

THE EFFECTS OF RETRAINING OPTIMISTIC THINKING PATTERNS ON
THE PERFORMANCE OF ATHLETES

KRISTA ALLEN SHAFER

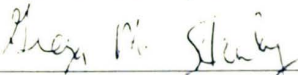
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Frederick G. Grieve, Ph.D.
Major Professor

We have read this thesis and
recommend its acceptance:



Gregg M. Steinberg, Ph.D.



Thomas A. Timmerman, Ph.D.

Accepted for the Council:



Parris Watts, Ph.D.
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THE EFFECTS OF RETRAINING OPTIMISTIC THINKING PATTERNS ON THE
PERFORMANCE OF ATHLETES

A Thesis

Presented for the Master of Arts Degree

Austin Peay State University

Krista Allen Shafer

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ABSTRACT

This study examined the effect of retraining thinking patterns to be more optimistic on the performance of college baseball players. Each player on the team completed the Sports Attributional Style Scale (Hanrahan, Grove, & Hattie, 1989). Baseline data was taken for a week and then the four groups of players underwent two retraining sessions. The ABCDE method, with F being added by the researcher, developed by Seligman and colleagues (1990) was used for retraining. Two scenarios were presented for each group of players to work through with the researcher. Group one was retrained in week two and given the Sports Attributional Style Scale; group two was retrained in week three and given the scale, and so forth. A final week of post training data was gathered and all of the players completed the Sports Attributional Style Scale once more. Objective data such as batting averages, on base percentage, earned run average, and walks and hits per innings pitched were calculated for each player. A subjective rating, on a Likert scale, of game success or failure was taken. In addition, a Likert scale asking the players to rate how much they used optimistic thinking in each game was administered. Results indicated that this method of retraining was not successful in changing thinking patterns. However, increases did occur in the participants' batting averages and on base percentages. Unfortunately, these increases did not reach a statistical level of significance. Finally, the implications and directions for further research are discussed.

TABLE OF CONTENTS

CHAPTER		PAGE
I.	INTRODUCTION	1
	Learned helplessness	1
	Explanatory style	6
	Attribution retraining	14
	Attributions	14
	Causal attributions in sports	18
	Retraining	21
	Retraining in a clinical setting	26
	Limitations of previous studies	29
	The present study	30
II.	METHOD	32
	Participants	32
	Design	32
	Measures	32
	Optimism and pessimism	32
	Objective performance	33
	Subjective performance	33
	Retraining	34
	Procedure	35
III.	RESULTS	36
	SASS	36
	Manipulation check	36
	Objective performance	36
	Subjective performance	37
	Individual groups	37
IV.	DISCUSSION	45
V.	REFERENCES	50
VI.	APPENDICES	57
	A. Retraining	58
	B. Adversities	62
	C. Informed consent document	67
VITA	71

LIST OF FIGURES

Figure		Page
1.	Game By Game Objective Performance for Group 1. .	38
2.	Game By Game Subjective Measures for Group 1 . .	39
3.	Game By Game Objective Performance for Group 2. .	40
4.	Game By Game Subjective Measures for Group 2 . .	41
5.	Game By Game Objective Performance for Group 3. .	42
6.	Game By Game Subjective Measures for Group 3 . .	42
7.	Game By Game Objective Performance for Group 4. .	43
8.	Game By Game Subjective Measures for Group 4 . .	44

CHAPTER I

INTRODUCTION

Athletes are constantly looking for ways to improve their performance, and one way to do this is to change the way they think about their performance (Murphy, 1994). As much as “hitting the weights” and extra practice can prepare athletes for the physical demands of sports, the way in which these athletes attribute their successes and failures can be equally valuable in improving of performance. This change in attributional style could be beneficial in preventing damaging self-doubts (Seligman, 1990) which can in turn lead to slumps. Thus, changing negative thoughts about failure should promote better performance. Several attribution retraining methods have been successful in a variety of performance areas. However, none has investigated attribution retraining with baseball players during competition. This study will train baseball players to think more optimistically and examine the effects of such training on actual game performance.

Learned Helplessness

During the 1970's, Seligman (1975) proposed the theory of learned helplessness. He exposed dogs to electric shock; some of the dogs were given a way to escape the shock and others were not. He discovered that those dogs who were not allowed to escape the shock in the first trials did not attempt to escape when it was later possible. The dogs learned that no matter what they did in the first situation, there was no way to avoid the shocks. Therefore, in the second situation they did not try to assert any type of control, rather they just lay there and took the shocks. It was proposed by the researcher that these animals learned

that the outcome of the situation was not contingent upon their behavior (Peterson & Seligman, 1987). They learned to be helpless.

Based on the research with dogs, Seligman formulated a position that humans can also become learned helpless. Peterson and Seligman (1987) are quick to point out that a distinction must be made between good and bad events, and their perception of control. It is not often that people perceive good events to be out of their control, thus rendering them helpless. Bad events, however, are often perceived as beyond control and lead to helplessness. The attributions given for negative events promote the position of helplessness and pessimism. It is evident that feeling ineffectual in one's life can cause people to even quit trying. This apparent lack of control could perpetuate depression and lethargy (Seligman, 1975). Seligman (1975) coined the term learned helplessness to describe this phenomenon.

A variety of studies have been conducted examining learned helplessness in children and its effects on performance and emotions. Nolen-Hoeksema, Girgus, and Seligman (1986) administered a battery of tests to children in an attempt to predict causal factors of depression and learned helplessness. Craske (1988) used above-skill-level math problems to induce learned helplessness. She then retrained the children, pointing to a lack of effort as the source of failure rather than skill or luck.

Nolen-Hoeksema et al. (1986) examined learned helplessness in children. Participants, who were 168 children ranging in age from eight to 11, completed the Children's Depression Inventory (CDI; Kovacs, 1980), the Children's ASQ

(CASQ; Seligman et al., 1984), and the Life Events Questionnaire (LEQ; adapted from Coddington, 1972). These measures were completed five times over the course of a year. The teachers of these students were asked to fill out a behavior checklist during the fifth administration, and the experimenters acquired each child's score on the California Achievement Test (CAT; California Testing Bureau, 1982). The results supported the predictions that a more pessimistic explanatory style leads to higher levels of depression. Future levels of depression were also predicted in some cases. The combination of life stressors and a pessimistic explanatory style were accurate predictors of future depressive episodes. Classroom achievement was also adversely affected; the CAT scores were positively correlated ($r = .64$) with helpless behaviors in the classroom, and classroom behaviors were positively correlated ($r = .27$) with levels of depression that the children were currently experiencing. This study indicates that explanatory style and learned helplessness in children can be predictive of depression and achievement due to the stability of CDI scores in administrations two through five (r ranged from .46 to .71). The CASQ was also stable over time (r ranged from .35 to .61). Those children with a pessimistic explanatory style had more achievement problems and higher incidents of depression as noted by CDI scores. These scores were negatively correlated with the CASQ ($r = -.29$ to $-.48$), and positively correlated with the LEQ ($r = .26$ to $.40$).

Craske (1988) also retrained children in the math field. This study examined 35 boys and 34 girls from the fourth, fifth, and sixth grades. Craske used the School Form of the Coopersmith Self-Esteem Inventory (SEI;

Coopersmith, 1981) to measure self-concept. Giving the children a set (B) of math problems above their competency level induced a failure experience. Three other sets (A, C, D) of problems that the children could work, one before (A) and two after (C, D) the difficult set, were also given to the participants. Following set B, an attribution scale was provided. Each child rated, on a Likert scale ranging from 1 to 7, his/her performance on the dimensions of luck, task difficulty, effort and ability. Performance following failure was determined by taking the difference between the sets A and C. In set D the children were told that the problems were too hard, and they did not have to do them all. However, these problems were on the childrens' levels of ability.

There were 29 participants who did worse on set C than A. These participants received retraining after they were divided into a learned helpless (LH) and a self-worth (SW) group. Those who did better on set D than A were put into the SW group, and those who did worse on set D than set A were the LH group. The LH group, because of previous failure, allowed the warning of the difficulty of set D to reduce their efforts to solve these problems. The children were told that lack of effort was the source of success or failure. In training, the children were provided with problems they could solve and ones that they were expected not to be able to solve. A list of attributions was provided for success and failure. Upon the completion of each problem the children chose one of the attributions from the list. Effort was emphasized as the determining factor of success or failure. Following retraining, participants were again presented with an

easy set, a hard set, and another easy set of problems. The Likert scale for attributions was also readministered (Craske, 1988).

No significant relationship was found between self-concept and the attributions these children made for failure. The results for the LH group showed that 13 of the 18 children did improve following failure. This indicates that the attribution retraining was successful for these children. However, only two of the 11 SW group members improved. This study supports the notion that appropriate attributional retraining can help to diminish learned helplessness (Craske, 1988).

In summary, these studies provide good information concerning children and learned helplessness. A more pessimistic explanatory style and learned helplessness type behavior was found to lead to heightened levels of depression and achievement (Nolen-Hoeksema et al., 1986) yet retraining was found to ameliorate the learned helplessness (Craske, 1988).

While these studies illustrate learned helplessness in the classroom, it is not limited to the realms of depression and math problems. It can also occur in other areas of life, such as sports. For example, a pitcher might have a series of bad nights on the mound. This situation could cause that pitcher to feel as if he is no longer in control of his arm, and convince himself that this is a slump. The same applies to a batter who goes hitless for a week or two. If these players allow the failure to manipulate their thinking and they lose a perspective of control, learned helplessness can occur.

Explanatory Style

Seligman has proposed that individuals have different styles of how they may formulate their attributions. This style is called explanatory style for an event. Individuals explain the causal nature of events by an internal dialogue of rationalization called explanatory style. Explanatory style serves to shape the future expectations of that person (Peterson & Seligman, 1987). There are several types of explanatory style; however, for the purpose of this study, we are only interested in optimistic and pessimistic explanatory style. The determinant of possessing an optimistic or pessimistic explanatory style is a function of three dimensions: internal/external, global/specific, and stable/unstable (Seligman, 1990). The internal/external dimension refers to whether or not individuals attribute the cause of an event to themselves (internal) or to an outside (external) source. Optimistic thinkers explain success as a result of internal processes and failure as a result of external processes. Conversely, pessimistic thinkers do just the opposite; they attribute success to external processes, and failure to internal processes (Peterson & Seligman, 1987). The global/specific dimension indicates whether the success or failure permeates the individual's life (global) or whether it pertains to just one event (specific). Here, optimistic thinkers see success as wide ranging (global) and negative outcomes specific to that instance. Pessimistic thinkers view success as specific to the situation and failure as global (Peterson & Seligman, 1987). The stable/unstable dimension examines whether the current trend, success or failure, will continue (stable) or whether it is momentary (unstable). Optimistic thinkers view success as the stable course of action and

failure as unstable and fleeting. Pessimistic thinkers, on the other hand, view success as unstable, and failure as stable (Peterson & Seligman, 1987). Therefore, based on the differences in the explanation of events, optimists and pessimists should react differently to success and to failure. In summary, an individual with an optimistic explanatory style views failure as external, unstable and specific whereas an individual with pessimistic explanatory style views failure as internal, stable and global.

Based on these differences in style, optimists should handle failure better than pessimists. Most studies have supported this notion in a variety of different performance settings. Peterson and Seligman (1987) utilized their own Content Analysis of Verbatim Explanation (CAVE) technique to investigate how explanatory style affected health and life span. The CAVE technique was also used by Burns and Seligman (1989) along with other measures such as the BDI (Beck, 1967) to determine whether explanatory style was stable over the life span. Examining the influence of explanatory style on the grades of college freshman was the purpose of the study by Peterson and Barrett (1987). In a series of studies by Seligman and Schulman (1986) the explanatory style and productivity of insurance agents was examined. Seligman, Nolen-Hoeksema, Thornton, and Thornton (1990) investigated explanatory style in the sports arena. Sellers and Peterson (1993) continued in the sporting arena by using National Collegiate Athletic Association (NCAA) Division I football players. Each of these studies is important to the growing literature investigating explanatory style and will be discussed in greater detail.

Peterson and Seligman (1987) conducted three studies, and found that the manner in which people explain the events that happen to them correlates with illness. They used the CAVE technique for these studies. This technique takes quotes from people and analyzes the quotes for the qualities of internality, stability, and globality. Based on this analysis, optimism and pessimism can be determined. This technique is used when access to individuals is very difficult and/or the participants are no longer living. For instance, the first group of participants examined were 94 baseball Hall of Famers from the first half of the twentieth century. For each individual at least two quotes that provided an explanation for good and bad events were analyzed. There were 30 players who had at least two quotes concerning explanations for bad events, and 24 players who had at least two quotes for good events. Peterson and Seligman found that those men who rated highly on internality, stability, and globality for bad events and externality, instability, and specificity for good events (a pessimistic pattern) lived significantly shorter lives than those who rated highly on externality, instability, and specificity for bad events and internality, stability, and globality for good events (an optimistic pattern).

The second study used data collected from the Grant Study that began in 1939. Participants in the Grant Study consisted of 268 male students at a well-known university (Peterson & Seligman, 1987). They were given personality and intelligence tests as well as eight interviews with a psychiatrist. Ongoing research with these participants has been done, including periodic questionnaires on health and family information. Peterson and Seligman (1987) again used the CAVE

technique with responses from 18 of these men from a 1946 questionnaire concerning their World War II experiences. Ratings for pessimistic explanatory style were positively correlated, $r = .40$, with the ratings from the questionnaires on a scale ranging from 1 (healthy) to 5 (dead). They found that a more negative explanatory style is related to a higher incidence of mortality and morbidity (Peterson & Seligman, 1987).

In another study, Peterson and Seligman (1987) examined 172 college students (115 females and 57 males) to determine the effects of explanatory style on health. Participants were administered a form of the Attributional Style Questionnaire (ASQ; Peterson et al., 1982), which is a measure of explanatory style. It contains 24 bad events participants rate for internality, stability, and globality. To examine the possible confound of depression on attributions, the BDI was also administered to the participants. The researchers measured illness by asking the participants to document their health during the past 30 days, including the date the symptoms began and ended and what the symptoms were. One month after this original testing, 170 of the participants were asked about their health in the same manner. One month after that, 146 participants reported about their health. A year later 146 responded to a mailed questionnaire inquiring as to the number of visits to the doctor they had made in that year. Health information was calculated as the reported number of days with symptoms for time two and the reported number of doctor visits for time three. All of the illnesses that were reported were infectious. The results indicate that pessimistic

explanatory style did correlate with occurrence of illness according to the second ($r = .27$) and third ($r = .20$) collection of health data.

Burns and Seligman (1989) used the CAVE technique and examined writings taken when their participants were 17-30 years of age. These writings were compared to a 750-word sample response to a Life Style and Attitude Survey taken at the time of the study. The time between writing samples was an average of 52 years. The goal of the study was to see if explanatory style was stable over time. There were 30 participants in the study, 25 women and 5 men. Results indicated that explanatory style for negative events seemed to remain stable from the first assessment to the second, with $r = .54$. However, this was not the case for explanatory style of positive events ($r = .13$). In addition, the most reliable dimensions of the scores were globality and stability. Internality was the least reliable for predicting explanatory style.

To determine whether explanatory style can predict academic performance with college freshman, Peterson and Barrett (1987) administered the College Board Standard Achievement Test (SAT), an academic goals questionnaire, the BDI, the Academic Attributional Style Questionnaire (AASQ; Peterson et al., 1982), and a questionnaire asking how the participants would cope with academic failure. This information was calculated against Grade Point Average (GPA) of 87 participants. Pessimistic explanatory style for negative events correlated moderately ($r = -.28$) with lower GPAs. Even when the researchers held constant BDI scores, SAT scores, and gender, the correlation was found. Interestingly, the

students with a more negative explanatory style were also found to seek advisement less, and to have less-developed goals for achievement.

Seligman and Schulman (1986) conducted two studies with insurance agents evaluating the ability of explanatory style to predict productivity level and dropout rate within this profession. For the first experiment there were 94 participants. To determine how explanatory style may affect work performance, the experimenters used the ASQ, measured productivity by commissions earned, and acquired the participants' scores on the Aptitude Index Battery (AIB; Life Insurance Marketing Research Association, 1982), which is a job-relevant questionnaire evaluating job satisfaction, career goals, skills and job expectations. The results indicated that those employees who scored high for optimism on the ASQ sold more insurance; the numbers reached as high as 88% more sales than those who scored more pessimistically. Those agents who scored more optimistically on the ASQ were 37% more productive than their pessimistic counterparts over the two-year period. The AIB did not seem to relate significantly to productivity. The researchers also found that the optimistic salesmen resigned from their jobs half as often as the pessimistic salesmen.

For the second study, the 104 participants were newly hired insurance agents who were given the ASQ and the AIB. Their productivity every quarter for a year was calculated. The results indicated that optimistic explanatory style, as measured by the ASQ, was a significant predictor of agents who were still working a year later. Productivity was also related to ASQ score for the second

two quarters. Once again, AIB was not a significant predictive measure alone, but only in conjunction with the ASQ.

Seligman et al. (1990) extended the use of the ASQ into the realm of sports. The 21 members of the varsity men's swim team and 26 members of the varsity women's swim team from the University of California at Berkley were recruited for the first of two studies. The researchers gave the ASQ to all of the swimmers. Throughout the season, coaches rated each swimmer's performance on a Likert scale with 1 being much worse than expected, 4 being expected, and 7 being much better than expected. The results indicated that ASQ scores did not correlate significantly with the coaches' ratings. Overall, the men's explanatory style was significantly more optimistic than the women's.

In the second study, 33 (19 women and 14 men) of the original 47 participants swam their best event and were told that their time was slower than it actually was. This was done to induce the feeling of failure. After a 30-minute break, each participant was allowed to re-swim his/her event to test the effects of induced failure. Again, the coaches rated these performances on the Likert scale. The results showed that the swimmer's explanatory style had a significant effect on subsequent swims. Those with an optimistic explanatory style equaled or bettered their first performance; those with a negative style performed worse than their first performance. This study demonstrated that explanatory style can be helpful in predicting athletic performance after failure has been induced (Seligman et al., 1990).

Sellers and Peterson (1993) conducted an experiment using 66 NCAA Division I football players. These athletes filled out the Student-Athlete Life Stress Questionnaire (SALSQ; Sellers & Peterson, 1993), and a version of the ASQ. The SALSQ addressed areas such as demographics, satisfaction with the institution, and coping strategies for academic and athletic let downs. The results of this study indicated that coping with difficult situations was influenced by the player's explanatory style. When events were viewed as controllable, individuals with a pessimistic explanatory style felt, more so than other participants, that they would be able to cope.

In summary, the manner in which people interpret the events that happen to them, whether positively or negatively, shapes their behavior in subsequent situations. Optimistic explanatory style is stable over the lifespan (Burns & Seligman, 1989), and is associated with longer and healthier lives (Peterson & Seligman, 1987), and higher levels of productivity (Seligman & Schulman, 1986). Pessimistic explanatory style has been associated with lower grades (Peterson & Barrett, 1987). In sport, optimistic explanatory style has been associated with better performance following failure than pessimistic explanatory (Seligman et al., 1990). These results demonstrate the backbone of explanatory style. If individuals believe that they cannot change or control future events, they begin to become helpless. Unfortunately, the perception that some have of a lack of control is brought on by as few as one uncontrollable event. Therefore, thinking pessimistically, or having a negative explanatory style can have long-range adverse effects (Peterson and Seligman, 1987).

Attribution Retraining

The question is can attributional style become more optimistic, and could performance increase as a result? Attribution retraining is the method that has been developed to alter pessimistic explanatory style to become more adaptive (Seligman, 1990). In turn, this should help promote more conducive achievement patterns. How individuals explain what occurs in their lives, or the reasons they believe things happen to them, is termed an attribution (Seligman, 1990). Attributing cause to an event is similar to explanatory style described previously. If this reasoning is internal, global and stable for negative events, depression and/or learned helplessness can occur. In this way, failure can perpetuate failure. Therefore, it would be advantageous to individuals holding pessimistic attributions to learn a new method of attributing causes to events. This is where retraining a person's style of thinking becomes important.

Attributions. Before attributions can be retrained, methods must be devised for measuring attribution style. Spink and Roberts (1980) conducted a study using physical education students as the participants. They collected objective and subjective data on success and failure in a racquetball competition. Rudisill and Singer (1988) examined the effects of causal dimensions on performance following failure. These researchers used junior high students as participants, and the stabilometer as the testing device.

Spink and Roberts (1980) placed 70 male and female physical education students during the final two weeks of a 16-week racquetball course in two-person competitions. The hypothesis being evaluated was that those participants with

optimistic self-perceptions would use their performance in the game to determine success while those with pessimistic perceptions about self would view their performance as a failure regardless of outcome. In other words, if they won they would not attribute success to themselves, but to something outside of self such as luck. Prior to the game, participants were asked how they thought they would perform. Following each match, they were given a series of questions concerning their performance and competence, and their opponent's competence. All of this was rated on a 9-point Likert scale from 1 = incompetent or not at all satisfied to 9 = very competent or very satisfied. Two scores were created: internal and external attribution scores. The internal attribution score was created by averaging self-reported skill and effort. The external attribution score was created by averaging self-reported luck and difficulty of the task. The external attribution score was subtracted from the internal attribution score. A positive score indicated more internal attributions concerning performance and a negative score indicated more external attributions concerning performance.

Results of a 2 (objective success vs. failure) X 2 (subjective success vs. failure) Analysis of Variance (ANOVA) indicated that winning was more often attributed to internal rather than external factors (Spink & Roberts, 1980). Perceived outcomes that were opposite of objective outcomes were classified more externally than those consistent with reality. The participants attributed winning to effort more than they did losing. Those who won felt more competent than those who lost. The participants attributed clear cut wins more to effort and skill, while they attributed more ambiguous game outcomes to the difficulty of the

task. In addition, those who were more sure of their own ability to win the match before it was played rated their expectancy to win higher. When rating the competence of their opponents, those who lost rated their opponent as more competent. However, the participants who won indicated higher competence in a clear cut win and less competence when the win was ambiguous. Thus, it appears that perceptions of success and failure are not always attached to objective indications of winning and losing. The determining issue seems to be the individual's perception of the cause of the win or loss.

Rudisill and Singer (1988) divided 30 junior high school students into three groups of ten (five boys and five girls) in an examination of the effects of causal dimensions on performance following failure. They used a stabilometer for maintaining balance; the amount of time participants could stay on the moving device was measured. The participants were encouraged to remain on the stabilometer for 20 seconds, and were given three practice trials with the machine. Following the practice trials, they completed two trials in which they were given failure feedback. After the two trials with failure feedback, participants completed the Casual Dimensions Scale (CDS; Russell, 1982); internality, controllability, and stability are measured by this scale.

For a second series of trials the three groups were given different causal attributions for their performance. Group one was told that they could improve performance via practice (controllable and unstable (CU) attributions). Group two was told some people do better because of ability (uncontrollable and stable (US) attributions). Finally, group three was not given attributions for their

performance (non-attributional (NA)). Eight trials, performed two at a time per person, followed the manipulation. Prior to each trial the participants were asked to rate how they expected to perform on a scale from 0 (not better than last trial) to 10 (much better than last trial). Following each trial, false failure feedback was given to the participants. Persistence was calculated by giving the participants three free minutes following each block of trials to see how much time they would spend practicing the task. The CDS was also given following each trial (Rudisill & Singer, 1988).

The results of a One Way ANOVA and Newman-Keuls post hoc tests found that the CU group spent significantly more time practicing the stabilometer task than the US and the NA groups. The CU group also significantly outperformed the other two groups in the final two trial blocks. These results indicate that the controllable and unstable dimension provided participants with the notion that their effort determined their success rather than ability (Rudisill & Singer, 1988).

In summary, studies indicate that when people clearly succeed in sports, internal factors such as skill and effort are most often reported as the cause (Spink & Roberts, 1980). However, when the outcome is ambiguous, external features of the task such as difficulty are taken into account. Children spend more time practicing, and increase their performance, when the causal dimensions of controllability and instability are the attributes for failure rather than uncontrollable and stable dimensions (Rudisill & Singer, 1998).

Causal attributions in sports. A handful of studies have examined causal attributions in sport settings. Gill, Ruder and Gross (1982) performed a series of studies using volleyball players and students in the classroom. All were involved in some type of competition. The important question asked by the experimenters was, "What was the most important reason for your team's winning or losing today?" Spink (1978) gave an attribution questionnaire to basketball players to see how they would attribute wins and losses. These studies are examined in detail here.

Gill et al. (1982) conducted two field studies and two laboratory experiments examining the effects of performance on open-ended attributions. The first field study examined 16 intramural volleyball teams consisting of 94 women. The intramural volleyball players were given an attribution questionnaire following play in a midseason game.

The second field study examined 68 women who were members of intercollegiate volleyball teams. The intercollegiate teams answered the attribution questionnaire one-third of the way through their season.

For the laboratory experiments, 64 females were in the first group studied, and 32 males and 32 females were in the second group. All of the participants in the laboratory experiments were students in an undergraduate kinesiology class and were paired into teams of two for competitions in a motor maze task.

In the first laboratory experiment each team competed against two different teams in two different 20-trial sessions. They competed as a team during the first session, and then individually, with their scores being added together, for

the second session. They were each told they won 15-17 of the trials in the first session, but lost that many in the second session.

In the second laboratory experiment, each team participated in the competitive session with another team and teams were randomly assigned to the win or loss group. For both of the laboratory experiments, a questionnaire was administered immediately following the task.

In all of these studies, the only question of interest to the experimenters was, "What is the most important reason for your team's winning or losing in today's match?" (Gill et al., 1982, p. 162). A system was developed to code the data on the dimensions of internal-external, stable-unstable, and global-specific. A loglinear analysis was performed on the data. As a result, these researchers found that internal, unstable and controllable attributions were made most frequently. They also found an effect for win/loss; those on winning teams gave significantly more unstable and controllable responses than those on losing teams. The winning teams also cited teamwork as a specific attribution for their performance at a significantly higher rate than those teams that lost. This study supports the theory that internal causal attributions are more often made when success is the outcome.

Spink (1978) examined 172 male basketball players with an average age of 17.2 years in a study of the effects of success on attributions. Spink used an attribution questionnaire, completed by the players following a game, designed for competitive athletics that utilized an 8-point scale ranging from 8 = very much so to 1 = not at all. For the purpose of the study, a close win/loss was defined as

six points or less and a decisive win/loss was defined as 20 points or more.

Failure was defined as having lost the previous game to the current opponent by 20 or more points, and success was classified as having won the previous game by 20 or more points. Competency was measured by using points scored and minutes played. One was considered competent if he scored 10 or more points and played at least half of the game. Incompetence was operationally defined as scoring no points and less than half of the game played. Two categories were established to code data, internal/external and stable/unstable attributions.

Results of the study indicated that game outcome and attributions interact. Winning teams had more internal attributions than losing teams. The variables of effort and ability were key attributions in decisive wins, while effort was cited most often in close wins. On the other hand, lack of effort and the difficulty of the task were rated highly for losses, with officiating also being added when the loss was close. Stable attributions of ability were made for outcomes similar to previous performances. Unstable attributions were created for inconsistent outcomes. Finally, internal causes were rated significantly higher when the game was a playoff than when the game occurred during the regular season, indicating that the situation needs to be accounted for when examining causal attributions.

As in the studies of non-athletes, controllable and unstable attributions were made when success was achieved. Internal causal attributions appear again to be influenced by performance. Winning has been found to provoke more internal attributions (Spink, 1978) than losing. Effort and ability were key issues cited in victories. Internal attributions also increased as the importance of the

game increased. These causal attributions are clearly important to how individuals interpret performance.

Retraining. Attribution retraining has been shown to be helpful with athletes and children who have developed learned helplessness. Children have been the participants in several studies of attribution retraining. Craske (1985) used unsolvable math problems to test her retraining methods. After categorizing some children as having learned helplessness Craske retrained them with an observational learning video. The child's effort was the focus of this retraining. Attributional retraining was explored in the area of sports by Sinnott and Biddle (1998) devised a ball-dribbling task, and those who perceived their performance as being a failure were retrained. Miserandino (1998) conducted a study on attributional retraining, and his participants were high school basketball players. Orbach, Singer, and Murphey (1997) studied the impact of attribution retraining on the performance of college recreational basketball players. Each of these studies will be discussed in detail as will the methods used for attributional retraining.

Craske (1985) examined 37 male (average age 10 years, 11 months) and 28 female (average age 11 years, 4 months) participants in a study on improving persistence. Several pre-treatment measures were taken. Intelligence was measured using a non-verbal test, Raven's Progressive Matrices (RPM; Raven, Court, & Raven, 1996). To determine if they attributed failure to lack of effort, participants completed a subtest of the Intellectual Achievement Responsibility Scale (IARS; Crandall, Katkovsky, & Crandall, 1965). This instrument measures

whether children view the locus of control for success or failure as themselves or an adult (parent, teacher) in their environment. The logic of this scale stems from the assumption that more persistent children attach higher significance to effort and feel personally responsible than do helpless children. To measure persistence, Craske came up with 15 unsolvable problems for the children. The participants were categorized as having learned helplessness if the time spent on the unsolvable problems was less than 80 seconds.

The learned helplessness group consisted of 18 boys and 14 girls. Craske (1985) used an eight-minute observational learning video for the purpose of retraining. A partial reinforcement schedule, viewed as most efficacious for reversing the trend of learned helplessness, was shown by the model in solving several puzzle problems. Children were exposed to models of the same sex. In addition, prior to the child viewing the tape, the experimenter asked the children to pay attention to the fact that a lack of effort by the child resulted in a wrong answer. The goal was to teach the children to reattribute failure to a lack of effort rather than a lack of ability.

The post-training measure consisted of slightly different persistence problems that were scored according to time spent on them. A high positive correlation, $r = .69$ for boys and $r = .76$ for girls, between IARS scores and persistence was found. This indicated that those children who persisted following failure attributed that failure to a lack of effort. The relationship between persistence and RPM scores was not significant for either boys or girls. However, girls tended to have lower persistence scores overall, as well as a tendency to

disregard effort as a cause of failure. In comparing the pre- and post-training scores on the persistence measure, significance was only found in the scores of the girls. The results indicated that when effort was seen as the cause of failure, both boys and girls were more persistent. However, when children with low persistence underwent retraining via the observational learning method, only the females were significantly affected. Craske (1988) explained these findings through the differences in socialization between boys and girls. Girls are taught to look to others for feedback on their performance while boys are taught to look internally. This difference may have been why the females were more affected by the observational retraining method.

Sinnott and Biddle (1998) conducted an attribution retraining study using six girls and six boys aged 11-12. Prior to being chosen, these children dribbled a basketball down a school hall with their non-dominant hand. Afterwards, they completed the Causal Dimension Scale II for children (CDSII-C; Vlachopoulos & Biddle (1996); Vlachopoulos, Biddle & Fox, 1997). These 12 were chosen from the original pool of 58 children because of their perceived failure/success and attributions of that failure/success. Three boys and three girls were put into the attribution retraining (AT) group because they rated their performances very low. The other six children were in the no training (NO) group because they felt they were very successful in performing the task.

The attribution retraining took place one week after the initial task. It consisted of one 20-minute session during which the children were provided with strategy information, such as many children their age found this task to be

difficult and that they could improve over time. In addition, the children were exposed to modeling of various ball-dribbling strategies. Finally, they were re-tested on dribbling and took the CDSII-C once more. The Intrinsic Motivation Inventory (IMI; McAuley, Duncan, & Tammen, 1989) was also given to provide the researchers with a score of each child's level of global intrinsic motivation.

Even though this study had a small number of participants, the results provided the researchers with statistically significant results. The AT group improved significantly in their perceptions of success; they reported higher ratings than those the NO group initially gave. The scores on the IMI were also higher for the AT group than the NO group. One reason for these results is that a higher perception of control was given to the AT group through the retraining. This study gives encouraging results that attribution retraining is effective with children (Sinnott & Biddle, 1998).

Miserandino (1998) conducted a study examining the effects of retraining using members of a boys high school varsity basketball team (average age was 17.8 years). The 11 participants were matched for ability and divided into two groups, control and retraining. The retraining group received verbal feedback that focused the participants on effort and ability in hopes of improving their performance in a 15-minute shooting drill. The control group also did the shooting drill with technique feedback only. Each group met three times a week for four weeks. The participants also took the Orientation Questionnaire (OQ, Miserandino, 1987) before and after retraining. This scale measured mastery orientation or helplessness in athletics. It asked the athletes to judge the cause of

success or failure in 10 situations as being due to effort, ability, difficulty of task, or luck. The results indicated that, following retraining, the experimental group improved their shooting by 2.6 shots where the control group only improved .66 shots. The OQ results indicated that the retraining group was more mastery-oriented than the control group following training.

Orbach et al. (1997) recruited 60 recreational basketball players, from a southern university, with an age range of 17-25. Participants were given the Causal Dimensions Scale-II (CDS-II; McAuley, Duncan & Russell, 1992) as a pretest/posttest measure. A performance task, dribbling a ball between four cones and taking a shot, was also a part of this experiment. The participants performed a three trial pretest and four blocks of two trials for the actual experiment. Failure was induced by giving the participants a goal time in which to complete the task (6:05 for males and 6:35 for females) that was rigged to be difficult to achieve. Three treatment conditions were created. They were controllable and unstable (CU), uncontrollable and stable (US), and nonattribution (NA). The CU group was retrained to focus on effort. The US group was retrained to focus on their ability. The NA group received general information concerning basketball. After the first block of two trials and the participants experienced failure to finish within the goal time, the CDS-II was again completed. The retraining occurred before the remaining trial blocks.

The results of this study indicated that the CU group was less stable with their attributions on the CDS-II after their retraining sessions. This group also perceived that they had more personal control than the other two groups after the

retraining occurred. Significant increases in performance times were found for the CU group. These results indicate that attribution retraining was successful in the sports arena.

In summary, observational learning has been successful in retraining girls when increasing effort is the focus of the retraining (Craske, 1985). Providing strategic information on task performance has also been a successful method of retraining regardless of gender (Sinnott & Biddle, 1998), male athletes improved performance following verbal feedback retraining (Miserandino, 1998), and attributions became more optimistic along with increased performance (Orbach et al., 1997). These studies give support to the notion that attributions can be retrained in an adaptive direction to improve performance.

Retraining in clinical settings. Performance is not the only arena in which retraining thinking has been utilized. Not many successful methods for the clinical treatment of depression had been developed until Aaron Beck (1967) and Albert Ellis (1962) formulated the theory that thinking influences how one feels. Ellis took this theory and postulated the ABCDE model. These five steps are used to alter pessimistic thinking, and their purpose was for use in the clinical setting primarily for the treatment of depression. This model begins by recognizing the automatic thoughts that one has when an event occurs. The consequences of these thoughts are examined and then more positive reattributions are made. The reason that this technique works is that it changes explanatory style from pessimistic to optimistic. This method also empowers people to change something that is maladaptive in themselves (Seligman, 1990).

Seligman has conducted several studies concerning pessimistic explanatory style. One experiment used college freshman as the participants. After they filled out a questionnaire designed to detect depression, they were recruited to be in the control group or to attend a series of workshops designed to make them more optimistic thinkers using the ABCDE model. In addition, they also learned stress management and other coping strategies. The researchers collected follow-up data via a questionnaire every six months. The results thus far have indicated that the control group experienced a 32% rate of moderate to severe depression whereas the experimental group only experienced a 22% rate. Similar results were found for generalized anxiety disorder. The control group had a rate of 15% and the experimental group had only had a 7% rate of occurrence for generalized anxiety disorder.

Upon the positive results found with the college freshman, Jaycox, Reivich, Gillham and Seligman (1994) decided to try a similar procedure with school age children. This study recruited 143 children ages 10-13; it is a five year prospective study. They divided the participants into eight groups with 11-12 children per group. The three conditions for retraining in this study, are cognitive (utilizing the ABCDE method, to make more optimistic attributions), social problem solving (goal setting, information gathering, decision-making techniques), and a combined retraining method that included both of the previously described techniques. The two control groups are a waiting-list group, and a no-participation group.

All of the participants were given the CDI (Kovacs, 1985). They were also given the Children's Perception Questionnaire (CPQ; Emery & O'Leary, 1982) that measures the perception of marital discord. In addition, the participants took the Reynolds Children's Depression Scale (RCDS; Reynolds, 1989) that measures the frequency of depressive symptoms. The Child Behavior Checklist (CBC; Achenbach, 1991), the Children's Attributional Style Questionnaire (CASQ; Seligman et al., 1984) and teacher reports were also acquired for all of the participants.

The results indicated that the interventions have not significantly supported the relief of conduct problems at home. However, behavior in the classroom setting did improve. There were no significant changes in explanatory style, but the children in the treatment conditions were less likely to attribute events to stable causes, thus indicating more optimistic thinking. There were no main effects for age or sex. The treatment groups had significantly reduced incidences in depressive symptoms. At posttest, 15% of children in the experimental groups were experiencing clinically relevant depressive symptoms verses 23% of the control group. At the follow-up, 14% of the experimental group were exhibiting these symptoms verses 25% of the control group. There was also significant improvement on the CDI scores for the treatment groups. The children experiencing high levels of parental discord showed the strongest reduction in depressive symptoms, $F(1, 55) = 5.04, p \leq .05$, this continued to follow-up with an $F(2, 52) = 3.83, p \leq .05$. The lower levels of discord were not significantly altered, $F(1, 55) = .36$ and $F(2, 52) = .50$. This study showed the

effectiveness of the ABCDE method for use in the clinical setting. These results indicated that it is a valid method of retraining for changing thinking to become more optimistic.

Limitations of previous studies

Some of the limitations of the research reviewed here include the use of the questionable CAVE technique (Peterson & Seligman, 1987) that takes quotes from years ago and extracts causal dimensions. Peterson and Seligman (1987) and Burns and Seligman (1989) both used quotes and sample writings taken from their participants currently and years prior. Then they judged them for attributions rather than having the individuals place causal dimensions on these past and present scenarios. This left it up to the experimenters to decide how the participants were attributing causes at the time. Such decisions may not be accurate reflections of what attributions were being made. Therefore, we will not be using this technique. This study will receive the attributions directly from the participants ensuring their accuracy.

In addition, some of the studies were correlational (Burns & Seligman, 1989; Peterson & Barrett, 1987; Peterson & Seligman, 1987) rather than experimental. Thus, cause and effect statements cannot accurately be made because other factors could have produced the results. Correlation does not imply causation (Cook & Campbell, 1979).

The experiments using children (Craske, 1985; Craske, 1988; Rudisill & Singer, 1988; Sinnott & Biddle, 1998; Spink, 1978) tended to have smaller sample sizes than those using adult participants. This could call into question the

generalizability of those results. Also, techniques that may be effective with children may not generalize to adults.

In the realm of sports, the ASQ was used in studies (Gill et al., 1998; Seligman et al., 1990; Sellers & Peterson, 1993) rather than a measure that is specific to sports. The results may indicate how the participants would react in general, but not situations specific to competitive sports.

The present study

The purpose of this study was to examine the effectiveness of retraining athletes to be more optimistic thinkers as an avenue to improve game performance. Baseline data was compared to post training data to verify whether or not a significant change in performance occurred. Participants completed the Sports Attributional Style Scale (SASS; Hanrahan & Grove, 1982) before and after retraining to assess whether they became more optimistic following retraining. Objective game statistics and subjective measures of success and failure were also used as dependent measures.

Seligman, Hollon, and Freeman worked together to develop the techniques of the ABCDE method for changing pessimistic thinking (Seligman, 1990). The ABC's are similar to the disputation of irrational beliefs devised by Albert Ellis (Seligman, 1990). According to Ellis (Seligman, 1990), our emotional consequences are dictated not by the adversity we face, but by the beliefs we hold about the adversity. If these beliefs are irrational, or pessimistic, they result in negative self-thought, and can lead to chronic negativity, depression, and illness. Ellis also formulated the Disputation/Distraction and Energization portions of the

theory to aid in changing the way people think about their adversities. The goal is to alter that thinking, and have people become more optimistic. The Disputation phase involves arguing with the irrational explanations individuals create for what has occurred. Another way to deal with those thoughts is distraction from thinking about the situation altogether. Finally, the Energization aspect is the more positive feeling one has after successfully disputing pessimistic beliefs. According to Seligman (1990), individuals are better able to cope with adversities in life if their mental response is more positive.

This study extended Seligman's ABCDE model into the realm of sports. This technique has not been used in this manner prior to the current study. This study used the sports-specific SASS in addition to objective and subjective measures, success and failure. Training was individualized, which has not been done in the prior studies. It was hypothesized that, following retraining, the attributional style of the players would become more optimistic, and the objective performance and subjective perception of success and use of optimistic thinking of the baseball players would improve.

CHAPTER II

METHODS

Participants

The participants of this study were the 26-member baseball team from a small mid-south university. The mean age of the participants was 20.12, SD= 1.24. There were four freshmen, five sophomores, 11 juniors, and six seniors. There were 24 Caucasian players, one African-American player, and one Hispanic player. Their participation was voluntary.

Design

This experiment used a multiple baseline design. The team was divided into four groups. The team was composed of 13 position players and 13 pitchers. These players were randomly assigned into four groups so that there was an equal number of position players (i.e. outfielders and infielders) and pitchers in each group. All of the members of the team were retrained. The independent variable is retraining and the dependent variables are the self-report measure of success or failure, the SASS scores, and the objective statistics.

Measures

Optimism vs. Pessimism: The Sport Attributional Style Scale (SASS; Hanrahan & Grove, 1990) was given at the beginning of each retraining period as a baseline measure, following each retraining period as a manipulation check, and at the conclusion of the experiment. This scale measures the sport-related attributional style of both positive and negative events along the dimensions of internality, specificity, globality, controllability, and intentionality. There are 16

hypothetical situations on the SASS. Each participant provides the cause of the events, and rates the events on each of the five dimensions. The SASS has been found to have good construct validity, test-retest reliability, and inter-item reliability (Hanrahan & Grove, 1990). Five-week, test-retest reliability was examined using undergraduate physical education students. The results indicate a mean r of .60 over the five dimensions of the scale. When compared to the ASQ, the range of correlations was .24 to .61. These results indicate that the SASS has higher concurrent validity than the ASQ in relation to sport (Hanrahan & Grove, 1990). The SASS was also administered to athletes in a non-academic setting (Hanrahan & Grove, 1990). When compared to the student athlete population the SASS was quite reliable with a mean reliability coefficient of $r = .77$. Therefore, the SASS proved to be significantly reliable for athletes in a setting other than academic.

Objective Performance: To assess the performance of the position players, batting averages (AVE) and on base percentage (OBP) were computed for each of the games played in the preseason practice. The pitching statistics of earned run average (ERA) and walks and hits per innings pitched (WHIP) were used to assess the performance of the pitchers.

Subjective Performance: The self-report measure was a single question in which each participant rated his performance as either a success or a failure. This was done using a Likert scale where -5 indicated complete failure, 0 indicated neutral, and +5 indicated complete success. A second question of how much the players felt that they used optimistic thinking in each game was also asked. A

nine indicated use of optimistic thinking through the entire game, a five indicated use of some optimistic thinking, and a zero indicated no use of optimistic thinking.

Retraining

The re-training sessions were done in groups. The position players were retrained together and the pitchers were retrained together using appropriate scenarios for their positions. The players were told that they were being taught how to think about events in an optimistic way. All of this information was written down on a sheet of paper broken down into each section of the ABCDEF method (see Appendices A and B) described by Seligman (1990). The ABCDEF letters stand for Adversity, Belief, Consequence, Disputation/Distraction, Energization, and Focus. This model is based on cognitive therapy, which postulates that adverse events are interpreted based on the beliefs an individual holds. Due to this belief, consequences or feelings arise in the individual. The real work for modifying thinking patterns occurs in the Disputation/Distraction phase. Here participants must provide evidence for themselves that allows them to see that the beliefs they held about the cause of the event are fundamentally flawed. Distraction, such as turning attention toward something else, can also be a useful tactic. Energization allows participants to witness the positive influence of the changed thinking patterns. Finally, the retraining sessions taught players to Focus on how the skills learned in the session could be generalized to the actual game setting. Each player explored how he would think in upcoming games and explored self-talk when some aspect of the upcoming game did not go right.

The retraining sessions lasted from 15-25 minutes. For the position players, one scenario involved striking out and the other involved committing a fielding error that allowed the other team to score the winning run (see Appendix B, Adversity 1, and Adversity 2). For the pitchers, the scenarios were walking a series of batters to tie the game and pitching a homerun ball that won the game for the opposing team (see Appendix B, Adversity 3 and Adversity 4). Each player processed through the Adversity, Beliefs, Consequences, Disputation/Distraction, Energization, and Focus with the help of the researcher. This exercise was designed to increase the level of optimistic thinking.

Procedure

This experiment took place during the six-week fall practice season. All participants were given the SASS before the fall practice season began. The first week of practice was used for gathering baseline data for all of the participants. During the next week, Group 1 was retrained and given the SASS following the second retraining session. Group 2 followed the same procedure in week three. Group 3 and Group 4 followed in weeks four and five respectively. During week six the follow-up data was collected and the SASS was administered to all of the participants. The batting statistics (AVE and OBP) or pitching statistics (ERA and WHIP) of all of the participants were collected for each game. In addition, the self-report of success/failure and use of optimistic thinking were completed immediately following each game.

CHAPTER III

RESULTS

SASS. There were three scores computed for each of the three administrations of the SASS for each participant. First, there was a positive score calculated from responses to the five positive events. Second, there was a negative score calculated from responses to the five negative events. The overall score was computed by subtracting the negative score from the positive score. The higher the overall score the more optimistic the player was, and the lower the number the more pessimistic.

Manipulation Check. A repeated measures Analysis of Variance (ANOVA) was performed to determine whether or not retraining influenced attributional style as measured by the SASS. Results indicated that retraining did not influence attributional style ($F(2,50) = .685, p = .51$). Overall SASS scores decreased from baseline ($M = 29.58, SD = 24.14$) to post-retraining ($M = 25.81, SD = 27.86$) and increased to the follow-up ($M = 31.46, SD = 28.61$), but these were not statistically significant differences.

Objective Performance. A series of repeated measures ANOVAs were performed on the game statistics (Batting Average (AVE), On Base Percentage (OBP), Walks and Hits per Innings Pitched (WHIP), and Earned Run Average (ERA)) of the players. In order not to capitalize on chance, a Bonferroni Correction (Pedhazur, 1982) was used such that p was set at .025. Results indicated that retraining did not influence objective performance. There was no significant difference in AVE ($F(2, 24) = .78, p = .47$) from baseline ($M = .25$,

$SD = .14$) to post-retraining ($M = .35$, $SD = .23$) to follow-up ($M = .26$, $SD = .19$). Results indicated there were no significant differences in OBP ($F(2, 10) = .51$, $p = .68$) from baseline ($M = .45$, $SD = .16$) to post-retraining ($M = .51$, $SD = .30$) to follow-up ($M = .34$, $SD = .20$). Similarly there were no significant differences in ERA ($F(2, 18) = .09$, $p = .91$) from baseline ($M = 5.10$, $SD = 5.44$) to post retraining ($M = 7.23$, $SD = 8.54$) to follow-up ($M = 5.29$, $SD = 6.44$). Finally, there were no significant differences in WHIP ($F(2, 20) = 2.03$, $p = .16$) from baseline ($M = 1.67$, $SD = 1.16$) to post retraining ($M = 1.75$, $SD = 1.37$) to follow-up ($M = .89$, $SD = .88$).

Subjective Performance. A series of repeated measures ANOVAs were also performed on the subjective measures (success/failure (S/F) and optimistic thinking (OT)). In order not to capitalize on chance, a Bonferroni Correction (Pedhazur, 1982) was used such that p was set at .025. Results indicated that there were no significant differences in S/F ($F(2, 10) = 1.58$, $p = .25$) from baseline ($M = .97$, $SD = 1.87$) to post-retraining ($M = .25$, $SD = 2.61$) and to follow-up ($M = 1.04$, $SD = 2.91$). Similarly, there were no significant differences in OT ($F(2, 12) = .84$, $p = .45$) from baseline ($M = 5.69$, $SD = 1.76$) to post-retraining ($M = 5.72$, $SD = 2.02$) to follow-up ($M = 4.96$, $SD = 2.53$).

Individual Groups. Objective statistics, use of optimistic thinking, and subjective success were plotted for each group for each game. There were too many games with missing data for the pitching statistics because they did not play in every game. Thus, pitching statistics were not used. Figure 1 illustrates the game by game AVE and OBP for Group 1. The vertical line denotes the point of

retraining. This group did not significantly improve from baseline to post retraining, but did improve gradually following the initial decline. Figure 2 represents the game by game subjective success/ failure (S/F) and optimistic thinking (OT) for Group 1. These ratings also declined following retraining, and increased markedly throughout the remainder of the study.

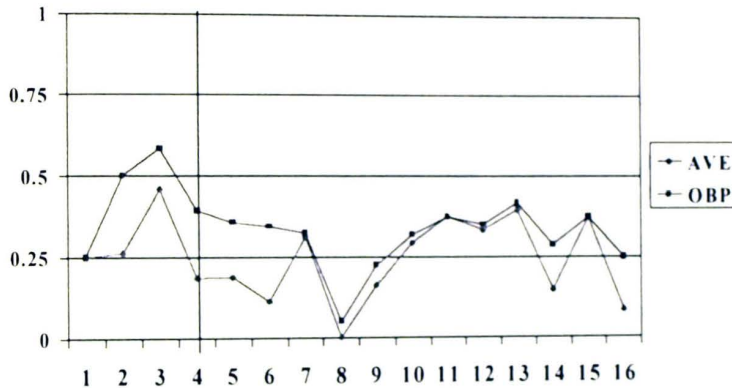


Figure 1. Game By Game Objective Statistics for Group 1

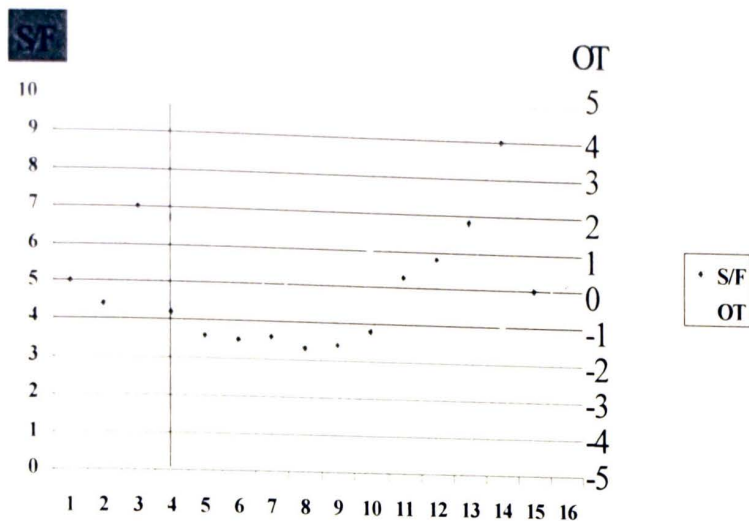


Figure 2. Game By Game Subjective Measures for Group 1

Figures 3 and 4 display the data for Group 2. This group had marked increases in objective performance following retraining. These increases slowly declined throughout the remainder of the study. The subjective measures remained fairly consistent throughout the study with no marked increases or decreased following retraining.

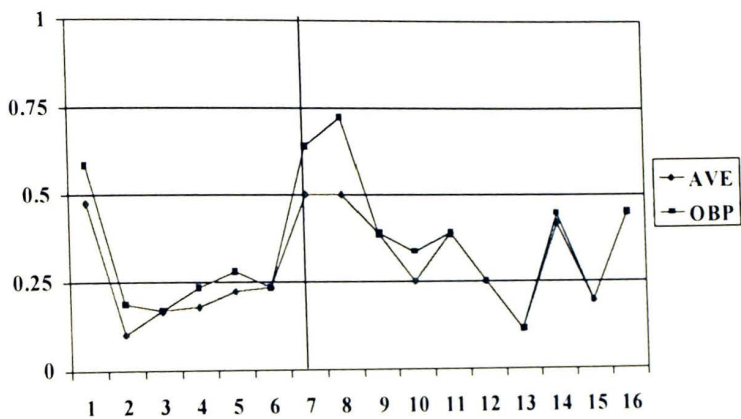


Figure 3. Game By Game Objective Measures for Group 2

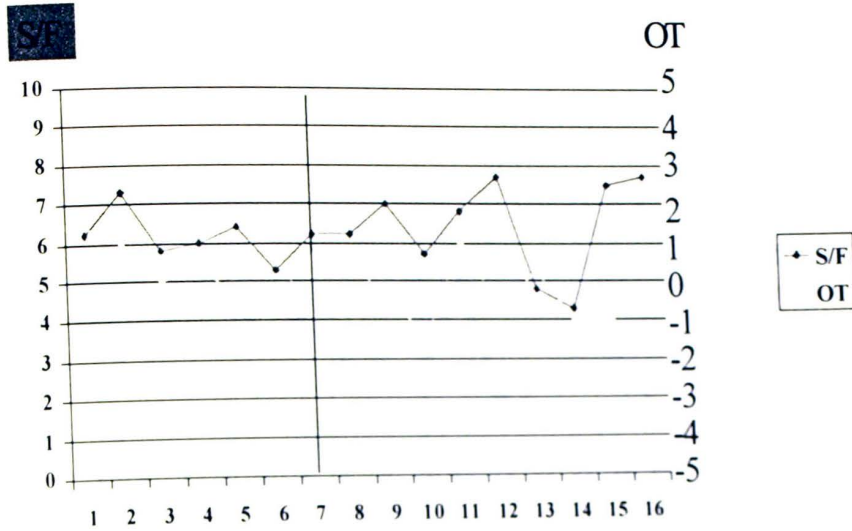


Figure 4. Game By Game Subjective Measures for Group 2

Figures 5 and 6 illustrate the data for Group 3. This group showed a sharp increase in AVE and OBP in the game immediately following retraining. An equally sharp decline followed and increased gradually until the end of the study. The subjective statistics of S/F and OT declined immediately following retraining. This initial decline was followed by a slight increase in both statistics.

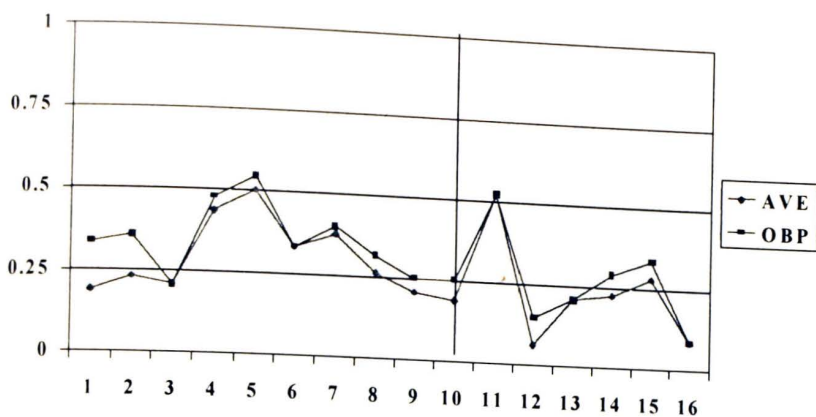


Figure 5. Game By Game Objective Measures for Group 3

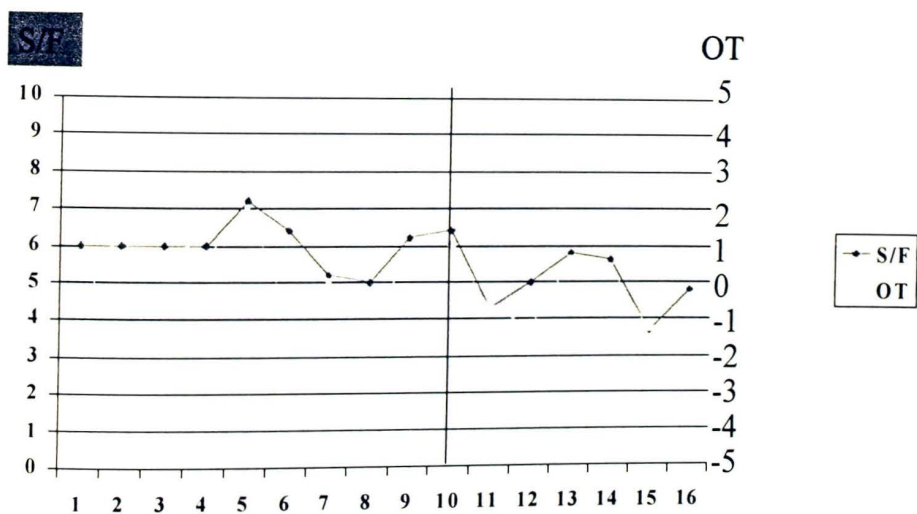


Figure 6. Game By Game Subjective Measures for Group 3.

Figures 7 and 8 provide the data for Group 4. This group had a gradual increase in their objective statistics of AVE and OBP following the retaining sessions through the remainder of the study. This group's subjective measures of S/F and OT increased significantly following the retraining sessions through the remainder of the study.

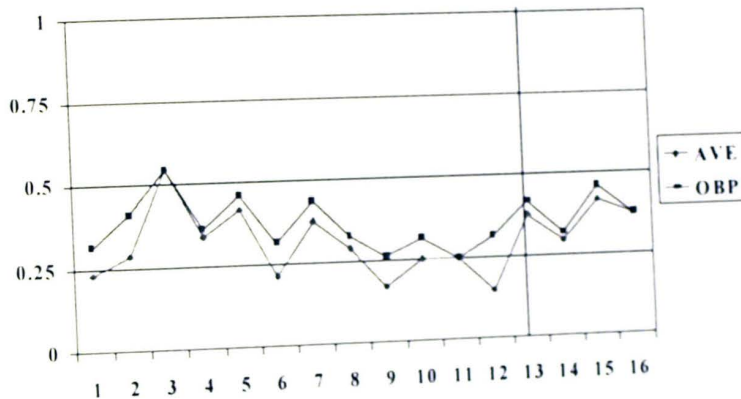


Figure 7. Game By Game Objective Measures for Group 4

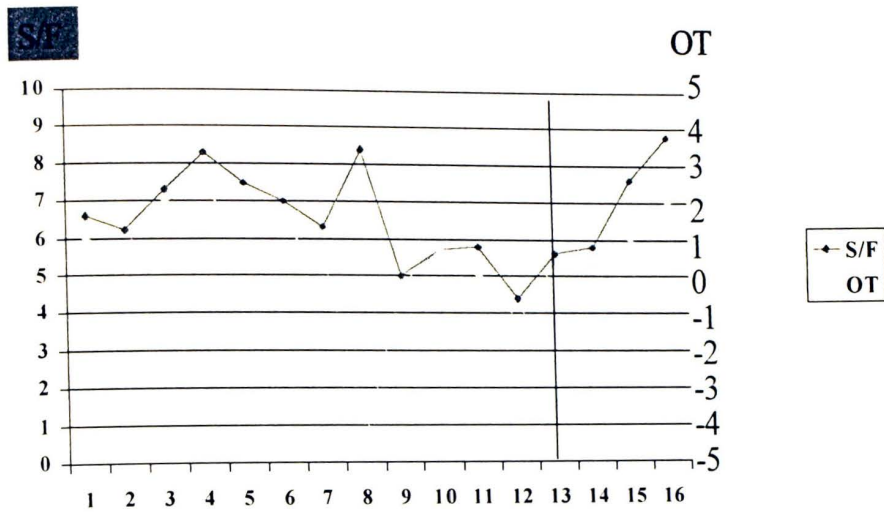


Figure 8. Game By Game Subjective Measures for Group 4

CHAPTER IV

DISCUSSION

This study examined whether retraining optimistic thinking in college baseball players would alter their attributional style, improve their objective game performance, and increase their subjective measures of success and use of optimistic thinking. It was hypothesized that, following retraining, the attributional style of the players would become more optimistic and the objective performance and subjective perception of success and use of optimistic thinking of the baseball players would increase. The results indicated that their attributional style was not significantly altered by the retraining intervention. There were some increases in objective performance such as AVE and OBP; however, neither of these reached a level of statistical significance. The subjective measures did not see any consistent or significant changes.

The previous research (Craske, 1985; Sinnott & Biddle, 1998; Miserandino, 1998) in this area has found statistically significant results following various methods developed to retrain optimistic thinking. However, the amount of research in sport is severely limited. The current study was done to investigate and expand the literature on retraining optimistic thinking in the sports arena. Unfortunately, the current study only partially supports the previous literature.

Retraining thinking patterns has been shown to be successful with children who have developed learned helplessness (Craske, 1985). These children showed increases in persistence when they attributed failure on a task to a lack of effort as opposed to a lack of ability. Sinnott and Biddle (1998) used a ball-dribbling task

with children and found attribution retraining to be significantly effective with them. The researchers accomplished this by retraining the children, with a focus on increasing their perception of control. This change in perception translated into increases in performance. The most applicable study was done by Miserandino (1998). He showed that perceptions of the success of high school basketball players in athletic performance can be significantly increased when ability and effort are the subjects of feedback instead of the techniques involved in the task. Each of these studies showed changes in attributions whereas the current study did not. The difference between these studies and the current study is that each of them was conducted with younger children (Craske, 1985; Sinnott & Biddle, 1998; Miserandino, 1998) than were the participants used here. Retraining is effective when the participants believe that they have low ability, as show in the studies discussed previously. However, in the current study the athletes were college level, and believed themselves to have high ability. This may have contributed to the results that previous research was able to obtain.

Other issues could also have contributed to the lack of significant findings. A meaningful failure experience is vital (Seligman et al., 1990). The fact that this study occurred during fall practice may have contributed to the lack of meaningful failure experiences. Retraining may work better during the season. The initial assessment of optimistic thinking showed that the baseball players already were thinking in a fairly optimistic manner. Therefore, it is possible that the reason no statistically significant changes in attributions were found is due to the fact that it is hard to increase already optimistic thinking patterns, therefore a ceiling effect

was created. The current study did not look at measures of persistence, effort or perceived control. These variables may have resulted in changes had they been measured.

The current study did not have statistically significant results; however, it did show increases in key areas indicating that further research should be conducted. There were increases in AVE following retraining and consequent increases in OBP. Attributions did change, but the players were unaware of these alterations in their thinking. If this were the case, the changes would not have shown up in the SASS scores because they were on an unconscious level. Another possibility is that of a Hawthorne Effect (Cook & Campbell, 1979). In other words, because the players expected to play better following the retraining sessions, they did play better. Once again, this would have occurred on an unconscious level as a result of having an intervention and not as a result of the intervention itself.

Several aspects of the current study could have contributed to the lack of statistically significant results. Even though a proven measure for optimism in sport was used, the SASS, the actual retraining method is only an adaptation of a proven system. This study served to test the validity of the ABCDE method for the purpose of retraining optimistic thinking. The results of the current study indicate that this method may not be effective for changing thinking patterns in athletes. In addition, only two retraining sessions may not have been sufficient to promote changes in thinking patterns. Perhaps if several more retraining sessions were conducted with each group, noticeable changes would have taken place.

Because all of the groups were unique, not all participants may have received the same effectiveness of training. This could have been due to the dynamics of the groups. Arkin and Burger (1980) have studied group cohesion and conflict between members of a group. They found that there are differences between groups despite attempts at randomization. Therefore, the groups could have had different attitudes and openness toward retraining techniques based on how they interacted with each other and, consequently, with the researcher. If the retraining was effective with some players and not with others, the group averages could have been brought down enough to prove insignificant. In addition, this study was conducted during a practice season in which the players were in competition with their teammates and not other teams. This may have reduced the seriousness with which the players took the field each day. Several players were trying out different positions and this may also have contributed to variability in performance level. Also, by virtue of the fact that the participants were competing against their teammates, both pitchers and position players could not improve simultaneously.

These issues indicate a number of different ways in which future research can improve upon the basic ideas of this study. More retraining sessions could be conducted with each player to maximize the amount of exposure to the retraining methods. Individual retraining sessions rather than group sessions, could ensure each player's understanding of optimistic thinking. Future research could be conducted during an actual season rather than during the more relaxed atmosphere

of practice. A different method of retraining could be used rather than the ABCDE method.

Observed changes in the objective and, to a lesser extent, the subjective measures lends credence to the fact that more research is needed in this area. This study did not find statistically significant results; however, there were changes in the right direction especially in AVE and OBP. Following retraining, both of these statistics increased from their baseline numbers. This indicates that perhaps with some changes in the methodology, significant increases in performance could be found. Future research could focus on measuring perceived control, persistence and effort, as well.

The purpose of the current study was to expand the literature and test a method for changing thinking patterns to become more optimistic. As stated previously, no statistically significant results were found. However, AVE and OBP increased following retraining. These performance increases give hope to the idea that performance can be improved through interventions designed to increase the level of optimistic thinking in athletes.

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APPENDICES

APPENDIX A

RETRAINING

Appendix A

Retraining Session

Minutes (1-5): According to the ABCDE method adversity comes first. In the first training session the adversity was striking out. The players were told, "You just went up to bat in a big game, it's the bottom of the ninth, two outs, and the winning runs are on second and third. You swung the bat three times and struck out. As a result, your team losses the game." In the second training session the adversity was, "You just committed a fielding error in the sixth inning, and the opposing team scored to tie the game." For the pitchers, the first scenario was, "It is the big game, bottom of the ninth with two outs and your team is up by one. The tying run for the opposing team is on third. You throw a pitch, and the batter hits a home run. As a result, your team losses the game." The second session scenario was, "You just walked three batters in a row in the sixth inning, and the tying run scores."

Minutes (5-10): The beliefs were why the players felt that the adversity occurred. The experimenter processed through with each group of players why they felt that the strike out, fielding error, home run, or walks occurred. Whether the disappointing event was because of something internal/external (i.e. I am a lousy baseball player. vs. That was a lucky pitch) was discussed. Next, whether the cause was global/specific (i.e. I am not going to get a hit for the rest of the season. vs. I did not get a hit in this game.) was investigated. Finally, whether it was stable/unstable (i.e. This slump is going to go on endlessly. vs. I will do better my next at bat.) was talked about.

Minutes (10-15): The consequences explored how the players felt following these events. Here the experimenter processed through with each group of players how striking out and committing the error in fielding felt and what happened as a result of these events. For example, thinking that they were not going to get another hit all season could have the consequence of discouraging the player from giving their all at batting practice thus not allowing themselves to get better.

Minutes (15-20): The disputation is the crux of the retraining. Here the experimenter assisted each group of players to see the causes of the event as external, specific and unstable. This process allowed the players to understand how to think about things in an optimistic manner. Each belief and consequence was looked at in this fashion and put into the optimistic framework. Evidence of why the beliefs were irrational (pessimistic) and alternative explanations were given. For example, the thought that they were a lousy baseball player could be disputed because they were obviously good enough to make it on a college level team.

Minutes (20-25): After disputing the event energization allowed the participants to see how the change in thinking positively affected the situation. Here the main point was to re-evaluate a situation when it occurs so that the pessimistic beliefs do not cause actions that could make the situation worse. For example, if a player feels that he struck out because he is a lousy player, then he will likely think that striking out again is a strong possibility. However, if he realizes that the pitches were not what he likes to hit and everyone has an off at bat he will likely not get stuck in a slump.

Minutes 25-30: These final minutes were spent discussing how the players can focus what they have learned here, and apply it to their thinking when something went wrong for them in the other games.

APPENDIX B

ADVERSITIES

Appendix B

Adversity 1: “You just went up to bat in a big game, it’s the bottom of the ninth, two outs, and the winning runs are on second and third. You swung the bat three times and struck out. As a result , your team losses the game.”

Beliefs:

Consequences:

Disputations:

Energization:

Focus:

Adversity 2: “You just committed a fielding error in the sixth inning, and the opposing team scored to tie the game.”

Beliefs:

Consequences:

Disputations:

Energization:

Focus:

Adversity 3: “It is the big game, bottom of the ninth with two outs and your team is up by one. The tying run for the opposing team is on third. You throw a pitch, and the batter hits a home run. As a result, your team loses the game.”

Beliefs:

Consequences:

Disputations:

Energization:

Focus:

Adversity 4: “You just walked three batters in a row in the sixth inning, and the tying run scored.”

Beliefs:

Consequences:

Disputations:

Energization:

Focus:

APPENDIX C

INFORMED CONSENT DOCUMENT

Informed Consent Document

Dear Participant,

You are being asked to participate in the following research study. Please read the following material carefully. It contains the purpose of the investigation, the procedures to be used, risks/side effects and benefits of your participation in the study, and what will happen to the information collected as part of the research project in which you are participating. Your participation is voluntary, and the coaches will not be informed if you do not participate.

1. The purpose of this research project is to investigate methods which may improve your athletic performance. The way that will be done is to retrain your thinking processes. The researcher will teach ways to think more optimistically. This way of thinking has been shown to improve performance in several areas including sports.
2. The procedures to be used. *What you will be asked to do.* You will be asked to complete the Sports Attribution Style Scale, a measure of thinking patterns related to sport, a total of three times. Each administration will take approximately 20 minutes. In addition, you will have two training sessions with the researcher, which will focus on changing thinking. These will be approximately 25 minutes. Your statistics from the games during fall practice will be used as data, and you will be asked to rate game performance and use of optimistic thinking immediately following each game. This will take approximately one minute.
3. Regarding risks and benefits. The benefits of this study would be that the retraining is successful, and performance on the field increases as a result. There is no deception being used in this study. The SASS has been used in previous studies, and the retraining process is adapted from the therapy of Albert Ellis.

The risks of this study are minimal. Because there will be a change in routine due to the retraining game performance may decline slightly. Every precaution will be taken to ensure that the information collected will be kept confidential. Each participant will be assigned number, and this will be the only identifying information on the questionnaires. A master list will have the participants names and numbers. This list will be locked in a separate location from the data, which will also be locked up. If you decide to withdraw from the study, you can contact Krista Shafer or Dr. Grieve if you desire to have your data removed from the database.

This study is examining the effectiveness of attribution retraining on performance. If successful, programs like this could be established for other athletes and athletic programs.

4. What will happen with the information collected. The information collected from

your participation in this study will be used for purposes of instruction and scientific publication. In any such use of information, all identities will be carefully protected. The identities of participants will not be revealed in any published or oral presentation of the results of the study. Information will be made public in the form of summaries, which make it impossible to tell who the participants were. If you wish, you will be able to receive a copy of the results of the investigation and/or discuss the study in detail with a researcher at the conclusion of the investigation. If you are interested in receiving such information, be sure to let the experimenter know as soon as possible.

Please read the statements below. They describe your rights and responsibilities as a participant in this research project.

1. I agree to participate in the present study conducted by Ms. Krista Shafer and supervised by Dr. Frederick G. Grieve, a faculty member in the Department of Psychology of Austin Peay State University.
2. I agree to complete the SASS, the post-game scale, participate in the two retraining sessions, and have my game statistics submitted to the researcher.
3. I have been informed in writing of the procedures to be followed. I have also been told of any risks/benefits that may result from my participation. Dr. Grieve has offered to answer any further questions that I may have regarding the procedures, and he can be reached by phone at 221-7235 Monday-Friday, 10 A.M- 4 P. M. Krista Shafer will be available to answer questions as well at 552-6093.
4. I understand that I may withdraw from participation at any time during the

70

experiment without any penalty or prejudice. I understand that I can have all data obtained from me withdrawn from the study and destroyed up until the study is submitted for publication.

5. I realize that by signing this form, I willingly consent to participate in this study. I also acknowledge that I have been given a copy of this consent form to keep.

Signature

Date

Name (please print)

VITA

Krista Allen Shafer was born in Orlando, Florida on November 3, 1976. She attended elementary and middle schools in the Orlando area and graduated from William R. Boone High School in May, 1994. The following August she entered the University of Central Florida in Orlando, and in May, 1998, received the degree of Bachelor of Science in Psychology with a minor in Political Science. In August of 1998, she entered Austin Peay State University in Clarksville, Tennessee and in May, 2000, received a Master of Arts degree in Clinical Psychology.