from a junior high school in School District #61 (Greater Victoria). Their mean age was 14.61 years (S.D. .85).

The same standardized testing procedure as previously described was employed. In total three classes of students were tested. In completing the questionnaire students were instructed to indicate (by marking with a bold 'underline' and a '?' symbol beside it) any word, sentence, phrase, paragraph, or aspect of the answering procedure, which proved difficult to understand. The original Physical Education Questionnaire is shown in Appendix 6.

Table 7 documents the number of students who encountered a problem for each section of the original questionnaire. These findings indicated the questionnaire to be conceptually clear in each of its sections. Minor additions were made, however, to the introductory front page. These included (a) questions designed to gain personal information (name, gender, age, activity), and (b) comments concerning confidentiality. Also, following a reassessment of the study's purposes, the surprise affects (surprise and astonishment) were excluded from the amended ,and final, version of the questionnaire (Appendix 5).

Table 7

The Number of Students Experiencing Difficulty in Understanding the Original Physical Education Questionnaire

Section	Number Experiencing Difficulty in Understanding
1. Personal Performance	0
2. Causes for Personal Performance:	
2a and 2b	2
2b	1
CDS item 4.	1
CDS item 5.	2
CDS item 6.	1
CDS item 7.	2
3. Feelings Associated with Your Performance:	
item 8.(elated)	1
4. Expectancy	0

Note. Total pilot sample N=90.

Development, Reliability, and Validity of the Causal Dimension Scale

In generating the set of items for the CDS, and in carrying out reliability and validity tests of these items, Russell (1982) conducted two studies. These studies employed 189 (72 male, 117 female) and 99 (61 male, 38 female) undergraduate students, respectively. Russell used a 2x2x2x2x2 factorial design, with the factors being gender, outcome, locus of causality, stability and controllability of the attributions. The eight different attributions used to manipulate the causal dimensions are shown in Table 1.

Russell (1982) reported adequate levels of internal consistency for the three subscales, with coefficient alphas of .87, .84 and .73 for locus, stability and controllability, respectively. Validity for the scale was indicated by the finding that the subscales differentiated between causal attributions that theoretically formed the end-points of each of the causal dimensions.

Discriminant validity was demonstrated by the fact that the items designed to assess a particular dimension did not account for important amounts of variances in the other two dimensions. The locus main effect accounted for 50-54% of the variance in the three locus items, while very little of the variance was explained by stability (0%) or controllability (0-1%). The stability main effect accounted for 14-19 % of the variance in the three stability items, while very little of the variance was explained by locus (2-8%) and controllability

(0-2%). The controllability main effect accounted for 14-26% of the variance in the three controllability items, while very little of the variance was explained by locus (0-4%) and stability (1-3%). All three causal dimensions, therefore, appeared to be adequately assessed by the final nine-item measure (Russell, 1982).

More recent research has supported the construct validity of the CDS. Russell et al. (1985) found, as would be predicted from Weiner's model, that ratings of controllability predicted how the achievement performance of a student was evaluated by another person. Russell and McAuley (1986) also found that ratings on the causal dimension scores predicted affective reactions to academic (exam) performance. McAuley, Russell and Gross (1983) also found that ratings on the CDS predicted affective reactions to table tennis performance, and Robinson and Howe (1987) found the same for varsity soccer performance.

Statistical Analyses

Correlational, or nonexperimental, research of this type has traditionally employed a factorial design to assess the relationship between variables (e.g., Berstein, Stephan, & Davis, 1979; Forsyth and McMillan, 1981). However, such an approach has been shown to run the risk of breaking underlying assumptions when attribute variables are used in orthogonal designs (Tupper and Rosenblood, 1984), and unequal cell frequencies create nonorthogonality (Spinner and Gabriel, 1981).

The use of a factorial design in this study was, therefore, rejected in favour of the following approach:

A. Preliminary analyses were conducted, employing Hotelling's T^2 tests, to assess the relationship of (a) gender and (b) perceived performance, to all other variables.

B. Based on the findings of these analyses, four gender/perceived performance conditions were formed: male/success, female/success, male/failure, and female/failure. For each condition the following analyses were conducted:

   1. Canonical correlation, to determine the nature and extent to which the set of appraisal variables were associated with the set of affective reactions,

   2. Standard multiple regressions, using the group of appraisal variables as predictors and composite scores for each of the general, self-related, and other-related affect categories as criterion variables, and

   3. Hotelling's T^2 tests, employing median split to dichotomize subjects on each of the causal dimension into high versus low groupings, to determine whether mean difference existed between (i) internal versus external groups, (ii) stable versus unstable groups, and (iii) controllable versus uncontrollable groups, on each of the affective reactions and on expectancy.

The findings of analyses (2) and (3) would indicate the extent to which each of the appraisal variables were

associated with (a) the affective reactions, and (b) expectancy for future achievement.

Chapter 4

Results

The purpose of the study was to determine the nature and extent to which the appraisal variables of perceived performance, locus of causality, stability and controllability were associated with (a) the affective reactions of general (GA), self- related (SRA), and other-related (ORA) types, and (b) EXPECTANCY for future achievement, for males and females in a youth sport achievement setting.

A. Preliminary Analyses

1. Internal Consistency of the Causal Dimension Scale

Cronbach alphas were conducted on the items forming the CDS. Results showed that the locus of causality, stability and controllability subscales had values of .66 , .65 , and .54 respectively.

2. Gender Differences

A Hotelling's T^2 test, employing SPSSX MANOVA, was conducted using gender as the IV and all other measures as the set of DVs. A significant difference was found between the groups on the combined DVs, $F=1.99$, $df=15/730$, $p<.005$.

At the univariate level, males were found to perceive themselves as having performed more successfully ($p<.01$), to be

significantly more proud ($p<.05$), more competent ($p<.01$), more elated ($p<.05$), and to have a significantly greater EXPECTANCY ($p<.01$) than females. Table 8 summarizes these finding. All comparisons which are not shown in Table 8 were not significant. This point applies to all tables reported in this chapter.

It should be noted that since the univariate analyses involved multiple F tests, the danger existed of increasing the alpha error. This caution applies to subsequent Hotelling's T^2 analyses.

3. Perceived Performance: Perceived Success versus Perceived Failure Conditions

(i) Perceived Performance Versus Perceived Failure (Full Group Analysis)

On the basis of their responses to the perceived performance item, subjects were divided at the median into Perceived Success versus Perceived Failure groups.

A Hotelling's T^2 test was carried out using perceived performance as the IV (consisting of Perceived Success and Perceived Failure groupings) and all other measures as the set of DVs. A significant difference was found between the groups on the combined DVs, $F=22.47$, $df=15/730$, $p<.001$. This accounted for 29.47% of the variance.

At the univariate level, the Perceived Success group was found to score significantly higher ($p<.001$) than the Perceived Failure group on internality, stability, and controllability, on all of the affect measures, and on EXPECTANCY. Table 9 summarizes these findings.

Table 8

Results of Univariate Analyses for Significant Gender Differences

Variable	Mean	S.D.	M.S. Between	M.S. Error	F	df	p
Performance	5.11a	1.20	10.22	1.31	7.58	1,744	<.01
	4.87b	1.13					
Depressed-Elated	4.91	1.37	9.67	1.82	5.31	1,744	<.05
	4.68	1.20					
Ashamed-Proud	4.90	1.25	9.59	1.50	6.41	1,744	<.05
	4.68	1.24					
Incompetent-Competent	5.17	1.37	11.98	1.82	7.07	1,744	<.01
	4.91	1.24					
Expectancy	5.38	1.28	10.70	1.49	7.21	1,744	<.01
	5.14	1.16					

Note. The greater the mean, the more positive the affective response.

'a' denotes the male group (n=351)
'b' denotes the female group (n=395)

Table 9

Results of Univariate Analyses for Perceived Success Versus Perceived Failure Conditions on All Measures

Variable	Means	S.D.	M.S. Between	M.S. Error	F	df	p
Controllability	12.56a 14.65a	4.20 3.68	815.55	15.59	52.31	1,744	<.001
Internality	13.74 15.11	3.72 3.87	350.03	14.43	24.25	1,744	<.001
Stability	10.98 12.85	4.31 4.52	479.36	18.74	25.57	1,744	<.001
Unsatisfied-Satisfied	4.22 5.34	1.46 1.37	235.37	2.01	117.04	1,744	<.001
Unhappy-Happy	4.39 5.32	1.24 1.25	162.35	1.62	100.48	1,744	<.001
Depressed-Elated	4.30 5.29	1.27 1.25	183.51	1.59	115.52	1,744	<.001
Unconfident-Confident	4.33 5.39	1.34 1.32	203.89	1.77	115.05	1,744	<.001
Ashamed-Proud	4.33 5.23	1.08 1.20	151.34	1.30	115.90	1,744	<.001

(continued over)

Table 9 (continued)

Results of Univariate Analyses for Perceived Success Versus Perceived Failure Conditions on All Measures

Variable	Mean	S.D.	M.S. Between	M.S. Error	F	df	p
Incompetent-Competent	4.54a	1.23	182.52	1.46	124.61	1,744	<.001
	5.53b	1.86					
Guilty-Guiltless	4.64	1.40	154.96	1.79	86.68	1,744	<.001
	5.55	1.27					
Angry-Thankful	4.34	1.18	40.11	1.49	26.93	1,744	<.001
	4.80	1.26					
Ungrateful-Grateful	4.39	1.16	108.88	1.38	78.88	1.744	<.001
	5.15	1.19					
Hostile-Helpful	4.55	1.15	21.62	1.55	13.94	1,744	<.001
	4.90	1.37					
Expectancy	4.74	1.28	95.61	1.28	158.18	1,744	<.001
	5.77	.92					

Note. The greater the mean, the more positive the affective response.

'a' denotes the perceived failure group (n=373)
'b' denotes the perceived success group (n=373)

(ii) Male/Perceived Success versus Male/Perceived Failure

The male subjects were divided at the median into Perceived Success versus Perceived Failure groups. A Hotelling's T^2 test was performed to test for differences between these groups. A significant difference was found between the groups on the combined DVs, $F=11.22$, $df=14/336$, $p<.001$. This accounted for 32% of the variance.

At the univariate level, the Perceived Success group was found to score significantly higher than the Perceived Failure group on internality, stability, and controllability, on all of the affect measures, and on EXPECTANCY. All differences were significant at $p<.001$, except for stability ($p<.05$), and hostility ($p<.05$). Table 10 summarizes these findings.

(iii) Female/Perceived Success versus Female/Perceived Failure

The female subjects were divided at the median into Perceived Success versus Perceived Failure groups. A Hotelling's T^2 test was performed to test for differences between these groups. A significant difference was found between the groups on the combined DVs, $F=12.67$, $df=14/380$, $p<.001$. This accounted for 32% of the variance.

At the univariate level, the Perceived Success group was found to score significantly ($p<.001$) higher than the Perceived Failure group on the internality, stability, and controllability, on all affective measures, and on EXPECTANCY. Table 11 summarizes these findings.

Table 10

Results of Univariate Analyses for Male/Perceived Success Versus Male/Perceived Failure Groups on All Measures

Variable	Mean	S.D.	M.S. Between	M.S. Error	F	df	p
Internality	13.55a	3.90	260.85	15.10	17.28	1,349	<.05
	15.27b	3.87					
Stability	11.11	4.03	114.32	18.20	6.28	1,349	<.001
	12.26	4.49					
Controll-ability	12.50	4.00	496.15	14.44	34.35	1,349	<.001
	14.88	3.59					
Unsatisfied Satisfied	4.21	1.55	139.35	2.14	65.10	1,349	<.001
	5.47	1.37					
Unhappy-Happy	4.39	1.25	100.77	1.58	63.76	1,349	<.001
	5,47	1.26					
Depressed-Elated	4.38	1.26	99.72	1.58	63.76	1,349	<.001
	5.44	1.26					
Unconfident-Confident	4.41	1.46	99.69	1.87	53.19	1,349	<.001
	5.47	1.27					

(continued over)

Table 10 (continued)

Results of Univariate Analysis for Male/Perceived Success Versus Male/Perceived Failure Groups on All Measures

Variable	Mean	S.D.	M.S. Between	M.S. Error	F	df	p
Ashamed-Proud	4.29a	1.09	78.59	1.34	58.85	1,349	<.001
	5.38b	1.22					
Incompetent-Competent	4.65	1.33	92.14	1.61	57.19	1,349	<.001
	5.68	1.20					
Guilty-Guiltless	4.71	1.43	75.53	1.95	38.64	1,349	<.001
	5.64	1.36					
Angry-Thankful	4.24	1.19	23.85	1.53	15.59	1,349	<.001
	4.76	1.28					
Ungrateful-Grateful	4.31	1.18	85.46	1.50	57.05	1,349	<.001
	5.30	1.26					
Hostile-Helpful	4.48	1.19	11.42	1.72	6.63	1,349	<.05
	4.84	1.42					
Expectancy	4.87	1.41	89.88	1.40	64.42	1,349	<.001
	5.87	.89					

Note. The greater the mean, the more positive the affective response.
'a' denotes the male/perceived failure group (n=175)
'b' denotes the male/perceived success group (n=176)

Table 11

Results of Univariate Analysis for Female/Perceived Success Versus Female/Perceived Failure Groups on All Measures

Variable	Means	S.D.	M.S. Between	M.S. Error	F	df	p
Internality	13.80a	3.59	157.68	13.73	11.48	1,393	<.001
	15.06b	3.82					
Stability	10.85	4.23	409.39	19.20	21.33	1,393	<.001
	12.88	4.53					
Controllability	12.39	4.40	511.45	16.19	31.59	1,393	<.001
	14.67	3.62					
Unsatisfied-Satisfied	4.13	1.36	138.95	1.79	77.61	1,393	<.001
	5.32	1.32					
Unhappy-Happy	4.29	1.23	95.49	1.56	61.26	1,393	<.001
	5.28	1.27					
Depressed-Elated	4.11	1.24	128.53	1.46	87.86	1,393	<.001
	5.25	1.18					
Unconfident-Confident	4.29	1.27	92.57	1.71	54.20	1,393	<.001
	5.26	1.34					
Ashamed-Proud	4.20	1.05	87.89	1.22	71.87	1,393	<.001
	5.15	1.16					

(continued over)

Table 11 (continued)

Results of Univariate Analyses for Female/Perceived Success Versus Female/Perceived Failure Groups on All Measures

Variable	Mean	S.D.	M.S. Between	M.S. Error	F	df	p
Incompetent-Competent	4.54a	1.15	83.02	1.33	62.40	1,393	<.001
	5.37b	1.15					
Guilty-Guiltless	4.49	1.35	112.69	1.55	72.59	1,393	<.001
	5.57	1.14					
Angry-Thankful	4.34	1.07	34.28	1.41	24.35	1,393	<.001
	4.93	1.30					
Ungrateful-Grateful	4.42	1.06	39.09	1.24	31.51	1,393	<.001
	5.05	1.16					
Hostile-Helpful	4.51	1.08	30.75	1.35	22.83	1,393	<.001
	5.07	1.23					
Expectancy	4.73	1.11	67.97	1.17	58.06	1,393	<.001
	5.56	1.05					

Note. The greater the mean, the more positive the affective response.

'a' denotes the female/perceived failure group (n=197)
'b' denotes the Female/perceived success group (n=198)

Based upon the preliminary findings, further analyses were performed separately for each of the male and female Perceived Success and Perceived Failure conditions. Such analyses would contribute useful insights into the general question of gender patterns in causal dimension-affect and causal dimension-expectancy relationships in secondary school students.

B. Causal Dimension-Affect and Causal Dimension-Expectancy Relationships

To determine gender patterns in causal dimension-affect and causal dimension-expectancy relationships, the following gender/perceived performance conditions were examined: 1. male/success, 2. female/success, 3. male/failure, and 4. female/failure.

For each condition, the following set of analysis was employed.

Analysis 1. Canonical Correlation

A canonical correlation, employing the SAS statistical routine, was carried out to determine the nature and extent of the relationship between the set of appraisal variables (perceived performance, controllability, locus of causality, stability), and the set of affective reactions ((GAs, SRAs, and ORAs).

Canonical Correlation analysis generates pairs of linear combinations of variables, one linear combination from each of the two sets. These linear combinations of variables are called canonical variates.

The first pair of canonical variates maximizes the correlation between a linear combination of one set and a linear combination of the other. A second pair of canonical variates is uncorrelated with the first pair and maximizes the correlation between linear combinations of variables after the variance due to the first pair of canonical variates has been removed (Tabachnick and Fidell, 1983, p. 146). Each pair of canonical variates is interpreted as a pair, with each variate representing a dimension of the IVs that is highly correlated with a dimension of the DVs (Tabachick and Fidell, 1983, p. 159).

Such an analysis would indicate the nature of the association between the set of appraisal variables and the set of affective reactions. Furthermore, the total accounted-for variance (canonical correlation squared (Rc squared)), and the canonical redundancy analysis (which examined how well the original affect variables can be predicted from the canonical variate of the appraisal variables) would together indicate the extent of the association between the two sets of variables.

Analyses 2. Standard Multiple Regression

Standard multiple regressions, employing SPSSX Regression, were carried out using the perceived performance, locus of causality, controllability and stability scores as the predictor variables, and composite scores for each of the GA, SRA, and ORA affect categories separately as criterion variables.

In calculating the composite affect scores there were two major points of consideration. First, Weiner's (1982a, 1985) theory does not suggest the need for ranking the relative importance of each of the affects within a given category. Second, Cronbach alphas were calculated for the three affect categories for both the pilot data (N=90, males=43, females=47) and the study data (N=746, males=351, females=395). The results of both analyses showed each of the GA, SRA, and ORA categories to be relatively homogeneous in content,with alpha values of .81, .74, and .71, respectively, for the pilot data, and .83, .80, and .73, respectively, for the study data. Composite scores for all three categories, therefore, were obtained by summing affect scores within a particular category and dividing by the number of affects within that category.

The significance of the F for the full regression equation, and the total accounted-for variance, indicated the extent to which the full set of appraisal variables were associated with the affect category. Following this, an assessment of the size of the beta weights (and their level of significance) in each

equation, indicated the extent to which each of the appraisal variables were associated with the affect category (Tabachnick and Fidell, 1983).

Analysis 3. Hotelling's T^2 Tests

Finally, for each of the causal dimension scores subjects were divided at the median into low versus high groups. The locus of causality dimension scores formed two groups of internal (high scores) and external (low scores). The controllability dimension scores similarly formed two groups of controllable (high scores) and uncontrollable (low scores), and the stability dimension scores formed two groups of stable (high scores) and unstable (low scores). Hotelling's T^2 tests were then carried out using each of the causal dimensions scores as the IV (consisting of high and low groups) and the ten affective reactions scores and the expectancy score as the set of DVs.

Such analyses, in examining each dimension independently, indicated whether significant mean differences existed between the dimension groupings (internal versus external; controllable versus uncontrollable; stable versus unstable) on the set of combined DVs. Subsequent univariate analyses indicated whether significant mean differences existed between the dimension groupings on each of the DVs.

Condition 1. Male/Perceived Success

Analysis 1. Canonical Correlation

The results showed a significant relationship between the set of appraisal variables and the set of affects. Although all sets of variates were involved in the overall discrimination, only the first showed interpretable loadings. Table 12 summarizes the results of the analysis.

The result indicated that the first pair of canonical variates yielded a moderate positive correlation (Rc=.55, F=7.09, $p<.0001$. However, although this relationship was shown to be significant, the accounted-for variance of 30% indicated there to be only a moderate degree of association between these two sets of variables.

The direct interpretation of canonical variates is difficult because of the moderate-to-high intercorrelations involved in the set of affects (Appendix 7a reports the means and S.D.s for each variable, and the correlations within each set of variables). Matrices of correlations between the original variables and the canonical variates are often interpreted instead (Tabachnick and Fidell, 1983, p. 155). It is these correlations which are referred to in discussions throughout this chapter.

Table 13 summarizes the correlations between the variables and their canonical variates. With a cutoff correlation of .450 for interpretation (Collis, 1984; Comrey, 1973), the variables relevant to the first canonical variate in the appraisal set were the locus dimension (.74), the stability

Table 12

Results of Canonical Correlation Between the Set of Appraisal Variables and the Set of Affect Variables in the Male/Perceived Success Condition

Dimension	Canonical Correlation	Squared Canonical Correlation	Significance fo Relationship
1 to 4	.55	.30	.0001
2 to 4	.39	.16	.018
3 to 4	.24	.06	.435
4	.19	.04	.465

Table 13

Correlations Between the Variables and Their Canonical Variates in The Male/Perceived Success Condition

Set	Variable	Correlation
Appraisal Set:	Locus Attributions	.74
	Stability Attributions	.71
	Perceived Performance	.65
	Controllability Attributions	.20
Affect Set:	General Affects	
	Unhappy-Happy	.79
	Depressed-Elated	.80
	Unsatisfied-Satisfied	.68
	Self-Related Affects	
	Incompetent-Competent	.75
	Ashamed-Proud	.71
	Unconfident-Confident	.68
	Guilty-Guiltless	.37
	Other-Related Affects	
	Angry-Thankful	.54
	Hostile-Helpful	.51
	Ungrateful-Grateful	.49

Note. All variables are scored toward the positive.

dimension (.71), and perceived performance (.65). The relevant variables in the affect set were the GAs of unhappy-happy (.80), depressed-elated (.79), and unsatisfied-satisfied (.68), the SRAs of incompetent-competent (75), ashamed-proud (.71), and unconfident-confident (.68), and the ORAs of angry-thankful (.54), hostile-helpful (.51), and ungrateful-grateful (.49).

Redundancy measures showed that the appraisal variables explained only 14% of the variance in the affect set.

Analysis 2. Multiple Regressions

Results of the regression analyses performed for affects are reported in Table 14. The regression equations, incorporating all of the appraisal variables, were significant for all three of the affect categories (GA, $p<.001$; SRA, $p<.01$; ORA, $p<.05$). However, only a relatively small proportion of the variance was explained for each affect category (GA, 24%; SRA, 19%; ORA, 12%).

With respect to GA, the locus dimenion was found to have the greatest predictive power ($p<.005$, beta=.30), with this being augmented by perceived performance ($p<.005$, beta=.23). The stability dimension approached significance (beta=.15, p=.15), but the controllability dimension had a clearly nonsignificant correlation (beta=.04, p=.52)

With respect to SRA, perceived performance was found to have the greatest predictive power (beta=.28, $p<.001$), with this being augmented by the locus dimension ($p<.05$, beta=.20).

Table 14

Standard Regression Analyses For Affects in The Male/Perceived Success Condition

Criterion	Predictors	Beta	t	p
General Affect	Locus Dimension	.30	3.83	<.001
	Perceived Performance	.23	3.30	<.005
	Stability Dimension	.15	1.95	.053
	Controllability Dimension	.04	.64	.52
	Total: $F(4,171)=13.51$, $p<.0001$, $R=.49$, $R^2=.24$			
Self-Related Affects	Perceived Performance	.28	3.90	<.0001
	Locus Dimension	.20	2.49	<.05
	Stability Dimension	.13	1.68	.09
	Controllability Dimension	.03	.38	.70
	Total: $F(4,171)=10.14$, $p<.0001$, $R=44$, $R^2=.19$			
Other-Related Affect	Perceived Performance	.22	3.00	<.005
	Locus Dimension	.17	1.98	<.05
	Stability Dimension	.10	1.17	.24
	Controllability Dimension	.03	.48	.63
	Total: $F(4,171)=5.89$, $p<.001$, $R=.35$ $R^2=.12$			

Note. All variables are scored toward the positive.

The stability dimension approached significance (p=.09, beta=.13), but the controllability dimension had a nonsignificant correlation (p=.52, beta=.04).

With respect to ORA, perceived performance was again found to have the greatest predictive power (p<.005, beta=.22), with this being augmented by the locus dimension (p<.05, beta=.17). The stability and controllability dimensions, however, had nonsignificant correlations (p<.24, beta=.10, and p=.63, beta=.03 respectively).

The result of the regression analysis for EXPECTANCY is reported in Table 15. The regression equation incorporating all of the appraisal variables was significant ($F(4,171)=11.23$, p<.0001), however, only 21% of the variance was explained.

Perceived performance was found to have the greatest predictive power (p<.0001, beta=.33), with this being augmented by the stability dimension (p<.05, beta=.17). The locus dimension approached significance (p=.08, beta=.14), but the controllability dimension had a clearly nonsignificant correlation (p=.95, beta=.00).

Analysis 3. Hotelling's T^2 Tests

(i) Locus of Causality Dimension: Internal Versus External

A significant difference was found between the internal and external groups on the combined DVs, $F = 2.75, df = 11/164$, p<.01. The accounted for 16% of the variance.

Table 15

Standard Regression Analysis For Expectancy in The Male/Perceived Success Condition

Predictors	Beta	t	p
Perceived Performance	.33	4.74	<.0001
Stability Dimension	.17	2.14	<.05
Locus Dimension	.15	1.77	.08
Contollability Dimension	.004	.06	.95

Total: $F(4,171)=11.23$, $p<.0001$, $R=.46$,

$R^2=.21$

Note. All variables are scored toward the positive.

At the univariate level the internal group was found to be significantly higher than the external group on the GAs of unsatisfied-satisfied ($p<.01$), unhappy-happy ($p<.001$) and depressed-elated ($p<.001$), on the SRAs of unconfident-confident ($p<.01$), ashamed-proud ($p<.01$), guilty-guiltless ($p,.05$), and incompetent-competent ($p<.01$), and on the ORAs of angry-thankful ($p<.05$), and ungrateful-grateful ($p<.01$).

The internal group was also found to be significantly higher ($p<.01$) than the external group on EXPECTANCY. Table 15 summarizes the results of the univariate analyses.

(ii) Stability Dimension: Stable versus Unstable

A significant difference was found between the stable and unstable groups on the combined DVs, $F = 3.04$, $df = 11/164$, $p<.01$). This accounted for 17% of the variance.

At the univariate level, the stable group were found to be significantly higher than the unstable group on the GAs of unsatisfied-satisfied ($p<.01$), depressed-elated ($p<.01$) and unhappy-happy ($p<.01$), on the SRAs of unconfident-confident ($p<.05$), ashamed-proud ($p<.05$) and incompetent-competent ($p<.01$), and on the ORA of angry-thankful ($p<.05$).

The stable group was also found to be significantly higher ($p<.001$) than the unstable group on EXPECTANCY. Table 16 summarizes the results of the univariate analyses.

Table 16

Results of the Univariate Analyses For Significant Differences Between Internal and External Groups on Affective Reactions and Expectancy in the Male/Perceived Success Condition

Variable	Mean	S.D.	M.S. Between	M.S. Error	F	df	p
General Affects:							
Unsatisfied-Satisfied	5.04a 5.74b	1.56 1.17	20.25	1.78	11.38	1,174	<.01
Depressed-Elated	4.87 5.81	1.48 .94	36.71	1.38	26.53	1,174	<.001
Unhappy-Happy	5.00 5.76	1.54 .95	24.01	1.46	16.50	1,174	<.001
Self-Related Affects:							
Unconfident-Confident	5.13 5.69	1.53 1.04	12.75	1.56	8.18	1,174	<.01
Incompetent-	5.34 5.89	1.38 1.03	12.65	1.37	9.18	1,174	<.01
Ashamed-Proud	5.02 5.60	1.41 1.02	14.39	1.41	10.22	1,174	<.01

(continued over)

Table 16 (continued)

Reults of The Univariate Analyses for Significant Differences Between The Internals and The Externals on Affective Reactions and Expectancy in The Male/Perceived Success Condition

Variable	Mean	S.D.	M.S. Between	M.S. Error	F	df	p
Guilty-Guiltless	5.38	1.58	7.47	1.82	4.10	1,174	<.05
	5.80	1.18					
Other-Related Affects							
Angry-Thankful	4.52	1.42	6.74	1.60	4.20	1,174	<.05
	4.92	1.16					
Ungrateful-Grateful	4.97	1.39	12.11	1.53	7.90	1,174	<.01
	5.51	1.13					
Expectancy	5.65	1.05	6.35	.77	8.28	1,174	<.01
	6.04	.75					

Note. The greater the mean, the more positvie the affective reaction.
'a' denotes the external group(n=108),
'b' denotes the internal group(n=68).

Table 17

Results of The Univariate Analyses For Significant Differences Between Stable and Unstable Groups on AFfective Reactions and Expectancy in The Male/Perceived Success Condition

Variable	Mean	S.D.	M.S. Between	M.S. Error	F	df	p
General Affects:							
Unsatisfied-Satisfied	5.14a 5.70b	1.55 1.19	13.02	1.82	7.15	1,174	<.01
Unhappy-Happy	5.16 5.68	1.36 1.15	11.51	1.53	7.52	1,174	<.01
Depressed-Elated	4.97 5.76	1.30 1.13	26.44	1.44	18.33	1,174	<.001
Self-Related Affects:							
Unconfident-Confident	5.18 5.67	1.53 1.03	9.91	1.57	6.29	1,174	<.05
Ashamed-Proud	5.13 5.54	1.40 1.21	7.33	1.44	5.07	1,174	<.05

(continued over)

Table 17 (continued)

Results of The Univariate Analyses For Significant Differences Between Stable and Unstable Groups on Affective Reactions and Expectancy in The Male/Perceived Success Condition

Variable	Mean	S.D.	M.S. Between	M.S. Error	F	df	p
Incompetent-Competent	5.35	1.40	12.50	1.38	9.06	1,174	<.01
	5.90	1.00					
Other-Related Affects:							
Angry-Thankful	4.47	1.32	10.47	1.58	6.61	1,174	<.05
	4.96	1.21					
Expectancy	5.62	1.02	8.46	.75	11.22	1,174	<.05
	6.06	.75					

Note. The greater the mean, the more positive the affective reaction.
'a' denotes the unstable group(n=71)
'b' denotes the stable group(n=105)

(iii) Controllability Dimension: Controllable Versus Uncontrollable

A nonsignificant difference, F=.86, df=11/164, p=.52, was found between the controllable and uncontrollable groups on the combined DVs.

Condition 1. Male/Success: Results Summary

1. The Relationship Between The Set of Appraisal Variables and The Set of Affective Reactions.

The results of the canonical correlation analysis showed the set of four appraisal variables to be significantly related to the set of ten affects. In terms of the nature of this relationship, the locus dimension, the stability dimension, and perceived performance were shown to be the most relevant of the appraisal variables, while GA, SRA, and to a lesser extent, ORA, were shown to be relevant to the affect variables. All correlations between the appraisal and affect variables were positive, indicating that the more successful the perceived performance, and the more internal or stable the attribution, then the more positive was the affective reaction.

However, the accounted-for variance of 30% suggested only a moderate degree of association between these two sets of variables. Furthermore, the set of appraisal variables were shown to explain only 14% of the variance in the set of affect variables.

2. The Relationship Between The Appraisal Variables and GA

The Hotelling's T^2 tests also indicated that the more internal and stable the attributions, then the more positive was GA.

The regression analysis indicated that the locus dimension, as well as perceived performance, had greater predictive power for GA than did stability.

The regression analysis further indicated that the full group of appraisal variables was correlated only in part with GA (total $R^2 = .24$).

3. The Relationship Between The Appraisal Variables and SRA

The Hotelling's T^2 tests indicated that the more internal and stable the attributions, then the more positive was SRA. The result of the regression analyses paralleled these findings, indicating that the locus dimension and, to a lesser extent, the stability dimension were associated with SRA, but further indicated that perceived performance had the greatest predictive power of all the appraisal variables.

The regression analysis further indicated that the full group of appraisal variables was correlated only in part with SRA (total $R^2 = .19$).

4. The Relationship Between The Appraisal Variables and ORA

The Hotelling's T^2 tests indicated that the more internal, and to a lesser extent, the more stable the attributions, then the more positive was ORA. The regression analysis also indicated the locus dimension to be associated with ORA, but further indicated perceived performance to have the greatest predictive power of all the appraisal variables.

The regression analysis further indicated that the full group of appraisal variables was correlated only in part with ORA (total R^2= .12).

5. The Relationship Between The Appraisal Variables and Expectancty

The Hotelling's T^2 tests indicated that the more stable and internal the attributions, then the more positive was EXPECTANCY. While the regression analysis indicated the stability dimension, and to a lesser extent the locus dimension, to be associated with EXPECTANCY, perceived performance was shown to have the greatest predictive power of all the appraisal variables.

The regression analysis further indicated that the full group of appraisal variables was correlated only in part with EXPECTANCY (total R^2= .21).

Finally, it is noteworthy that in the Male/Perceived Success condition, the controllability dimension was clearly redundant with regard to it's predictive power for affective reactions and EXPECTANCY.

Condition 2. Female/Success

Analysis 1. Canonical Correlation Analysis

Appendix 7b reports the means and standard deviations for each variable, and the correlations within each set of variables.

The results showed a significant relationship between the set of appraisal variables and the set of affects. Although all sets of variates were involved in the overall discrimination, only the first showed interpretable loadings. Table 18 summarizes the results of the analysis. The result indicated that the first pair of canonical variates yielded a moderate positive correlation ($Rc=.61$, $F=10.99$, $df=10, 187$, $p<.0001$). Although this relationship was shown to be significant, the accounted-for variance of 37% indicated there to be only a moderate degree of association between these two sets of variables.

Table 19 summarizes the correlations between the variables and their canonical variates. With a cutoff correlation of .450 for interpretation, the variables relevant to the first canonical variate in the appraisal set were the locus dimension (.78), perceived performance (.74), and the stability dimension (.62). The relevant variables in the affect set were the GAs of unsatisfied-satisfied (.81), unhappy-happy (.63), depressed-elated (.51), the SRAs of unconfident-confident (.81), ashamed-proud (.66), incompetent-competent (.61), and

Table 18

Results of Canonical Correlation Between the Set of Appraisal Variables and the Set of Affect Variables in the Female/Perceived Success Condition

Dimension	Canonical Correlation	Squared Canonical Correlation	Significance fo Relationship
1 to 4	.611	.37	.0001
2 to 4	.34	.12	.035
3 to 4	.26	.07	.313
4	.19	.03	.614

Table 19

Correlations Between the Variables and Their Canonical Variates in The Female/Perceived Success Condition

Set	Variable	Correlation
Appraisal Set:	Locus Attributions	.78
	Perceived Performance	.74
	Stability Attributions	.61
	Controllability Attributions	.39
Affect Set:	General Affects	
	Unsatisfied-Satisfied	.81
	Unhappy-Happy	.63
	Depressed-Elated	.51
	Self-Related Affects	
	Unconfident-Confident	.81
	Ashamed-Proud	.66
	Incompetent-Competent	.61
	Guilty-Guiltless	.47
	Other-Related Affects	
	Ungrateful-Grateful	.61
	Hostile-Helpful	.59
	Angry-Thankful	.51

Note. All variables are scored toward the positive.

guilty-guiltless (.47), and the ORAs of hostile-helpful (.59), ungrateful-grateful (.61) and angry-thankful (.51).

Redundancy measure showed that the appraisal variables explained only 16% of the variance in the affect set.

Analysis 2. Multiple Regression

Results of the regression analyses performed for affects are reported in Table 20. The regression equations, incorporating all of the appraisal variables, were significant for all three of the affect categories (GA, $p<.0001$; SRA, $p<.0001$; ORA, $p<.0001$). However, only a relatively small proportion of the variance was explained for each affect category (GA, 23%; SRA, 28%; ORA, 20%).

With respect to GA, perceived performance was found to have the greatest predictive power ($p<.0005$, beta=.25), with this being augmented by the locus dimension ($p<.01$, beta=.20) and the stability dimension ($p<.05$, beta=.19). The controllability dimension had a nonsignificant correlation ($p<.43$, beta=.05).

With respect to SRA, perceived performance was again found to have the greatest predictive power ($p<.0001$, beta=.37), with this being augmented by the stability dimension ($p<.01$, beta=.20). The locus dimension approached significance ($p=.10$. beta=.12), but the controllability dimension had a nonsignificant correlation ($p=.46$, beta=.05).

Table 20

Standard Regression Analysis For Affects in The Female/Perceived Success Condition

Criterion	Predictors	Beta	t	p
General Affect	Perceived Success	.25	3.79	<.0005
	Locus Dimension	.20	2.64	<.01
	Stability Dimension	.19	2.454	<.05
	Controllability Dimension	.05	.78	.43
	Total: $F(4,193)=14.59$, $p<.0001$, $R=.48$, $R^2=.23$			
Self-Related Affects	Perceived Performance	.37	5.84	<.0001
	Stability Dimension	.20	2.72	<.01
	Locus Dimension	.12	1.65	.10
	Controllability Dimension	.05	.75	.46
	Total: $F(4,193)=18.51$, $p<.0001$, $R=53$, $R^2=.28$			
Other-Related Affect	Locus Dimension	.32	4.09	<.0001
	Perceived Performance	.12	1.85	.07
	Stability Dimension	.13	1.75	.08
	Controllability Dimension	.00	.03	.98
	Total: $F(4,193)=12.00$, $p<.0001$, $R=.45$ $R^2=.20$			

Note. All variables are scored toward the positive.

With respect to ORA, the locus dimension was found to have the greatest predictive power ($p<.0001$, beta=.32). Perceived performance ($p<.07$, beta=.12) and stability ($p=.08$, beta=.13) approached significance, but the controllability again had a clearly nonsignificant correlation ($p=.98$, beta=.00).

The result of the regression analysis for EXPECTANCY is reported in Table 21. The regression equation incorporating all of the appraisal variables was significant ($F(4,193)=5.10$, $p<.0001$), however, only 10% of the variance was explained.

Perceived performance was found to have the greatest predictive power ($p<.01$, beta=.23), and stability ($p=.07$, beta=.36) approached significance. Locus ($p=.14$, beta=.12), and, controllability ($p=.39$, beta=-.06) were nonsignificant.

Analysis 3. Hotelling's T^2 Tests

(i) Locus of Causality Dimension: Internal Versus External

A significant difference was found between the internal and external groups on the combined DVs, $F=3.77$, $df=11/186$, $p<.001$. This accounted for 18% of the variance.

At the univariate level, the internal group were found to be significantly higher than the external group on the GAs of unsatisfied-satisfied ($p<.001$), unhappy-happy ($p<.01$), and depressed-elated ($p<.05$), on the SRAs of unconfident-confident ($p<.01$), ashamed-proud ($p<.05$), and on the ORAs of angry-thankful ($p<.001$), ungrateful-grateful ($p<.001$), and

Table 21

Standard Regression Analysis For Expectancy in The Female/Perceived Success Condition

Predictors	Beta	t	p
Perceived Performance	.23	3.01	<.01
Locus Dimension	.12	1.48	.14
Stability Dimension	.07	.91	.36
Contollability Dimension	.06	-.87	.39

Total: $F(4,193)=5.10$, $p<.001$, $R=.31$, $R^2= .10$

Note. All variables are scored toward the positive.

hostile-helpful ($p<.001$).

A nonsignificant difference was found between the groups on EXPECTANCY ($p=.238$). Table 22 summarizes the results of the univariate analyses.

(ii) Stability Dimension: Stable Versus Unstable

A significant difference was found between the stable and unstable groups on the combined DVs, $F=2.25$, $df=11/186$, $p<.05$. This accounted for 12% of the variance.

At the univariate level, the stable group were found to be significantly higher than the unstable group on the GAs of unsatisfied-satisfied ($p<.01$), unhappy-happy ($p,.001$), and depressed-elated ($p<.001$), on the SRAs of unconfident-confident ($p<.01$), incompetent-competent ($p<.001$), ashamed-proud ($p<.01$), and guilty-guiltless ($p<.05$), and on the ORAs of angry-thankful ($p<.001$), ungrateful-grateful ($p<.001$) and hostile-helpful ($p<.05$).

The groups were not found to differ on EXPECTANCY ($p=.229$). Table 23 summarizes the results of the univariate analyses.

(iii) Controllability Dimension: Controllable Versus Uncontrollable

A nonsignificant difference, $F=.87$, $df=11/186$, $p=.57$, was found between the controllable and uncontrollable groups on the combined DVs. The accounted-for variance was 5%.

Table 22

Results of the Univariate Analyses For Significant Differences Between Internal and External Groups on Affective Reactions and Expectancy in the Female/Perceived Success Condition

Variable	Mean	S.D.	M.S. Between	M.S. Error	F	df	p
General Affects:							
Unsatisfied-Satisfied	4.88a 5.64b	1.44 1.11	27.89	1.60	17.46	1,196	<.001
Unhappy-Happy	4.98 5.50	1.32 1.19	13.27	1.55	8.54	1,196	<.01
Depressed-Elated	5.04 5.41	1.18 1.17	6.86	1.37	5.01	1,196	<.05
Self-Related Affects:							
Unconfident-Confident	4.94 5.50	1.39 1.26	15.14	1.73	8.75	1,196	<.01
Incompetent-Competent	5.06 5.59	1.20 1.07	13.94	1.27	11.02	1,196	<.001
Ashamed-Proud	4.93 5.31	1.16 1.13	6.93	1.31	5.31	1,196	<.05

(continued over)

Table 22 (continued)

Reults of The Univariate Analyses for Significant Differences Between The Internals and The Externals on Affective Reactions and Expectancy in The Female/Perceived Success Condition

Variable	Mean	S.D.	M.S. Between	M.S. Error	F	df	p
Other-Related Affects							
Angry-Thankful	4.39	1.32	41.98	1.47	28.47	1,196	<.001
	5.33	1.13					
Ungrateful-Grateful	4.67	1.16	21.50	1.25	12.27	1,196	<.001
	5.33	1.09					
Hostile-Helpful	4.68	1.33	21.86	1.42	15.40	1,196	<.001
	5.35	1.08					

Note. The greater the mean, the more positvie the affective reaction.
'a' denotes the external group(n=84),
'b' denotes the internal group(n=114)

Table 23

Results of The Univariate Analyses For Significant Differences Between Stable and Unstable Groups on Affective Reactions and Expectancy in The Female/Perceived Success Condition

Variable	Mean	S.D.	M.S. Between	M.S. Error	F	df	P
General Affects:							
Unsatisfied-Satisfied	4.97a 5.53b	1.37 1.24	14.35	1.67	8.61	1,196	<.01
Unhappy-Happy	4.87 5.53	1.19 1.26	20.41	1.51	13.45	1,196	<.001
Depressed-Elated	4.87 5.48	1.63 1.21	17.98	1.34	13.68	1,196	<.001
Self-Related Affects:							
Unconfident-Confident	4.88 5.49	1.36 1.28	17.68	1.72	10.29	1,196	<.01
Incompetent-Proud	5.03 5.57	1.19 1.09	14.13	1.27	11.16	1,196	<.001

(continued over)

Table 23 (continued)

Results of The Univariate Analyses For Significant Differences Between Stable and Unstable Groups on Affective Reactions and Expectancy in The Female/Perceived Success Condition

Variable	Mean	S.D.	M.S. Between	M.S. Error	F	df	p
Ashamed-Proud	4.87	1.11	9.45	1.29	7.31	1,196	<.01
	5.38	1.15					
Guilty-Guiltless	5.35	1.33	5.27	1.27	4.14	1,196	<.05
	5.68	1.26					
Other-Related Affects:							
Angry-Thankful	4.49	1.31	22.97	1.57	14.60	1,196	<.001
	5.20	1.22					
Ungrateful-Grateful	4.69	1.12	15.40	1.26	12.07	1,196	<.001
	5.27	1.14					
Hostile-Helpful	4.80	1.32	8.52	1.49	5.72	1,196	<.05
	5.23	1.16					

Note. The greater the mean, the more postitive the affective reaction,
'a' denotes the unstable group (n=75),
'b' denotes the stable group (n=123)

Condition 2. Female/Success: Results Summary

1. The Relationship Between The Set of Appraisal Variables and The Set of Affective Reactions.

The results of the canonical correlation analysis showed the set of four appraisal variables to be significantly related to the set of ten affects. In terms of the nature of this relationship, the locus dimension, perceived performance, and the stability dimension were shown to be the most relevant of the appraisal variables, while GA, SRA, and ORA were all shown to be relevant in the affect variables. All correlations between the appraisal and affect variables were positive, indicating that the more successful the perceived performance, and the more internal or stable the attributions, then the more positive was the affective reaction.

The accounted-for variance of 37% suggested a moderate degree of association between these two sets of variables, and the appraisal variables were shown to explain 17% of the variance in the set of affective variables.

2. The Relationship Between The Appraisal Variables and GA

The Hotelling's T^2 tests also indicated that the more internal and stable the attributions, then the more positive was GA.

The regression analysis similarly indicated that the locus and stability dimensions were associated with GA, but further indicated perceived performance to have the greatest predictive

power of all the appraisal variables.

The regression analysis further indicated that the full group of appraisal variables were correlated only in part with GA (total R^2= .23).

3. The Relationship Between The Appraisal Variables and SRA

The Hotelling's T^2 tests indicated that the more stable, and to a lesser extent, the more internal the attributions, then the more positive was SRA.

The regression analysis indicated that the stability dimension had a greater correlation with SRA than did the locus dimension, but further indicated perceived performance to have the greatest predictive power of all the appraisal variables.

The regression analysis further indicated that the full group of appraisal variables were correlated only in part with SRA (total R^2= .28).

4. The Relationship Between The Appraisal Variables and ORA

The Hotelling's T^2 tests indicated that the more internal and stable the attributions, then the more positive was ORA.

The regression analysis indicated that the locus dimension had the greatest predictive power for ORA, with this being augmented by stability and perceived performance.

The regression analysis further indicated that the full group of appraisal variables were correlated only in part with ORA (total R^2= .20).

5. The Relationship Between The Appraisal Variables and Expectancty

Finally, the Hotelling's T^2 tests indicated no differences between any of the dimensional groupings (internal vs. external, stable vs. unstable, controllable vs. uncontrollable) on EXPECTANCY.

Paralleling this finding, the regression analysis indicated that perceived performance alone had an important and significant predictive power for EXPECTANCY. The regression analyses further indicated that the full group of appraisal variables were correlated only in small part with EXPECTANCY (total R^2= .10).

As a final note, it appears that the controllability dimension was clearly unrelated to the affective reactions or EXPECTANCY.

Condition 3. Male/Failure

Analysis 1. Canonical Correlation Analysis

Appendix 7c reports the means and standard deviations for each variable, and the correlations within each set of variables.

The results showed a significant relationship between the set of appraisal variables and the set of affects. Although all sets of variates were involved in the overall discrimination, only the first showed interpretable loadings. Table 24 summarizes the results of the analysis. The result indicated that the first pair of canonical variates yielded a moderate positive correlation ($Rc=.56$, $F=7.53$, $df=10,164$, $p<.0001$). Although this relationship was shown to be significant, the accounted-for variance of 32% indicated there to be only a moderate degree of association between these two sets of variables.

Table 25 summarizes the correlations between the variables and their canonical variates. With a cutoff correlation of .450 for interpretation, the variables relevant to the first canonical variate in the appraisal set were perceived performance (.92) and controllability (.50). The relevant variables in the affect were the GAs of unsatisfied-satisfied (.69), depressed-elated (.62), and unhappy-happy (.58), the SRA of unconfident-confident (.94), and the ORA of ungrateful-grateful (.54).

Redundancy measures showed that the appraisal variables explained only 11% of the variance in the affect set.

Table 24

Results of Canonical Correlation Between the Set of Appraisal Variables and the Set of Affect Variables in the Male/ Perceived Failure Condition

Dimension	Canonical Correlation	Squared Canonical Correlation	Significance fo Relationship
1 to 4	.56	.32	.0001
2 to 4	.31	.09	.397
3 to 4	.22	.05	.758
4	.15	.02	.812

Table 25

Correlations Between the Variables and Their Canonical Variates in The Male/Perceived Failure Condition

Set	Variable	Correlation
Appraisal Set:	Perceived Performance	.92
	Controllability Attributions	.50
	Locus Attributions	.18
	Stability Attributions	-.15
Affect Set:	General Affects	
	Unsatisfied-Satisfied	.69
	Depressed-Elated	.62
	Unhappy-Happy	.58
	Self-Related Affects	
	Unconfident-Confident	.94
	Incompetent-Competent	.43
	Ashamed-Proud	.40
	Guilty-Guiltless	.32
	Other-Related Affects	
	Ungrateful-Grateful	.54
	Angry-Thankful	.44
	Hostile-Helpful	.34

Note. All variables are scored toward the positive.

Analysis 2. Multiple Regressions

Results of the regression analyses performed for affects are reported in Table 26. The regression equations, incorporating all of the appraisal variables, were significant for all three of the affect categories (GA, $p<.0001$; SRA, $p<.0001$; ORA, $p<.0005$). However, only a relatively small proportion of the variance was explained for each affect category (GA, 19%, SRA, 17%, ORA, 12%).

With respect to GA, perceived performance was found to have the greatest predictive power ($p<.0001$, beta=.33), with this being augmented by the controllability dimension ($p<.05$, beta=.17) and the locus dimension ($p<.05$, beta=.14). The stability dimension had a nonsignificant correlation ($p=.22$, beta=-.09) with GA.

With respect to SRA, perceived performance was found to have the greatest predictive power ($p<.0001$, beta=.37). The controllability dimension approached significance ($p=.07$, beta=.13), but the locus dimension ($p=.95$, beta=-.01) and the stability dimension ($p=.98$, beta=.00) had nonsignifcant correlations with SRA.

With respect to ORA, perceived performance again had the greatest predictive power ($p<.001$, beta=.27). The locus dimension approached significance ($p<.08$, beta=.13), but the stability ($p=.19$, beta=-.10), and controllability ($p=.26$, beta=.08) had nonsignificant correlations with ORA.

Table 26

Standard Regression Analyses For Affects in The Male/Perceived Failure Condition

Criterion	Predictors	Beta	t	p
General Affect	Perceived Performance	.33	4.66	<.0001
	Controllability Dimension	.17	2.43	<.05
	Locus Dimension	.14	2.03	<.05
	Stability Dimension	-.09	-1.23	.22
	Total: $F(4,170)=10.05$, $p<.0001$, $R=.44$, $R^2=.19$			
Self-Related Affects	Perceived Performance	.37	5.08	<.0001
	Controllability Dimension	.13	1.84	<.07
	Locus Dimension	-.01	-.07	.95
	Stability Dimension	.00	-.03	.98
	Total: $F(4,170)=8.95$, $p<.0001$, $R=.42$ $R^2=.17$			
Other-Related Affect	Perceived Performance	.27	3.6	<.001
	Locus Dimension	.13	1.8	<.08
	Stability Dimension	-10	-1.32	.19
	Controllability Dimension	.08	1.12	.26
	Total: $F(4,170)=5.53$, $p<.005$, $R=.34$ $R^2=.12$			

Note. All variables are scored toward the positive.

The result of the regression analysis for EXPECTANCY is reported in Table 27. The regression equation incorporating all of the appraisal variables was significant ($F(4,170)=23.45$, $p<.0001$), and this accounted for 36% of the variance.

Perceived performance had the greatest predictive power ($p<.0001$, beta=.52), with this being augmented by the stability ($p<.0005$, beta=-.23) and the locus ($p<.05$, beta=.16) dimensions. The negative beta value for stability indicated that the more stable was the attribution, then the lower was the EXPECTANCY. Finally, the controllability dimension had a nonsignificant correlation ($p<.44$, beta=.05).

Analysis 3. Hotelling's T^2 Tests

(i) Locus of Causality Dimension: Internals Versus Externals

A nonsignificant difference, F=.54, df=11/163, p=.87, was found between the internal and external groups on the combined DVs. The accounted-for variance was 3.52%.

(ii) Stability Dimension: Stable Versus Unstable

A nonsignificant difference, F=1.50, df=11/163, p=.14, was found between the stable and unstable groups on the combined DVs. The accounted-for variance was 9.18%.

(iii) Controllability Dimension: Controllable Versus Uncontrollable

The difference between the controllable and uncontrollable

Table 27

Standard Regression Analysis For Expectancy in The Male/Perceived Failure Condition

Predictors	Beta	t	p
Perceived Performance	.52	8.19	<.0001
Stability Dimension	-.23	-3.72	<.0005
Locus Dimension	.16	2.60	<.05
Contollability Dimension	.05	.78	.44

Total: $F(4,170)=23.45$, $p<.0001$, $R=.60$,

$R^2= .36$

Note. All variables are scored toward the positive.

groups on the combined DVs was found to approach significance, F=1.64, df=11/163, p=.09. The accounted-for variance was 9.96%.

At the univariate level, the controllable group was found to be more positive than the uncontrollable group on the SRAs of unconfident-confident (F=11.06, df=1/173, p<.001) and incompetent-competent (F=7.07, df=1/173, p<.01).

Condition 3. Male/Failure: Results Summary

1. The Relationship Between the Set of Appraisal Variables and the Set of Affective Reactions

The results of the canonical correlation analysis showed the set of four appraisal variables to be significantly related to the set of ten affects. In terms of the nature of this relationship, perceived performance, and to a lesser extent, controllability were shown to be the most relevant of the appraisal variables, while GA, and to lesser extends SRA (only on unconfident-confident) and ORA (only on ungrateful-grateful) were shown to be relevant to the affect variables. All correlations were positive, indicating that the less successful the perceived performance, and the less controllable the attribution, then the less positive was the affective reaction.

However, the accounted-for variance of 32% suggested only a moderate degree of association between these two sets of variables. Furthermore, the set of appraisal variables were shown to explain only 11% of the variance in the set of affect variables.

2. The Relationship Between the Appraisal Variables and GA

The Hotelling's T^2 tests indicated that no difference existed between any of the dimensional groupings (internal vs. external, stable vs. unstable, uncontrollable vs. controllable) on GA.

The regression analysis indicated that perceived performance had the greatest predictive power for GA, with this being augmented by controllability, and to a lesser extent, the locus dimension. The regression analyses further indicated that the full group of appraisal variables was correlated only in small part with GA (total $R^2 = 19$).

3. The Relationship Between the Appraisal Variables and SRA

The Hotelling's T^2 tests indicated that the more controllable the attributions, then the more positive were the SRAs of unconfident-confident and incompetence-competence.

The regression analysis similarly indicated the controllability dimension to have predictive power for SRA which approached statistical significance, but further indicated perceived performance to have the greatest predictive power for SRA of all the appraisal variables. The regression analysis further indicated that the full group of appraisal variables was correlated only in part with SRA (total $R^2 = .17$).

4. The Relationship Between the Appraisal Variables and ORA

The Hotelling's T^2 tests indicated that no differences existed between any of the dimensional groupings (internal vs. external, stable vs. unstable, controllable vs. uncontrollable) on ORA.

The regression analysis indicated the locus dimension to have predictive power for ORA which approached significance, but further showed perceived performance to have the greatest predictive power for ORA of all the appraisal variables. The regression analysis further indicated that the full group of appraisal variables was correlated only in small part with ORA (total $R^2 = .12$).

5. The Relationship Between the Appraisal Variables and Expectancy

The Hotelling's T^2 tests suggested that, when assessed independently, the dimensional groupings (internal vs. external, stable vs. unstable, controllable vs. uncontrollable) demonstrated no significant differnces on EXPECTANCY.

The regression analysis indicated that perceived performance had the greatest predictive power for EXPECTANCY, but also showed this to be augmented by the stability dimension, and to a lesser extent, the locus dimension also. The regression analysis further indicated that the full group of appraisal variables was correlated only in part with EXPECTANCY (total $R^2 = .36$).

Condition 4. Female/Failure

Analysis 1. Canonical Correlation Analysis

Appendix 7d reports the means and standard deviations for each variable, and the correlations within each set of variables.

The results showed a significant relationship between the set of appraisal variables and the set of affects. Although all sets of variates were involved in the overall discrimination, only the first showed interpretable loadings. Table 28 summarizes the results of the analysis.

The result indicated that the first pair of canonical variates yielded a moderate positive correlation (Rc=.56, F=8.29, df=10, 186, p<.0001). However, although this relationship was shown to be significant, the accounted-for variance of 31% indicated there to be only a moderate degree of association between these two sets of variables.

Table 29 summarizes the correlations between the variables and their canonical variates. With a cutoff correlation of .450 for interpretation, the only variables relevant to the first canonical variate in the appraisal set was perceived performance (.94). The relevant variables in the affect were the GAs of depressed-elated (.74), unsatisfied-satisfied (.69), unhappy-happy (.67), the SRAs of incompetent-competent (.66), unconfident-confident (.61), ashamed-proud (.57), and guilty-guiltless (.55), and the ORAs of angry-thankful (.59) and hostile-helpful (.52).

Table 28

Results of Canonical Correlation Between the Set of Appraisal Variables and the Set of Affect Variables in the Female/Perceived Failure Condition

Dimension	Canonical Correlation	Squared Canonical Correlation	Significance of Relationship
1 to 4	.56	.31	.0001
2 to 4	.38	.15	.026
3 to 4	.21	.04	.644
4	.17	.03	.631

Table 29

Correlations Between the Variables and Their Canonical Variates in The Female/Perceived Failure Condition

Set	Variable	Correlation
Appraisal Set:	Perceived Performance	.94
	Locus Attributions	.36
	Stability Attributions	.27
	Controllability Attributions	.27
Affect Set:	General Affects	
	Depressed-Elated	.74
	Unsatisfied-Satisfied	.69
	Unhappy-Happy	.67
	Self-Related Affects	
	Incompetent-Competent	.66
	Unconfident-Confident	.61
	Ashamed-Proud	.57
	Guilty-Guiltless	.51
	Other-Related Affects	
	Angry-Thankful	.59
	Hostile-Helpful	.52
	Ungrateful-Grateful	.43

Note. All variables are scored toward the positive.

Redundancy measures showed that the appraisal variables explained only 13% of the variance in the affect set.

Analysis 2. Multiple Regressions

Results of the regression analyses performed for affects are reported in Table 30. The regression equations, incorporating all of the appraisal variables, were significant for all three of the affect categories (GA, $p<.0001$; SRA, $p<.0001$; ORA, $p<.0001$). However, only a relatively small proportion of the variance was explained for each affect category (GA, 22%, SRA, 21%, ORA, 17%).

With respect to GA, perceived performance was found to have the greatest predictive power ($p<.0001$, beta=.43). The controllability dimension approached significance ($p=.07$, beta=.12), but the locus ($p<.12$, beta=.11) and stability dimensions ($p=.82$, beta=-.02) had nonsignificant correlations with GA.

With respect to SRA, perceived performance was found to have the greatest predictive power ($p<.0001$, beta=.41), with this being augmented by the controllability dimension ($p<.05$, beta=.17). The locus ($p=.13$, beta=.10) and the controllability dimensions ($p=.63$, beta=-.03) had nonsignificant influences.

With respect to ORA, perceived performance was again found to have the greatest predictive power ($p<.001$, beta=.30), with this being augmented by the locus dimension ($p<.0005$, beta=.26). The stability ($p=.35$, beta=.06) and controllability dimensions ($p=.42$, beta=.06) had nonsignificant correlations with ORA.

Table 30

Standard Regression Analyses For Affects in The Female/Perceived Failure Condition

Criterion	Predictors	Beta	t	p
General Affect	Perceived Performance	.43	6.49	<.0001
	Controllability Dimension	.12	1.80	<.07
	Locus Dimension	.11	1.58	.12
	Stability Dimension	-.02	-.23	.82
	Total: $F(4,192)=13.56$, $p<.0001$, $R=.47$, $R^2= .22$			
Self-Related Affect	Perceived Performance	.41	6.10	<.0001
	Controllability Dimension	.17	2.60	<.05
	Locus Dimension	.10	1.52	.13
	Stability Dimension	-.03	-.49	.63
	Total: $F(4,192)=12.90$, $p<.0001$, $R=.46$ $R^2= .21$			
Other-Related Affect	Perceived Performance	.30	4.38	<.0001
	Locus Dimension	.26	3.77	<.0005
	Stability Dimension	.06	.94	.35
	Controllability Dimension	.06	.81	.42
	Total: $F(4,192)=9.48$, $p<.0001$, $R=.41$ $R^2= .17$			

Note. All variables are scored toward the positive.

The result of the regression analysis for EXPECTANCY is reported in Table 31. The regression equation, incorporating all of the appraisal variables, was significant ($F(4,192)=3.32$, $p<.05$), however, only 7% of the variance was explained.

The stability ($p<.05$, beta=-.20) and controllability ($p<.05$, beta=.19) dimensions were shown to have the greatest predictive power for EXPECTANCY. The negative beta value for stability indicated that the more stable were the attributions, then the lower was the EXPECTANCY. The correlations between the locus dimension, and perceived performance, with EXPECTANCY were nonsignificant ($p=.12$, beta=.11, and $p=.15$, beta=.10 respectively).

Analysis 3. Hotelling's T^2 Tests

Locus of Causality Dimension: Internals Versus Externals

A significant difference was found between the internal and external groups on the combined DVs, $F=2.01$, $df=11/185$, $p<.05$. This accounted for 11% of the variance.

At the univariate level, the internal group was found to be significantly more positive than the external group on the SRA of incompetence-competence ($p<.05$) and hostile-helpful ($p<.001$).

A nonsignificant difference was found between the groups on EXPECTANCY ($p=.602$). Table 32 summarizes the results of the univariate analyses.

Table 31

Standard Regression Analysis For Expectancy in The Female/Perceived Failure Condition

Predictors	Beta	t	p
Stability Dimension	-.20	-2.60	<.05
Controllability Dimension	.19	2.60	<.05
Locus Dimension	.11	1.56	.12
Perceived Performance	.10	1.44	.15

Total: $F(4,192)=3.32$, $p<.05$, $R=.25$

$R^2= .07$

Note. All variables are scored toward the positive.

Table 32

Results of Univariate Analyses for Significant Differences Between Internals and Externals on Affective Reactions in the Female/Perceived Failure Condition

Variable	Mean	S.D.	M.S. Between	M.S. Error	F	df	P
Self-Related Affects:							
Incompetence-Competence	4.28a 4.68b	1.13 1.15	7.53	1.30	5.80	1,195	<.05
Other-Related Affects:							
Anger-Thankful	4.20 4.54	1.05 1.06	5.60	1.11	5.04	1,195	<.05
Hostile-Helpful	4.27 4.82	1.05 1.06	14.42	1.10	13.09	1,195	<.001

Note. The greater the mean, the more postive the affective reaction.
'a' denote the external group (n=113)
'b' denotes the external group (n=84)

(ii) Stability Dimension: Stable Versus Unstable

A nonsignificant difference, F=.92, df=11/185, p=.53, was found between the stable and unstable groups on the combined DVs.

(iii) Controllability Dimension: Controllable Versus Uncontrollable

The difference between the controllable and uncontrollable groups on the combined DVs was found to approach significance, F=1.64, df=11/185, p=.08. The accounted-for variance was 9%.

At the univariate level, the controllable group was significantly more positve than the uncontrollable group on the SRA of ashamed-proud, F=7.4, df=1/95, p<.01.

The controllable group was also found to be significantly higher than the unstable group on EXPECTANCY, F=7.31, df=1/195, p<.01.

Condition 4. Female/Failure: Results Summary

1. The Relationship Between the Set of Appraisal Variables and the Set of Affective Reactions

The results of the canonical correlation analysis showed the set of four appraisal variables to be significantly related to the set of ten affects. In terms of the nature of this relationship, the first pair of canonical variates indicated perceived performance to be the most relevant of the appraisal variables, while GA, SRA, and to a lesser extent ORA, were all

shown to be relevant to the affect variables. All correlations were positive indicating that the more successful was perceived performance, then the more positive was the affective reaction.

However, the accounted-for variance of 31% suggested only a moderate degree of association between these two sets of variables. Furthermore, the set of appraisal variables was shown to explain only 13% of the variance in the variables in the affect set.

2. The Relationship Between The Appraisal Variables and GA

The Hotelling's T^2 tests indicated that no differences existed between any of the dimensional groupings (internal vs. external, stable vs. unstable, controllable vs. uncontrollable) on GA.

The regression analysis indicated that perceived performance had the greatest predictive power for GA, with this being augmented by the controllability dimension. The regression analysis further indicated that the full group of appraisal variables was correlated only in part with GA (total $R^2 = .22$).

3. The Relationship Between The Appraisal Variables and SRA

The Hotelling's T^2 tests indicated that the more internal the attributions, then the more positive was the SRA of incompetence-competence, and that the more controllable the attributions, then the more positive was the SRA of ashamed-proud.

The regression analysis indicated controllability to have

predictive power for SRA, but futher indicated perceived performance to have the greatest predictive power of all the appraisal variables. The regression analysis further indicated that the full group of appraisal variables was correlated only in part with SRA (total R^2= .21).

4. The Relationship Between the Appraisal Variables and ORA

The Hotelling's T^2 tests showed that the more internal were the attributions, then the more positive was ORA.

The regression analysis similarly indicated the locus dimension to have predictive power for ORA, but further indicated perceived performance to have the greatest predictive power of all the appraisal variables. The full group of appraisal variables was correlated only in part with ORA (total R^2= .17).

5. The Relationship Between The Appraisal Variables and Expectancy

The Hotelling's T^2 tests indicated that the more controllable were the attributions, then the more positive was EXPECTANCY.

The regression analysis showed that only controllability and stability had predictive power for EXPECTANCY. Unlike in each of the previously reported appraisal variables-EXPECTANCY relationships, perceived performance was not found to associated

with EXPECTANCY in the female/failure condition. The regression analysis further indicated that the full group of appraisal variables was correlated only in small part with EXPECTANCY (total $R^2 = .07$).

Chapter 5

Discussion and Conclusions

In this chapter, the findings are discussed in terms of the differences between the Perceived Success and Perceived Failure groups, the nature of the relationships between the appraisal variables and the affective reactions and expectancy, and gender differences and gender relationship patterns. The conclusions of this study and directions for future research are then presented.

1. Perceived Performance: Perceived Success Versus Perceived Failure

Hotelling's T^2 tests indicated significant differences between the Perceived Success and Perceived Failure groups in both of the male and female analyses. The accounted-for variance in each analysis was 32%.

In each of the gender analyses, the Perceived Success group perceived causes to be significantly more internal, stable, and controllable than did the Perceived Failure group. This is consistent with Weiner's (1985) model, and congruent with previous sport investigations (e.g., Bukoskwi and Moore, 1980; Mark et al., 1984; McAuley and Gross, 1983; Williams, 1981) and educational research (e.g., Forsyth and McMillan, 1981; Russell, 1982; Russell and McAuley, 1986).

These results also provide support for the self-serving bias, that is, both males and females tended to attribute success

internally (on the 3 to 21 score range of the CDS, males had a mean of 15.27, and a S.D. of 3.87; females had a mean of 15.06, and a S.D. of 3.82). This parallels the findings of previous sport research (e.g., Bird and Brame, 1979; Scanlon and Passer, 1980b). However, contrary to the self-serving bias, both males and females in the Perceived Failure condition tended to be more internal than external (male: mean 13.55, S.D. 3.90; female: mean 13.80, S.D. 3.59). These results support other research findings in sport (e.g., Biddle and Hill, 1984; Mark et al., 1984; McAulty and Gross, 1983).

A variety of reasons have been suggested to explain why the self-serving bias does not always operate in failure situations in sport. For example, Spink (1978) considered that the decisiveness of the outcome, or the consistency of subjective evaluation with objective outcomes, may mediate against the biasing of attributions. A more likely explanation in this study could have been that the subjects were more willing to accept personal responsibility and to admit to internal causes for personal failure because the attributions were made in private rather than publically to their peers (Rejeski and Brawley, 1983).

For each of the gender analyses, the Perceived Success group was also shown to be significantly more positive than the Perceived Failure group on all of the GAs, SRAs, and ORAs, and EXPECTANCY. These findings are congruent with Weiner's model (Weiner et al., 1978; Weiner, 1985), and consistent with sport research (e.g., Robinson and Howe, 1987; Vallerand, 1987), and

educational research (e.g., Forsyth and McMillan, 1981), and offer an indication of the important role that perceived performance plays in the affect and expectancy processes.

2. The Extent of the Relationship Between the Appraisal Variables and Affective Reactions

The canonical correlation analyses revealed a limited degree of association between the set of appraisal variables and the set of affect variables, with the accounted-for variances ranging from 30% to 37% over the four gender/perceived performance conditions. Redundancy measures further indicated that over the four conditions the appraisal variables only accounted for between 11% to 17% of the variance in the affect set.

With regard to the three affect types, the regression analyses showed that for the four conditions, the appraisal variables accounted for variances of 19% to 24% for GA, 17% to 28% for SRA, and 12% to 20% for ORA. For EXPECTANCY, the appraisal variables accounted for variances of 7% to 36% over the four conditions.

Although these variances are not large, they do provide limited support for Weiner's (1985) model in that the appraisal variables are moderately associated with affective reactions, and may be responsible "in part" for the generation of affective reactions in a youth sport achievement setting.

3. Relationships Between Appraisal Variables and Affective Reactions

(i) Appraisal Variables and General Affect Relationships:

Clear relationships were shown in each of the perceived success and perceived failure conditions. In each of the four gender/perceived performance conditions, the perceived performance appraisal had significant predictive power for GA ,and in all but the male/success condition it had the greatest predictive power of all the appraisal variables.

The regression analyses indicated that the locus and stability dimensions also had predictive power for GA in both of the success conditions. Locus was also shown to have the greatest predictive power for GA in the male/success condition. These findings were supported by the results of the Hotelling's T^2 tests.

In the failure conditions a very different pattern ocurred. The regression analyses indicated that the control dimension had an augmenting role in both of the male and female failure conditions, and futher showed that locus also contributed an augmenting role in the male/failure condition.

(ii) Appraisal Variables and Self-Related Affect Relationships:

The findings for SRA were similar to those for GA in each of the perceived success and perceived failure conditions. In each of the four conditions, perceived performance was shown to contribute the greatest predictive power of all the appraisal variables for SRA.

The regression analyses indicated that the locus and stability dimensions had significant augmenting roles in both of the success conditions . Locus had the more important role in the male/success condition, and stability had the more important role in the female/success condition. Those findings were supported by the results of the Hotelling's T^2 tests.

In the failure conditions, a quite different pattern emerged. Only the control dimension had an augmenting role, particularly for the female group. The Hotelling's T^2 tests provided support for this finding, but also indicated that the locus dimension had a minor role.

These findings indicate the fundamental importance of the perceived performance appraisal to the SRA affect process. Also, that internal attributions were found to be associated with positive SRA in the perceived success conditions is congruent with a main postulate of Weiner's (1985) model, and consistent with findings in the laboratory (McFarland and Ross, 1982; Vallerand and Blais, cited in Vallerand, 1987), education (Forsyth and McMillan, 1981, Russell and McAuley, 1986) and sport (Robinson and Howe, 1987; Vallerand, 1987).

The finding that the locus dimension was related in only a minor way with SRA in the failure condition was incongruent with Weiner's (1985) model, which posits that internal attributions for failure will lead to negative SRA. It does support Vallerand's (1987) findings for youth basketball players. To explain these findings, Vallerand (1987) and Coyne (1982) have

argued that reflective appraisals of the internal-external type are sufficient but non-necessary causes of SRA. They believed that attributional appraisals serve only to modify, minimize, or augment the effects of the intuitive (perceived performance) appraisal on affective reactions. In support of this position, research has shown that people tend to make use of attributional appraisals most often in circumstances of novelty (Berlyne, 1970), uncertainty (Schachter and Singer, 1962), and unexpected rather than expected events (Hastie, 1984).

Reeder and Brewer (1979) have also suggested that individuals tend to have a particular causal schema which leads them to believe that individuals of low ability will always perform at a low level, whereas people of high ability may perform at either a high or low level. Thus, their schema is that the skillful may fail, but that the unskillful will never succeed. It may be then, that the perceived failure subjects expected to experience personal failure in the Physical Education program. These expectations may have resulted in a lack of conflict between existing self-structures and outcomes, thus the redundant role of the locus attributional process.

The results for the locus dimension may also be interpreted as part of a self-serving bias. Distinctive locus attributions for successful performance were made while non-distinctive locus attributions for unsuccessful performance were made. This seems to be based upon a motivated concern to experience positive self-related affects in success conditions and to alleviate negative self-related affects in failure conditions (Bradley,

1978). This success/failure attributional pattern for the locus dimension has been previously documented in sport research (e.g., Biddle and Hill, 1985; Robinson and Howe, 1987; Vallerand, 1987).

The findings on the association between stability attributions and SRA in the perceived success conditions are congruent with Weiner's (1985) model, which posits that stable attributions will influence the magnitude of any affective reaction, and will specifically maximize self-related affect, such as pride. This finding is also consistent with the results from other studies indicating that stability can have powerful effects on SRA (e.g., Golin, Sweeney, and Shaeffer, 1981; Vallerand, 1987).

Finally, congruent with Weiner's (1985) model, the control dimension was shown to be associated with SRA in the failure conditions. This is also consistent with the findings of Forsyth and McMillan (1981), and the sport research of McAuley and Gross (1983) and Robinson and Howe (1987). The finding also may be interpreted as support for Seligman's work on sources of learned helplessness (e.g., Abramson et al., 1978; Seligman, 1975). Subjects who did not do well in the Physical Education program tended to believe that they could not control their outcomes and reported negative SRA. This suggests that perceived noncontingency - and not just failure - is associated with poor self-esteem and loss of achievement motivation.

(iii) Appraisal Variables and Other-Related Affect Relationships:

Clear relationships were shown in each of the perceived success and perceived failure conditions. Perceived performance was shown to have the greatest predictive power of all the appraisal variables in three of the conditions. In the fourth condition, female/success, it had only a minor augmenting role.

In the success conditions, the regression analyses showed the locus dimension to have a strong association, and the stability dimension to have only a weak association, with ORA. The results of the Hotelling's T^2 tests supported these findings. Although these results support Weiner's (1985) postulate that the locus dimension plays an important role in the generation of ORA, the findings indicated that internal, rather than external attributions, were associated with positive ORA in success outcomes. This appears to suggest that for this particular age-group, attribution and affect are linked less specifically than Weiner's (1985) model postulates. That is, internal attributions for success lead to positive self-esteem, and this in turn may lead (presumedly in the absence of hinderance from others) to positive ORA toward others involved in the achievement event.

In the failure conditions, the regression analyses showed that the locus dimension again had a strong association with ORA, this being particularly important for females. The Hotelling's T^2 tests indicated similar results. This result is

consistent with Weiner's (1985) postulate that external attributions are associated with negative ORA for failure outcomes, and is congruent with Russell and McAuley's (1986) research involving the ORA of anger.

Although Weiner (1985) hypothesized that the control dimension may be involved in the generation of ORA , perceptions of control were not shown to be associated with ORA in either of the success or failure conditions.

Summary of the Appraisal Variables and Affective Reactions Relationship Findings:

These findings for GA, SRA, and ORA underscore the fundamental importance of the role of perceived performance appraisal in the affect process. For each of the affect types, perceived performance was generally shown to have the greatest predictive power of all the appraisal variables for both success and failure outcomes.

These results parallel recent research findings in the realm of education (e.g., Arkin and Maruyama 1979; Bailey et al., 1975; Forsyth and McMillan, 1981; Frieze et al., 1977; McMillan and Forsyth, 1983; McMillan and Spratt, 1983,) and sport (Biddle and Hill, 1985; Vallerand, 1987) which indicate that perceived performance appraisal is the main predictor of affect.

The canonical correlation analyses and the beta values of the regression analyses indicated that perceived performance appraisal generally had more important predictive power for affective reactions in the failure conditions than it did in the success conditions. Also, in support of Weiner et al., (1978,

1979), the causal dimensions tended to have more important predictive power for affective reactions in the success conditions than in the failure conditions.

That the causal dimensions had generally less important roles than the perceived performance appraisal in the affect process, is supportive of research (Russell and McAuley, 1986; Vallerand, 1987) which indicates that the relationship between causal dimensions and affective reactions may not be as meaningful when tested in the context of an actual achievement setting as compared to experimental settings.

In agreement with Vallerand's (1987) model, the results also indicate that attributional appraisals may not always be involved in the emotion process, but when they are operative, attributions may influence not only SRA and ORA, but GA also. These findings are consistent with those reported by Rejeski and Lowe (1980) in physical activity settings, which show that attributions can help to generate a host of affects other than those self-related in nature. Weiner's (1985) contention that GAs are outcome-dependent and attribution-independent is therefore not supported.

These findings also suggest that certain causal dimensions may play roles of differing importance in the affect process in success conditions as compared to failure conditions. That is, locus and stability were generally shown to serve the purpose of augmenting the predictive power of perceived performance for GA, SRA, and ORA in the success conditons. On the other hand, locus was shown to play a less global role in the failure conditions,

and despite the apparent redundancy of the control dimension in the success condition, perceived control was shown to have an augmenting role for GA and SRA in the failure conditions. These findings on the success-specific association of stability and the failure-specific association of perceived control with affective reactions, parallel those of Vallerand's (1987, study 2).

Finally, although the sport research of McAuley and Gross (1983) and Robinson and Howe (1987) revealed the control dimension to have an important influence in both success and failure conditions for adult populations, the findings of this study suggest that, in the youth sport achievement setting of a physical education program, perceived control may play an important role in the affect process only in failure outcomes.

4. Relationships Between The Appraisal Variables and Expectancy

The results for EXPECTANCY showed less clearly defined relationship patterns than did those for the affects. The regression analyses indicated perceived performance appraisal to have the greatest predictive power of all the appraisal variables for EXPECTANCY in all conditions except female/failure. In the latter condition, perceived performance was not associated with EXPECTANCY, which suggests that for young females it is the perception of the causes of failure - and not just failure - which may lead to low EXPECTANCY.

Stability had a significant augmenting role in all conditions except female/success. The Hotelling's T^2 tests,

however, indicated significant differences between stable and unstable attributions only in the male/success condition. This finding on the important role of stability is consistent with Weiner's (1985) model and related research, and indicated that in the success outcome the more stable the attribution then the more positive was EXPECTANCY, and that in the failure outcomes the more stable the attribution than the less positive was EXPECTANCY.

Locus also significantly augmented the predictive power of perceived performance and stability, but only in the male conditions of failure, and to a lesser extent, success. The Hotelling's T^2 tests showed a significant difference between internal and external attributions in the male/success condition. These findings were consistent with Weiner's (1985) model, indicating that in success conditions internal attributions are associated with positive EXPECTANCY due to an increased sense of self-esteem.

In the failure conditions, the results indicated the locus dimension to have a similar relationship with EXPECTANCY as it did in the success conditions. This is consistent with the findings of Forsyth and McMillan (1981), but incongruent with Weiner's (1985) model which suggests that internal attributions for failure outcomes are more associated with decreased EXPECTANCY. It may be that internal attributions, in conjunction with unstable attributions, lead to positive rather than negative EXPECTANCY, because individuals feel that such factors are amenable to change and, therefore, not necessarily a source of

future failure.

Finally, in the female/failure condition the dimension of control was shown to have an important association with EXPECTANCY. This finding is congruent with Weiner's (1985) model, indicating that the more uncontrollable the attribution then the more suppressed is EXPECTANCY, and consistent with the findings of Forsyth and McMillan (1981). In this failure condition, the results suggest that perceptions of lack of control in conjunction with stable factors are associated with lowered EXPECTANCY for similar future achievement tasks.

In summary , these findings indicated that as with affect, perceived performance had generally the greatest predictive power for EXPECTANCY in both success and failure conditions. Also, congruent with Weiner's (1985) model, the stability dimension was shown to have a strong association with EXPECTANCY in both success and failure conditions, with stable/internal factors being most clearly associated with EXPECTANCY.

5. Gender Differences and Relationship Patterns

(i) General Gender Differences:

The preliminary analyses revealed that the male group generally considered themselves to have performed more successfully than did the female group ($p<.01$). However, in terms of attributional style no differences were found between the males and females on any of the locus, stability, or control dimensions. This finding is consistent with the main body of

research in sport (e.g., Iso-Ahola, 1979; Roberts et al., 1981; Vallerand, 1987) and education (e.g., Forsyth and McMillan, 1981; Russell and McAuley, 1986).

In terms of gender differences on the affective reactions, males were shown to be significantly more positive on the GA of depressed-elated, and on the SRA's of ashamed-proud and incompetent-competent. Males had a more positive sense of self-esteem following the achievement outcome, and as such, were not surprisingly shown to be significantly higher than the females on EXPECTANCY.

(ii) Gender Patterns in the Relationships Between the Appraisal Variables and Affect:

The accounted-for variances of the canonical correlation and regression analyses indicated that the magnitude of the relationship between the appraisal variables and the affective reactions was similar for each of the male and female groups. The canoncial correlation analyses revealed accounted-for variances of 30% and 37% for the males and females respectively in the success condition, and 32% and 31% respectively in the failure conditions. Redundancy analyses revealed that the appraisal variables accounted for 14% and 17% of the variance in the affect set for males and females respectively in the success condition, and 11% and 13% respectively in the failure condition.

The regression analyses indicated that the set of appraisal variables was associated with each of the affect types to a similar extent for males and females. For males and females respectively, the appraisal variables accounted for 24% and 23%

of the variance in GA, 19% and 28% in SRA, and 12% and 20% in ORA in the success condition, and 19% and 22% of the variance in GA, 17% and 21% in SRA, and 12% and 17% in ORA in the failure condition.

For both males and females, the Perceived Success group were significantly more internal, stable, and controllable than the Perceived Failure group, and were also significantly more positive on all of the GA, SRA, and ORA reactions, as well as on EXPECTANCY.

In terms of apppraisal variable - affect relationships in the success condition, males and females also had similar patterns, with perceived peformance generally having the greatest predictive power for affect, and locus and stability generally having augmenting roles. Controllability was shown to be redundant in the affect process for both male and female success groups.

Gender patterns were also similar in the failure conditions, with perceived performance appraisal having the greatest predictive power for affect for both male and female conditions. The control dimension had an augmenting role for both male and female groups for GA and SRA, and locus had an augmenting role for both groups for ORA. Stability was shown to be redundent in the affect process for both failure groups.

In summary , the findings indicate that males and females share very similar appraisal variable-affect relationship patterns, with only slight differences existing primarily in the

failure condition. For this particular age-group, gender differences appear to be unimportant in determining appraisal variable-affect relationships.

(iii) Gender Patterns in the Relationship Between the Appraisal Variables and Expectancy

The accounted-for variances of the regression analyses indicated that the set of appraisal variables were associated with EXPECTANCY to a greater extent for males (21% and 36% for success and failure, respectively) than for females (10% and 7% for success and failure, respectively).

In summary , the findings indicated that males and females tend to have dissimilar appraisal variable - EXPECTANCY relationships. That is, EXPECTANCY for males in both success and failure conditions was primarily associated with perceived performance, as well as with stability and, to a lesser extent, locus. For females, however, perceived performance was the only appraisal variable which was associated with EXPECTANCY in the success condition, and perceived control and stability only were involved in the failure condition.

Conclusions

With specific regard to the achievement setting of youth sport, the findings of this study permit the following conclusions to be drawn :

1. In support of Weiner's (1985) model, both perceived success and perceived failure are affectively involving, with perceived success being associated with (a) greater internality, stability, and controllability of attributions, (b) more positive GA, SRA, and ORA reactions, and (c) increased EXPECTANCY.

2. Also in support of Weiner's (1985) model, the perceived performance and attributional appraisal variables are related to affective reactions and EXPECTANCY for both failure and success outcomes. The results further suggest that, with regard to the affect process, event appraisal involves several forms of cognitive antecedents other than those of perceived performance and attributional appraisals.

3. Perceived performance appraisal tends to be more strongly associated with the affect and EXPECTANCY processes for both success and failure outcomes than is attributional appraisal.

4. Perceived performance tends to have a more important role in the affect process in failure conditions than in success conditions.

5. In support of Weiner's (1985) model, attributional appraisal tends to have a more important role in the affect process in success outcomes than in failure outcomes.

6. With regard to the association between particular causal dimensions and affective reactions, certain dimensions appear to have roles of varying importance in each of the perceived success and perceived failure conditions. Locus tends to be important in the affect process, but particularly so for success outcomes. Stability tends to be important in the affect process in success outcomes, but redundant in failure conditions. Controllability tends to be important in the affect process in failure outcomes, but redundant in success outcomes.

7. The results of this study provide partial support for Weiner's (1985) model of achievement motivation and emotion. Congruent with the main postulates of this model, the following linkages were shown to exist:

    (i) perceived performance has the greatest predictive power of all the appraisal variables for GA in both success and failure outcomes,

(ii) internal and stable attributions are linked with positive SRA in success outcomes, and uncontrollable attributions are linked with negative SRA in failure outcomes,

(iii) internal attributions are linked with positive ORA in success outcomes, and external attributions are linked with negative ORA in failure outcomes,

(iv) stable and internal attributions are linked with positive EXPECTANCY in success outcomes, and unstable and uncontrollable attributions are linked with negative EXPECTANCY.

8. It is clear, however, that the proposed linkages of the model are not invariant. Contrary to Weiner's (1985) position, the findings indicated that:

(i) perceived performance appraisal has important associations not only with GA, but with SRA and ORA also, as well as with EXPECTANCY, and

(ii) that attributional appraisals may not always be involved in the affect process or always be associated with EXPECTANCY, but when operative they may influence each of the affect types and EXPECTANCY. Each of these findings are supportive of Vallerand's (1987) more recent intuitive-reflective appraisal model of affect in sport.

9. Males and females share similar appraisal variables-affect relationship patterns, with only slight differences existing primarily in the failure condition.

10. Males and females have dissimilar appraisal variables -EXPECTANCY relationships. The role of the stability dimension is augmented by the locus dimension for males in both success and failure outcomes, and by the control dimension for females in failure outcomes.

Directions for Future Research

The findings of this study have suggested the following directions for future research:

1. A limitation of this study was the reliance on one type of paper-pencil measurement. It is advised, therefore, that futher research on this topic with young age groups involve a greater variety of measurement procedures, which would validate the findings in a "multi-method" approach as described, for example, by Webb, Campbell, Schwartz, and

Sechrest, (1966). Such an approach would permit greater confidence in the findings by providing corroborative evidence from a variety of measurement procedures.

2. To more fully assess the applicability of attribution-affect theory in a youth sport achievement setting, it is recommended that further research be carried out to examine which of the causal dimensions appraisals are most frequently employed in certain types of circumstances (e.g., expected versus unexpected outcomes; private versus public declaration of causes for personal performance).

3. Although a large body of research exists which has examined the influence of teacher behavior on student performance (e.g., Brophy, 1981; Good, 1980) a negligible amount of research has been conducted on the attributional "messages" which teacher behavior and peer behavior may convey for the child's perception of the causes of his or her own performance. Although Bell-Gredler (1986) has attempted to make theoretical application of Weiner's (1985) theory to teacher-student and peer-student interactions, this area appears to offer important research opportunities. With specific regard to the youth sport domain, it is essential to conduct research of this type in situations of perceived failure since these are the settings in which attributions may have a detrimental long-term effect on achievement motivation in sport.

4. The CDS (Russell, 1982) has been shown to be a useful means

of measuring the dimensionality of particular causal attributes. However, it is recommended that those researchers wishing to study a younger age-group, conduct a careful assessment of the conceptual clarity of this instrument to ensure accurate and valid data.

5. Finally, future researchers of attribution and affect in sport should be aware of Vallerand's (1987) recently proposed sport-specific intuitive-reflective model of emotion. Although similar to Weiner's (1985) model in many respects, Vallerand has generated a number of postulates with specific regard to the achievement setting of sport, and thus provides a number of testable hypotheses with respect to the antecedents of affect in this particular achievement domain.

In conclusion, the findings of this study indicate that Weiner's (1985) attributional model of achievement motivation and emotion provides a useful theoretical framework for analysing the relationships which exist between the performance and attributional appraisal variables and affective reactions and expectancy in a sport setting. However, this study clearly demonstrates that youth sport is too complicated an achievement setting for a straight-forward application of Weiner's model. As such, the need exists for the development of a sport specific model of the antecedents of affect and expectancy. It is hoped that the findings of this study will prove to be of value in the pursuit of this goal.

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Appendix 1

Weiner's (1985, p. 564-566) Hypothetical Cognition-Emotion Scenario, Involving a Youth Baseball Player

The sequence depicted in Figure 2 will be used to discuss the following contrived (but surely extant) scenario: "A Little League baseball player performs very poorly during a game. Instead of appearing for the next contest, the boys stays at home." Other scenarios, such as the boy taking extra batting practise following failure (rather than missing the game) or taking extra batting practice after playing well (success), could have readily been used to portray how the theory shown in Figure 2 conceptualizes an achievement-related motivational episode.

Figure 2 reveals that a motivational sequence is initiated by an outcome that individuals interpret as positive (goal attainment) or negative (nonattainment of the goal). Inasmuch as affects are directly linked with outcomes (the primary appraisal), Figure 2 includes a connection between outcome and the reactions of happy (for success) and frustrated or sad (if the outcome was interpreted as a failure). These associations are designated with a 1 in the figure. In the baseball scenario, the boy performed poorly at the game and this will elicit general negative reactions.

A causal search is then undertaken to determine why the outcome occurred (Linkage 2). Some of the conditions that particularly promote this search, which were not discussed in the present article (see Weiner, 1985), are indicated in the figure.

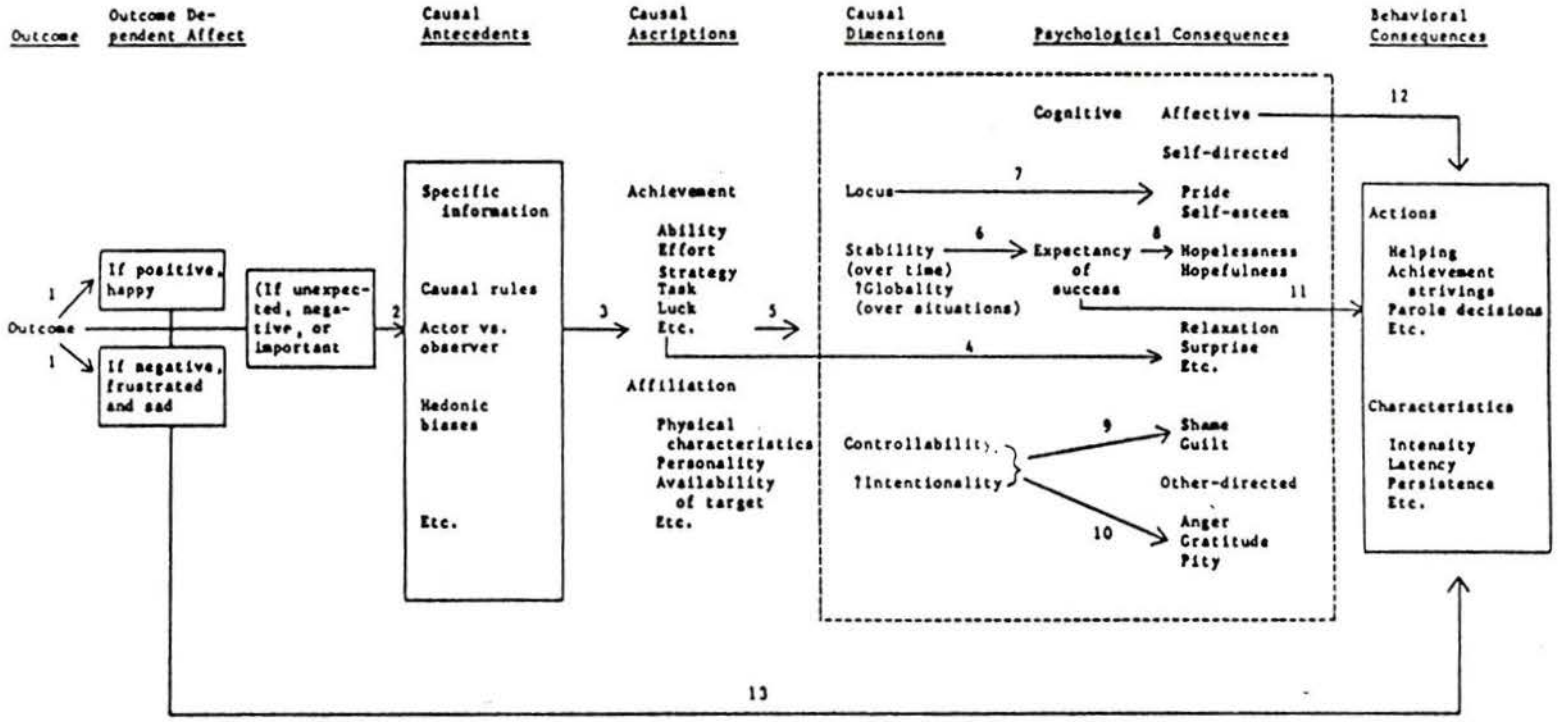

Figure 2. An attributional theory of motivation and emotion.

In our example, failure at a subjectively important act should result in the boy overtly or covertly wondering, "Why did I perform so poorly?" A large number of antecedents influence the causal explanation(s) reached. This popular topic also was not discussed in the present article. Some of the known attributional antecedents are included in Figure 2, such as specific information (e.g., past personal history, performance of others; see Kelly & Michela, 1980). The blanket etcetera at the bottom of the antecedents merely conveys that there are many unlisted determinants of the selected attribution.

The causal decision is biased toward a relatively small number of causes such as ability and effort in the achievement domain. Again Figure 2 is not complete, as denoted by the etcetera at the bottom of the causal lists. In our example, assume that the boy has played quite poorly in the past and that other children on the team are playing well. The boy also practiced many hours. On the basis of the past outcome history, social comparison, and effort expenditure, the boy decides that he is low in baseball-playing ability. That is, he thinks, "I failed because I am not any good at baseball" (Linkage 3). A unique affective reaction may be elicited by this causal decision (Linkage 4).

The cause is then located in dimensional space. This is depicted as Linkage 5 in the figure. As documented in Table 2, the three main properties of causes are locus, stability, and controllability, with globality and intentionality considered possible causal properties (and therefore accompanied

by question marks). The Little Leaguer ascribed his performance to lack of ability, which is likely to be perceived as internal, stable, and uncontrollable (although that placement must be analyzed from the phenomenology of the perceiver). It also might be unintentional and global ("I am poor at sports").

Causal dimensions have psychological consequences, being related to both expectancy and affect (which is presumed in this conception to be the value of goal attainment). The stability of a cause influences the relative expectancy of future success (Linkage 6). In our scenario, the boy anticipates repeated failure inasmuch as low ability is perceived as a stable cause. He also might have increased expectancy of failure in other sporting activities if the cause is perceived as global. That is, stability influences temporal aspects of expectancy, whereas globality influences cross-situational expectancies.

Turning to affective consequences, the locus of a cause exerts an influence on self-esteem and pride-internal ascriptions elicit greater self-esteem for success and lower self-esteem for failure than do external attributions (Linkage 7). The boy in our story failed because of a cause considered internal, and therefore he should be experiencing low self-esteem. The stability of the cause, by affecting expectancy, also fosters feelings of hopelessness (or hopefulness); this is indicated in Linkage 8. The Little Leaguer, with a history of failure and ascription of the current failure to low ability, should be feeling hopeless. Finally, controllability influences social emotions; controllable causes of personal failure promote

feelings of guilt, whereas uncontrollable causes generate shame (Linkage 9). These are represented in the figure as self-directed affects, as are the specific attribution-linked emotions of relaxation and surprise. Among the affects directed toward others are anger (given a cause of failure controllable by others), pity (given an uncontrollable cause; Linkage 10). The failing Little Leaguer is likely to be feeling ashamed of himself and humiliated (but not guilty), whereas his coach or his mother feels pity or feels sorry for him (but not angry).

Finally, expectancy and affect are presumed to determine action (Linkage 11, 12, and 13). The actions can be described according to their intensity, latency, and so on. In the baseball scenario, the boy has a low expectancy of future success and is feeling sad, low self esteem, ashamed, and hopeless. These conditions promote withdrawl and behaviors that are not instrumental to the attainment of the desired goal. He then stays home from the next game.

Appendix 2

Letter of Introduction to School Principals

Dear Principal:

I am a Ph.D. degree candidate at the University of Victoria wishing to investigate the effects of Physical Education class involvement and emotional reactions on student motivation.

My intention is to conduct this study in the Fall of this year with a sample of 800 boys and girls from the Victoria School District, and I would be most grateful if you would be willing to allow me to test the grade 8-9 Physical Education classes in your school.

The purpose of this research study is to analyze how the factors of student performance and the manner in which they attribute the causes for their performance are associated with emotional reactions and expectations for future involvement in Physical Education classes. The findings of this research study will, hopefully, have important implications for how Physical Education teachers can help in improving participation in sport experience.

Testing would simply require the students to respond to a written questionnaire (a copy of which is attached to this letter) at the completion of a Physical Education unit. This would involve minimal interruption of the normal school program. All data would be totally confidential, and the privacy of the students would not be infringed upon in any way.

Permission to conduct this study has been requested from the Victoria School Board and the University Committee of Research Involving Human Subjects. Should you require further information or have any questions concerning the investigation, please contact either myself (University: 721-8392, Home: 658-5769) or Dr. Bruce Howe, (University: 721-8373 or 721-8375).

Should you consent to my request, I would be pleased to hear from you at your earliest convenience and would be grateful of the opportunity to talk to the Physical Education teachers in your school. Many thanks.

Yours sincerely,

David W. Robinson

Appendix 3

Letter for Parental Consent

Dear Parent/Guardian:

A University of Victoria Graduate Student will be conducting a research project with some of our students. This project is aimed at understanding student motivation and their involvement in school sports lessons.

Information will be collected by the administering of a questionnaire, which will include questions on how students feel about their recent and future performances in Physical Education classes. All information is totally confidential and the student's privacy will not be infringed upon.

Permission to conduct the project has been gained from the Victoria School Board, the Physical Education teachers involved, and the University Committee of Research Involving Human Subjects.

Your cooperation in this project would be greatly appreciated. Its completion will provide beneficial assistance to Physical Education teachers in the school system. Please return the consent slip as soon as possible.

Yours sincerely,

I do/do not agree to allow

---

to participate in the project proposed by David Robinson from the University of Victoria.

---------- ----------

Signature of Parent/Guardian Date

Appendix 4

Introductory Comments Made to Subjects Prior to Testing

My name is Dave Robinson, I am a researcher from the School of Physical Education at the University of Victoria, where we are conducting research into the involvement of young people in sport and physical education.

In carrying out this research, we are basically trying to gain a better understanding of the feelings and emotions which you, the students, experience when you're involved in sport programs, such as in the P.E. programs in your school.

The information which you will provide today will be used to help teachers to structure their sport programs in a way that will lead to these programs being more enjoyable and more capable of fulfulling the needs of the students who participate in them.

All of your responses will be totally confidential, no-one shall read your questionnaire except myself, and no-one will at any time in the future be provided with any knowledge of your personal responses. Your responses will have no influence upon your P.E. grades.

This is not a test, there are no 'right' or 'wrong' answers. The 'correct' answer is what you honestly feel. Rather, this is a questionnaire designed to gather information.

It is extremely important, therefore, that you think very carefully before answering a question. Think carefully: be accurate in your response.

It is also extremely important that your answers be honest. Think carefully: be honest in your response.

These points are vitally important. Please try to be accurate in your responses, please be honest in your responses.

Appendix 5

The (Amended) Physical Education Questionnaire

Appendix 5a

Student's Name: _____ Male/Female: _____

Age: _____years _____months

Name of School: _____

Activity Course Recently Completed: _____

Please read each question carefully. If you are confused or unclear about anything, raise your hand and assistance will be given.

Please do not rush. Think very carefully before answering each question.

Please be honest: This is extremely important.

Your answers will be totally confidential: No one except the researcher from the University of Victoria shall read this questionnaire.

Your responses will have no influence at all upon your present or future grades in P.E. classes.

Many thanks for your help!

Appendix 5b

1. PERSONAL PERFORMANCE

Think carefully about how you did in the P.E. course that you have just recently completed. How successful do you feel you were in this activity?

Circle the appropriate number.

1	2	3	4	5	6	7
Very Poor		Somewhat Poor		Somewhat Successful		Very Successful

Appendix 5c

2. CAUSES FOR YOUR PERSONAL PERFORMANCE

Part A

After thinking carefully about how you did in the P.E. course, list what you consider to be the major cause (or causes) for how well you did in that activity course.

Think carefully about this. Be as specific as you can be in your answer.

Major Cause or Causes: _____

_____

Part B

Now think about the cause or causes you have just given. The questions below concern your ideas and opinions about this cause or causes. Circle one number for each of the following scales.

1. Is the cause(s) something that:

Reflects an aspect of yourself	7	6	5	4	3	2	1	Reflects an aspect of the situation

2. Is the cause(s):

Controllable by you or other people	7	6	5	4	3	2	1	Uncontrollable by you or other people

3. Is the cause(s) something that is:

Permanent	7	6	5	4	3	2	1	Temporary

4. Is the cause(s) something:

Intended by you or other people	7	6	5	4	3	2	1	Unintended by you or other people

5. Is the cause(s) something that is:

Outside of you	7	6	5	4	3	2	1	Inside of you

6. Is the cause(s) something that is:

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

7. Is the cause(s):

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

8. Is the cause(s) something that is:

Changeable	7	6	5	4	3	2	1	Unchanging

9. Is the cause(s) something for which:

No one is responsible	7	6	5	4	3	2	1	Someone is responsible

Appendix 5d

3. FEELINGS ASSOCIATED WITH YOUR PERFORMANCE IN THE P.E. COURSE

Think carefully about how well you did in the P.E. course and about the major cause or causes you have given for your performance. Then indicate the extent to which you have the following feelings.

Circle one number on each of the following scales.

1	2	3	4	5	6	7
Very Unsatisfied		Somewhat Unsatisfied		Somewhat Satisfied		Very Satisfied

1	2	3	4	5	6	7
Very Angry at Others		Somewhat Angry at Others		Somewhat Thankful to Others		Very Thankful to Others

Very Unhappy	1	Very Ashamed	1	Very Unconfident	1
	2		2		2
Somewhat Unhappy	3	Somewhat Ashamed	3	Somewhat Unconfident	3
	4		4		4
Somewhat Happy	5	Somewhat Proud	5	Somewhat Confident	5
	6		6		6
Very Happy	7	Very Proud	7	Very Confident	7

Very Hostile Toward Others	1	Very Depressed	1	Very Ungrateful	1
	2		2		2
Somewhat Hostile Toward Others	3	Somewhat Depressed	3	Somewhat Ungrateful	3
	4		4		4
Somewhat Helpful Toward Others	5	Somewhat Elated	5	Somewhat Grateful	5
	6		6		6
Very Helpful Toward Others	7	Very Elated	7	Very Grateful	7

Very Incompetent	1
	2
Somewhat Incompetent	3
	4
Somewhat Competent	5
	6
Very Competent	7

Very Guilty About Your Performance	1
	2
Somewhat Guilty About Your Performance	3
	4
Somewhat Guiltless About Your Performance	5
	6
Very Guiltless About Your Performance	7

Appendix 5e

4. EXPECTATIONS FOR THE FUTURE

Think about how you feel about your performance in the P.E. course you have recently completed. How well do you expect to do in similar activities in the future?

Circle the appropriate number.

1	2	3	4	5	6	7
Very Poorly		Somewhat Poorly		Somewhat Successfully		Very Successfully

Appendix 6

The Original Physical Education Questionnaire

Appendix 6a

Name of School: _____

Please think carefully before answering each question.

There is no time-limit; take enough time to answer each question with care and accuracy.

Please be honest in your answers. This is extremely important.

If you are confused or unclear about a question, raise your hand and assistance will be given.

Answer all questions. After completing the questionnaire please check that you have answered every question.

Many thanks for your help!

Appendix 6b

1. PERSONAL PERFORMANCE

Think carefully about how you did in the P.E. course that you have just recently completed. How successful do you feel you were in this activity?

Circle the appropriate number.

1	2	3	4	5	6	7
Very Poor		Somewhat Poor		Somewhat Successful		Very Successful

Appendix 6c

2. CAUSES FOR YOUR PERSONAL PERFORMANCE

Part A

After thinking carefully about how you did in the P.E. course, list what you consider to be the major cause (or causes) for how well you did in that activity course.

Major cause or causes: _____

_____

_____

_____

_____

_____

Part B

Now think about the cause or causes you have written above. The questions below concern your ideas and opinions about this cause or causes. Circle one number for each of the following scales.

1. Is the cause(s) something that:

Reflects an aspect of yourself	7	6	5	4	3	2	1	Reflects an aspect of the situation

2. Is the cause(s)

Controllable by you or other people	7	6	5	4	3	2	1	Uncontrollable by you or other people

3. Is the cause(s) something that is:

Permanent	7	6	5	4	3	2	1	Temporary

4. Is the cause(s) something:

Intended by you or other people	7	6	5	4	3	2	1	Unintended by you or other people

5. Is the cause(s) something that is:

Outside of you	7	6	5	4	3	2	1	Inside of you

6. Is the cause(s) something that is:

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

7. Is the cause(s):

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

8. Is the cause(s) something that is:

Changeable	7	6	5	4	3	2	1	Unchanging

9. Is the cause(s) something for which:

No one is responsible	7	6	5	4	3	2	1	Someone is responsible

Appendix 6d

3. FEELINGS ASSOCIATED WITH YOUR PERFORMANCE IN THE P.E. COURSE

Think carefully about how well you did in the P.E. course and about the major cause or causes you have given for you performance. Then indicate the extent to which you have the following feelings:

Circle one number on each of the following scales.

1	2	3	4	5	6	7
Very Unsatisfied		Somewhat Unsatisfied		Somewhat Satisfied		Very Satisfied

1	2	3	4	5	6	7
Very Unpleasantly Astonished		Somewhat Unpleasantly Astonished		Somewhat Pleasantly Astonished		Very Pleasantly Astonished

Very Ashamed	1
	2
Somewhat Ashamed	3
	4
Somewhat Proud	5
	6
Very Proud	7

Very Unconfident	1
	2
Somewhat Unconfident	3
	4
Somewhat Confident	5
	6
Very Confident	7

Very Unpleasantly Surprised	1
	2
Somewhat Unpleasantly Surprised	3
	4
Somewhat Pleasantly Surprised	5
	6
Very Pleasantly Surprised	7

Very Annoyed at Others	1
	2
Somewhat Annoyed at Others	3
	4
Somewhat Thankful to Others	5
	6
Very Thankful to Others	7

Very Incompetent	1	Very Guilty About Your Performance	1
	2		2
Somewhat Incompetent	3	Somewhat Guilty About Your Performance	3
	4		4
Somewhat Competent	5	Somewhat Guiltless About Your Performance	5
	6		6
Very Competent	7	Very Guiltless About Your Performance	7

Very Ungrateful	1	Very Hostile Toward Others
	2	
Somewhat Ungrateful	3	Somewhat Hostile Toward Others
	4	
Somewhat Grateful	5	Somewhat Helpful Toward Others
	6	
Very Grateful	7	Very Helpful Toward Others

Very Depressed	1	Very Unhappy
	2	
Somewhat Depressed	3	Somewhat Unhappy
	4	
Somewhat Elated	5	Somewhat Happy
	6	
Very Elated	7	Very Happy

Appendix 6e

4. EXPECTATIONS FOR THE FUTURE

Think about how you feel about your performance in the P.E. course you have recently completed. How well do you expect to do in similar activities in the future?

Circle the appropriate number.

1	2	3	4	5	6	7
Very Poorly		Somewhat Poorly		Somewhat Successfully		Very Successfully

Appendix 7

Means, S.D.s, For Each Variable, and Correlations Within Each Set of Variables For Each of The Four Gender/Perceived Performance Conditions

Appendix 7a

Condition 1. Male/Perceived Success

Means, S.D.s, For Each Variable, and Correlations Within Each Set of Variables

VARIABLE	MEAN	ST DEV
PERF	5.98295455	0.68012126
CON	14.87500000	3.58681714
INT	15.27272727	3.87439144
STA	12.25568182	4.49221187
UNSAT	5.47159091	1.37291754
ANG	4.76136364	1.27834105
UNCON	5.47159091	1.27359548
ASHAM	5.37500000	1.21713950
UNHAP	5.46590909	1.25992166
UNGRA	5.30113636	1.26274026
GUI	5.64204545	1.36161430
INCOM	5.67613636	1.20128448
DEP	5.44318182	1.25909677
MOS	4.84090909	1.42135841

CORRELATIONS AMONG THE ATTRIBUTE MEASUREMENTS

	PERF	CON	INT	STA
PERF	1.0000	0.1186	0.1731	0.1080
CON	0.1186	1.0000	0.0452	-0.0342
INT	0.1731	0.0452	1.0000	0.4927
STA	0.1080	-0.0342	0.4927	1.0000

CORRELATIONS AMONG THE EMOTIONS

	UNSAT	ANG	UNCON	ASHAM	UNHAP	UNGRA	GUI	INCOM	DEP	MOS
UNSAT	1.0000	0.3575	0.6074	0.5536	0.5792	0.5076	0.4393	0.4084	0.5098	0.4486
ANG	0.3575	1.0000	0.3292	0.3186	0.4668	0.4837	0.2100	0.1801	0.4957	0.4948
UNCON	0.6074	0.3292	1.0000	0.5193	0.4748	0.3909	0.4307	0.5449	0.4498	0.3258
ASHAM	0.5536	0.3186	0.5193	1.0000	0.5934	0.4541	0.5366	0.5134	0.5770	0.3518
UNHAP	0.5792	0.4668	0.4748	0.5934	1.0000	0.5686	0.3709	0.4174	0.7264	0.4724
UNGRA	0.5076	0.4837	0.3909	0.4541	0.5686	1.0000	0.2691	0.3246	0.5410	0.5490
GUI	0.4393	0.2100	0.4307	0.5366	0.3709	0.2691	1.0000	0.4423	0.3997	0.1978
INCOM	0.4084	0.1801	0.5449	0.5134	0.4174	0.3246	0.4423	1.0000	0.4015	0.2775
DEP	0.5098	0.4957	0.4498	0.5770	0.7264	0.5410	0.3997	0.4015	1.0000	0.4004
MOS	0.4486	0.4948	0.3258	0.3518	0.4724	0.5490	0.1978	0.2775	0.4004	1.0000

Appendix 7b

Condition 2. Female/Perceived Success

Means, S.D.s, For Each Variable, and Correlations Within Each Set of Variables

VARIABLE	MEAN	ST DEV
PERF	5.69696970	0.682702088
CON	14.66666667	3.616094873
INT	15.08060606	3.817720323
STA	12.88383838	4.526475014
UNSAT	5.31818182	1.315573538
ANG	4.92929293	1.296246242
UNCON	5.26262626	1.341155336
ASHAM	5.14646465	1.154889243
UNHAP	5.27777778	1.269961873
UNGRA	5.05050505	1.160900555
GUI	5.55555556	1.137476254
INCOM	5.36868687	1.153423196
DEP	5.25252525	1.182301243
MOS	5.08565657	1.234336305

CORRELATIONS AMONG THE ATTRIBUTE MEASUREMENTS

	PERF	CON	INT	STA
PERF	1.0000	0.1830	0.2213	0.1791
CON	0.1830	1.0000	0.2662	0.2358
INT	0.2213	0.2662	1.0000	0.5165
STA	0.1791	0.2358	0.5165	1.0000

CORRELATIONS AMONG THE EMOTIONS

	UNSAT	ANG	UNCON	ASHAM	UNHAP	UNGRA	GUI	INCOM	DEP	MOS
UNSAT	1.0000	0.3496	0.4818	0.3768	0.5970	0.4514	0.2748	0.3572	0.4050	0.3434
ANG	0.3496	1.0000	0.3757	0.3460	0.3728	0.5860	0.2884	0.3502	0.4092	0.4598
UNCON	0.4818	0.3757	1.0000	0.6076	0.4725	0.3599	0.3730	0.4654	0.3997	0.2716
ASHAM	0.3768	0.3460	0.6076	1.0000	0.5432	0.4715	0.4826	0.4013	0.4747	0.3137
UNHAP	0.5970	0.3728	0.4725	0.5432	1.0000	0.5861	0.3565	0.4669	0.6292	0.3639
UNGRA	0.4514	0.5860	0.3599	0.4715	0.5861	1.0000	0.3477	0.3613	0.5232	0.4901
GUI	0.2748	0.2884	0.3730	0.4826	0.3565	0.3477	1.0000	0.4041	0.4236	0.2740
INCOM	0.3572	0.3502	0.4654	0.4013	0.4669	0.3613	0.4041	1.0000	0.4525	0.3608
DEP	0.4050	0.4092	0.3997	0.4747	0.6292	0.5232	0.4236	0.4525	1.0000	0.3921
MOS	0.3434	0.4598	0.2716	0.3137	0.3639	0.4901	0.2740	0.3608	0.3921	1.0000

Appendix 7c

Condition 3. Male/Perceived Failure

Means, S.D.s, For Each Variable, and Correlations Within Each Set of Variables

VARIABLE	MEAN	ST DEV
PERF	4.22285714	0.923227010
CON	12.49714286	4.004127591
INT	13.54857143	3.896164591
STA	11.11428571	4.025575054
UNSAT	4.21142857	1.548408792
ANG	4.24000000	1.193661420
UNCON	4.40571429	1.458613508
ASHAM	4.42857143	1.090336716
UNHAP	4.39428571	1.254404392
UNGRA	4.31428571	1.183493479
GUI	4.71428571	1.433816316
INCOM	4.65142857	1.334203329
DEP	4.37714286	1.257411525
HOS	4.48000000	1.193083516

CORRELATIONS AMONG THE ATTRIBUTE MEASUREMENTS

	PERF	CON	INT	STA
PERF	1.0000	0.2341	0.0793	0.0349
CON	0.2341	1.0000	-0.0338	0.1027
INT	0.0793	-0.0338	1.0000	0.1807
STA	0.0349	0.1027	0.1807	1.0000

CORRELATIONS AMONG THE EMOTIONS

	UNSAT	ANG	UNCON	ASHAM	UNHAP	UNGRA	GUI	INCOM	DEP	HOS
UNSAT	1.0000	0.3486	0.4936	0.3000	0.5427	0.4183	0.2836	0.2890	0.4400	0.2558
ANG	0.3486	1.0000	0.3068	0.1236	0.4700	0.4426	0.0269	0.0564	0.3912	0.2536
UNCON	0.4936	0.3068	1.0000	0.3887	0.3926	0.3285	0.3250	0.4363	0.4237	0.1682
ASHAM	0.3000	0.1236	0.3887	1.0000	0.2749	0.1801	0.3471	0.4746	0.3467	0.1856
UNHAP	0.5427	0.4700	0.3926	0.2749	1.0000	0.4619	0.1365	0.2234	0.6157	0.3951
UNGRA	0.4183	0.4426	0.3285	0.1801	0.4619	1.0000	0.1277	0.2736	0.4606	0.3118
GUI	0.2836	0.0269	0.3250	0.3471	0.1365	0.1277	1.0000	0.4614	0.2482	0.0773
INCOM	0.2890	0.0564	0.4363	0.4746	0.2234	0.2736	0.4614	1.0000	0.3631	0.1165
DEP	0.4400	0.3912	0.4237	0.3467	0.6157	0.4606	0.2482	0.3631	1.0000	0.4226
HOS	0.2558	0.2536	0.1682	0.1856	0.3951	0.3118	0.0773	0.1165	0.4226	1.0000

Appendix 7d

Condition 4. Female/Perceived Failure

Means, S.D.s, For Each Variable, and Correlations Within Each Set of Variables

VARIABLE	MEAN	ST DEV
PERF	4.04060914	0.844173086
CON	12.39086294	4.395558724
INT	13.79695431	3.591288548
STA	10.84771574	4.230285138
UNSAT	4.13197970	1.360088022
ANG	4.34010152	1.064772685
UNCON	4.29441624	1.271598814
ASHAM	4.20304569	1.054336492
UNHAP	4.29441624	1.226687668
UNGRA	4.42131980	1.064334747
GUI	4.48730964	1.346231085
INCOM	4.45177665	1.153503709
DEP	4.11167513	1.236236775
MOS	4.50761421	1.081473340

CORRELATIONS AMONG THE ATTRIBUTE MEASUREMENTS

	PERF	CON	INT	STA
PERF	1.0000	0.0686	0.1306	0.2503
CON	0.0686	1.0000	-0.0874	0.1925
INT	0.1306	-0.0874	1.0000	0.2236
STA	0.2503	0.1925	0.2236	1.0000

CORRELATIONS AMONG THE EMOTIONS

	UNSAT	ANG	UNCON	ASHAM	UNHAP	UNGRA	GUI	INCOM	DEP	MOS
UNSAT	1.0000	0.4268	0.2783	0.3975	0.6433	0.5852	0.3381	0.2903	0.3766	0.2248
ANG	0.4268	1.0000	0.3025	0.1154	0.5206	0.4357	0.0546	0.3104	0.4400	0.3633
UNCON	0.2783	0.3025	1.0000	0.3814	0.4086	0.3603	0.2525	0.4410	0.4691	0.3508
ASHAM	0.3975	0.1154	0.3814	1.0000	0.4901	0.4508	0.6057	0.2850	0.4366	0.1776
UNHAP	0.6433	0.5206	0.4086	0.4901	1.0000	0.6861	0.3545	0.3454	0.5973	0.2598
UNGRA	0.5852	0.4357	0.3603	0.4508	0.6861	1.0000	0.3118	0.4052	0.4720	0.3186
GUI	0.3381	0.0546	0.2525	0.6057	0.3545	0.3118	1.0000	0.2583	0.4668	0.2848
INCOM	0.2903	0.3104	0.4410	0.2850	0.3454	0.4052	0.2583	1.0000	0.4475	0.4860
DEP	0.3766	0.4400	0.4691	0.4366	0.5973	0.4720	0.4668	0.4475	1.0000	0.4840
MOS	0.2248	0.3633	0.3508	0.1776	0.2598	0.3186	0.2848	0.4860	0.4840	1.0000

VITA

Surname: ROBINSON Given Names: DAVID WILLIAM

Place of Birth: COUNTY DURHAM, ENGLAND

Date of Birth: JANUARY 11, 1955

Educational Institutions Attended, With Dates of Entering And Leaving:

UNIVERSITY OF BIRMINGHAM, ENGLAND,	1974 TO	1977
UNIVERSITY OF LOUGHBOROUGH, ENGLAND	1977 TO	1978
UNIVERSITY OF VICTORIA, BRITISH COLUMBIA	1981 TO	1983
UNIVERSITY OF VICTORIA, BRITISH COLUMBIA	1985 TO	1988

Degrees, Diplomas, Etc., Awarded, With Dates And Names of Institutions:

B.A. COM. HONS.	1977	UNIVERSITY OF BIRMINGHAM, ENGLAND
POST. GRAD. CERT. ED.	1978	UNIVERSITY OF LOUGHBOROUGH, ENGLAND
M.A.	1983	UNIVERSITY OF VICTORIA, B.C.

Honors and Awards:

COMMONWEALTH SCHOLARSHIP, 1981-1983

UNIVERSITY OF VICTORIA SPECIAL SCHOLARSHIP, 1981-1983

UNIVERSITY OF VICTORIA FELLOWSHIP, 1985-1988

Publications:

Robinson, D.W. (1985). Stress seeking: Selected behavioral characteristics of elite rock climbers. Journal of Sport Psychology, 7, 400-404.

Robinson, D.W., & Howe, B.L. (1987). Participant observer study of three elite rock climbers in a climbing setting. Outdoor Recreation, 2, 17-27.

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AUTHOR [redacted]

DAVID WILLIAM ROBINSON

Name

Sept. 16th 1988

Date