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# The effects of a psychologically based training program upon athletic performance

Bertram Burke

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DISSERTATION APPROVAL

THE EFFECTS OF A PSYCHOLOGICALLY BASED  
TRAINING PROGRAM UPON ATHLETIC PERFORMANCE

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ABSTRACT

THE EFFECT OF A PSYCHOLOGICALLY BASED  
TRAINING PROGRAM UPON ATHLETIC PERFORMANCE

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A Dissertation Submitted in Partial Fulfillment of  
The Requirements for the Degree of  
Doctor of Philosophy

WALDEN UNIVERSITY

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## ABSTRACT

The purpose of this study was to develop a psychologically based training technique that would help maximize athletic performance. The technique entitled the Six Step Technique was then experimentally tested to determine its effect on lowering state anxiety and improving foul shooting under experimental conditions.

Specifically three schools were randomly selected from a suburban athletic conference and their Varsity and Junior Varsity male basketball teams comprised the samples of the study. The three schools were then randomly assigned to an experimental treatment group, a placebo treatment group and a control treatment group. Prior to the start of treatment(s) the groups were administered the State Trait Anxiety Inventory, and a twenty-five foul shooting test was employed as a baseline measure. At the completion of the respective treatment(s) the STAI and non-game foul shooting test was readministered.

The results of the study showed (1) that state anxiety was significantly lowered for the experimental treatment group ( $P < .05$  level of confidence) after exposure to the Six Step Technique. In addition, neither the placebo nor control groups demonstrated a significant lowering of state anxiety upon completion of their respective treatments, and (2) that non-game foul shooting was

significantly improved for the experimental treatment group ( $P < .10$  level of confidence) after exposure to the Six Step Technique. Furthermore, the placebo and control groups did not demonstrate a significant improvement in foul shooting after exposure to their respective treatment(s). \*

From the results of the study the following conclusions were made:

1. That the Six Step Technique can help an athlete to become aware of and control his state anxiety regarding athletic performance.

2. That as a result of the ability to control state anxiety the athlete can sharply focus his attention and therefore become more automatic and successful in athletic performance.

\* Winer (1959) indicated that the .10 level of confidence is acceptable when applying the Scheffe' Method of Multiple comparisons.

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Last and foremost, thank you, Denise.



## DEDICATION

This study is dedicated to: first, my parents, Vince and Marge, who, although coming from humble beginnings, worked very hard at encouraging me to become educated; second, to my children, Bryan and Kelly for their love and support and especially to my wife, Denise, the love of my life, who made all things possible.

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## CHAPTER I

### INTRODUCTION

We know there are athletes in any given sport who perform brilliantly even while exhibiting less inherent talent or physical capability than other competitors. Such people overcome their inadequacies with drive, persistence, determination, and other intangible--psychological--qualities. Conversely, some athletes have all the talent and the physical powers needed, but they do not always succeed. (Morgan, 1980) p.93.

This quotation from psychologist, William L. Morgan, cogently states the actual purpose of this paper: to develop and experimentally test a psychologically-based training program designed to maximize athletic potential.

The basic considerations of the science of psychology is to observe, understand and predict human behavior. As a result of this intention, this discipline has had a broad and penetrating impact on all areas of human endeavor. As our consciousness of human activity develops in any facet of living, psychology quickly supports and encourages the activity with research, theory development and intervention strategies. Psychology's interest in contemporary life ranges from the study of the introspectiveness of meditation technique to the investigation of behavioral problems associated with space exploration.

## Play, Competitive Sports and Psychology

In regard to psychology and play, Kretchman and Harper (1969) have poetically expressed the following opinion:

Man plays before he asks the question.  
He plays while continually ignoring the  
question. He plays in spite of known  
detrimental effects. Play and man seem  
bound together with reason or without it.

Sports and play have always been of social significance to human beings and therefore should represent a special area for psychological study.

Psychological theories have long been available to explain why man finds play and sports to be necessary activities. Earlier theories viewed the reasons for man's involvement in play and sports as: surplus energy (Spencer, 1875), relaxation (Lazarus, 1883), repetition (Baldwin, 1885), pre-exercise (Groos, 1893), cathartic (Carr, 1902) and recapitulation (Hall, 1906).

Twentieth century theories of play and sports have been influenced by three major philosophical views of human nature, namely: the psychoanalytic, the behavioristic and the cognitive.

An early Freudian (psychoanalytic) position views play and sports as man's method to release the anxiety which develops from frustration. Play and competitive sports, in this view, can express both the pleasure principle (Freud, 1911), and a "repetition compulsion" (Freud, 1914) of unconscious themes.

The more contemporary followers of psychoanalytic theory see the need for play and competitive sports as a function of the ego. For example, Erikson (1950) states that play is the "royal road to understanding of the infantile ego's effort at synthesis." In a word, play enables the person to integrate novel experiences.

The behavioristic position, or the learning theory approach to play and competitive sports, was first stated by Hull (1943). Hull's theory of learning emphasizes primary and secondary drives and subsequent reinforcements. Play in this view is reinforced by secondary rewards such as recognition, status and prestige.

An extension of Hull's learning model would be the work of Miller and Dollard (1941), which states that imitative learning could be an important factor in the need for competitive sports.

The cognitive position emphasizing rational thought is exemplified by Mead (1934). He sees involvement in competitive sports as a means of achieving socialization. Therefore, sports provide a vehicle for the young athlete to incorporate the desired qualities he sees in other performers. This would entail a process of identification with the performer followed by the internalization of these qualities, so that play and sports become an integral part of his total personality.



## Sport Psychology

In addition to the general theoreticians who deal with the understanding of play and athletic activity, there has also developed a sub-speciality in psychology, called Sport Psychology.

According to Vanek and Cratty (1970) Sport Psychology presently has three major areas of focus:

1. the study of general motor behavior, motor learning, and motor development;
2. the study of athletic performance characterized by research and intervention regarding the psychological preparation of the athlete and/or team, with special interest in athlete selection, personality dynamics, pre-competition, final performance and post-competition; and
3. research and intervention into the social psychology of team and individual sports, with special emphasis on communication, spectator-athlete relations, organization of sports, sports as a cultural phenomenon, sports and television.

## Motor Behavior

In the United States the initial area for study for the sport psychologist was that of motor behavior and motor learning. In 1928, Coleman Griffith was director of the motor learning laboratory at the University of Illinois and was the author of a text on the scientific principles of instruction in various sports (Griffith, 1928). During the 1930's John Lawther at the then Pennsylvania State

College and Clarence Ragsdale at the University of Wisconsin also established laboratories to conduct research on motor behavior and sports (Vanek and Cratty, 1970).

The Research Quarterly, published in 1930, became the first journal to report the research findings of the physical educators and psychologists who were actively studying motor behavior and sports.

#### Maximizing Athletic Performance

Sport psychology essentially emphasized the study of motor behavior until the 1960's. At that time American athletes and coaches began to be aware of the European, and especially the Russian, effort to systematically apply psychology to the selection, training and mental preparation of their athletes (Morgan, 1980). The 1960 Melbourne Olympics served as the catalyst for American athletes and coaches to begin a search for a better understanding of the psychological foundations of superior athletic performance (Vanek and Cratty, 1970).

The First International Congress of Sport Psychology, held in Rome in 1965, further made Americans aware of the advances in the study of the psychological characteristics of athletic performance.

As a result of these events the improvement of athletic performance has become a high priority to both the athlete and the coach. The wish to repeat peak athletic performance time after time has encouraged research and training techniques designed to maximize athletic

execution (Nideffer and Deckner, 1970; Kukla, 1976).

### Social Psychology of Sports

An athlete may appear to be performing in isolation but he is seldom psychologically alone. Unseen audiences - family, friends, teammates, coaches and spectators - form an important part of the total milieu of the competitive athlete. The athlete's perception of these influences will have a powerful plus or minus influence on total performance.

The social psychologist Loy (1968), for example, considers people involvement in sports as either of the producer or consumer mode. Sports involvement at the sociological level of analysis becomes a highly complex network of roles, interactions and relationships.

The disciplines of psychology, sociology and social psychology support and supplement each other in studying the social aspects of sports.

## CHAPTER II

### THE STUDY

This study concentrated on the second area of focus of sport psychology, namely, maximizing athletic performance. The study has extended the existing knowledge and training techniques available for increasing the level of athletic performance.

The present study grew out of a personal interest of the investigator to help competitive athletes (1) to maximize their athletic potential, and (2) to increase the personal joy and satisfaction associated with their performance.

The investigator brings to this study a lifelong involvement in sports as both a player and a coach of various competitive sports, both individual and team. In his sports life he has personally experienced the frustration and pain associated with underachievement and inconsistency in athletic competition. Associated with these sports experiences in the last twenty years has been, for the investigator, the conduct of a clinical practice in psychology to help people realize more of their potential.

#### Purpose of the Study

The purpose of this study was to develop a

psychological training technique that will help maximize athletic performance. It was hoped that the technique developed will reflect the present state of the art with regard to the psychological characteristic of superior athletic performance. The study is experimental in nature in that it tested the rationale of the training technique.

The psychological training techniques designed for this study to improve athletic performance have been developed by applying and extending known basic psychological research and theory to competitive athletes. In order to provide an understanding of this foundation, four critical psychological factors in training should be examined. These factors are:

- (1) Readiness and Performance
- (2) Arousal and Performance
- (3) Attention Focus and Performance
- (4) Existing Training Technique

#### 1. Readiness and Performance

Prior to executing an athletic task there exists a state of mobilization readiness. There are three aspects to readiness: psychic, biological and motor.

It is assumed that the more successful the athletic performance, the higher the level of mobilization readiness within the athlete. This assumption has a sort of face validity. It is a reasonable assumption. Coaches implore their athletes to get ready both physically and mentally.

Historically the groundwork for the study of readiness was initiated by Helmholtz (1850). Helmholtz, a physiologist, measured the speed of conduction in a frog's motor nerve. He also extended his investigation to study the reaction time of human sensory nerves. Exner (1873), another physiologist, added to the earlier work by pointing out the importance of preparatory set within the individual prior to their reaction time.

Wundt (1879) opened the first psychological laboratory at the University of Leipzig and significantly expanded the research on measuring reaction time.

Woodworth and Schlosberg (1938) wrote a text on experimental psychology that still remain a classic. The work provided a summarization of experimental studies on perception, attention, readiness, motor behavior and learning.

As a result of the earlier contributions of experimental psychologists, sport psychologists became interested in studying the athlete's activity before performance.

Filip Genov (1960, 1961, 1965, 1966, 1970), a Bulgarian sport psychologist, provided extensive research in this area. He suggested the state of mobilization readiness should be determined by the following factors: (1) the structure of the impending action; (2) the degree of previous training; (3) the surroundings and conditions where the performance will occur; (4) the personal and social importance the athlete attaches to the performance;

(5) the athlete's perception and self-assessment of his preparation; (6) the degree of difficulty of the task; (7) the personal experience of the athlete in previous times of competition; (8) the state of health of the athlete; (9) the state of mood prior to performance; (10) the amount of time available immediately prior to the execution; (11) and the ability of the athlete to regulate the level of arousal.

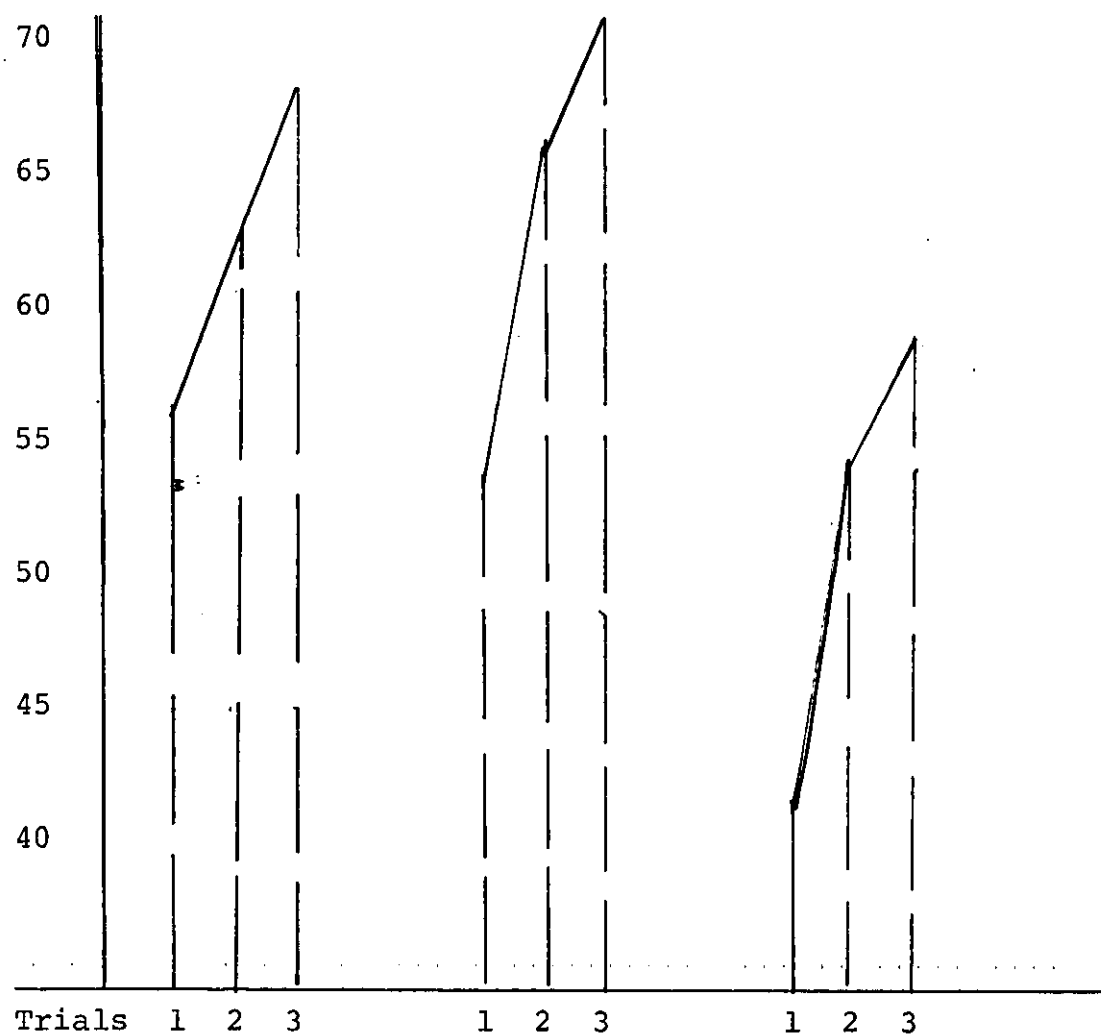
Genov's (1970) theory on mobilization readiness was developed out of his research efforts with over 2,000 athletes. Among these athletes, 102 were bearers of gold, silver and bronze medals in international competition. This group also held 58 world records. The medalists represented diverse sports: weight lifting, track and field, wrestling, gymnastics, rowing, basketball and football.

Figure 1 (see page 11) reflects an example of one of Genov's studies. He measured the duration of time needed by a championship weight lifter, L. Zhabatinski, in the 1965 World Weightlifting Championship. The results indicate that as the weight increased the athlete required more time to develop the necessary readiness for successful performance. Further studies revealed that all successful weight lifters followed a similar pattern. In addition, Genov found that high jumpers, as a group, also required more time as the height of the jump increased.

Romanov (1966), a student of Genov, studied foul

Figure 1

Dynamics of the duration of time of concentration of  
L. Zhabotinski (USSR) at the World Championships in  
Teheran (1965) (Genov, 1970)





shooting efficiency. He found that without warming up basketball players achieved 43.6 percent and after immediate warm up rose to 59.6 percent. In addition, if the players warmed up but didn't shoot immediately the percentage of completion dropped to 50 percent.

## 2. Arousal and Performance

The psychophysiological level of an athlete prior to and continuing throughout athletic performance constitutes his arousal level. Arousal, the intensity aspect of behavior, is often critical to the outcome of the performance.

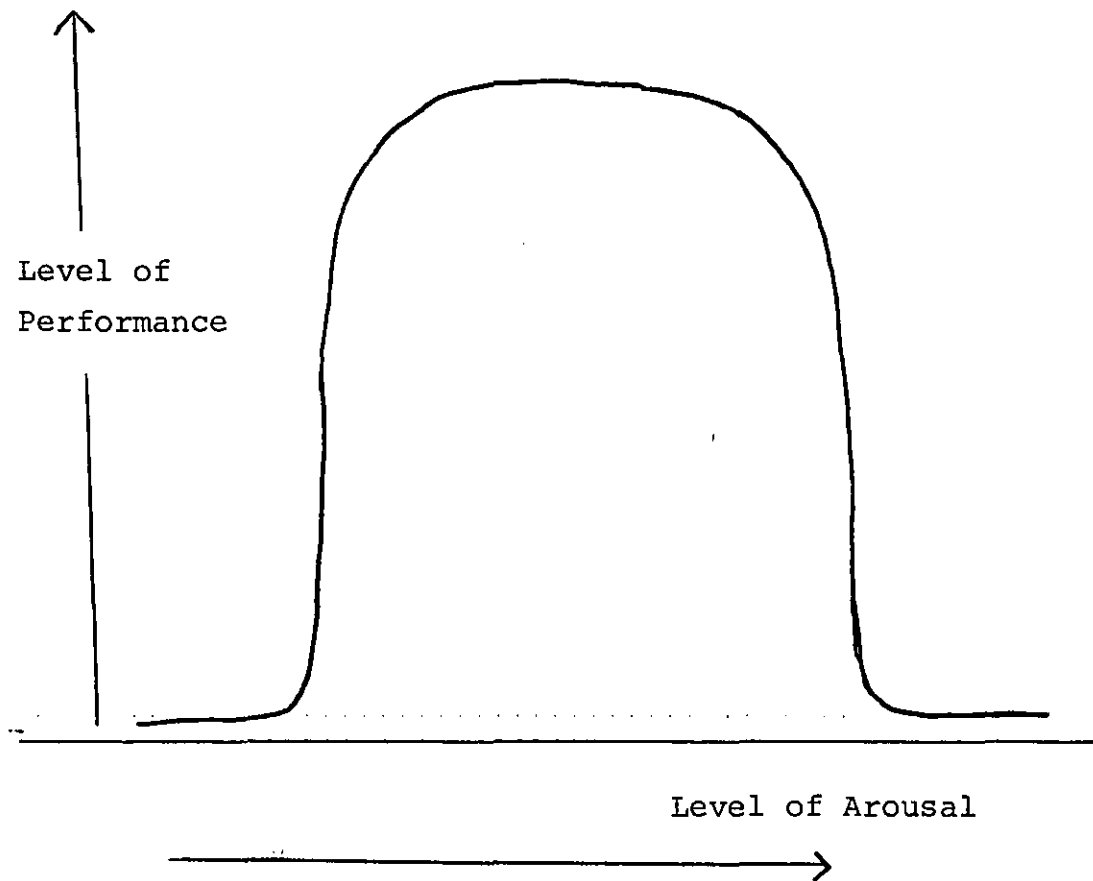
Common parlance among coaches is to encourage their athletes to be highly energized for the performance. "Be hungry", "get up", and "stay tough" are coaching watch words that express the level of arousal the average coach expects of his athletes. However, research has questioned this style of coaching or competing.

The foundation study for understanding arousal level and performance was enacted by Yerkes and Dodson (1908). They were interested in studying the relation of stimulus to rate of learning. By manipulating experimentally both strength of stimulus and difficulty of task they arrived at the Inverted U Theory. (See page 13 , Figure 2) Their findings indicated that complex tasks are performed better when one's drive is low, while simple tasks are performed better when one's drive is high.

Nideffer (1976) applied the insight of the Inverted U Theory to athletic performance by pointing out that as

Figure 2

Figure 2 Inverted-U performance-arousal curve (Yerkes and Dodson 1908)



anxiety first begins to increase performance improves.

He also found that as anxiety continues to increase athletic performance levels off, until with further increases of anxiety (beyond optimal levels) performance starts to deteriorate.

Cratty (1968) also indicated that successful athletic performance is related to optimal levels of arousal. He reported that what determines optimal levels depends upon both the individual as well as the nature of the athletic task to be performed.

Sage (1971) studied the problem of activation and arousal on a neuropsychological level. He found that a minimum amount of cortical arousal is necessary or specific sensory messages die at the cortex, that is, in near sleep levels of activation low stimulation will not encourage adequate response.

Sage also found that high levels of activation of readiness results in a narrowing of behavioral repertoire, that moderate arousal organizes behavior because it improves neural transmission, that low arousal reduces neural transmission; therefore, input is not fully processed and that high arousal overly activates the system; therefore results in an inability to coordinate input with motor reaction.

Oxendene (1970) also applied this basic research on arousal to improving athletic performance.

Table I (see Page 16) shows Oxenden's conception of levels of arousal appropriate for particular athletic tasks. However, determination of arousal level is a highly individualized matter and in the end only the individual athlete can determine what is appropriate for his performance.

In basketball foul shooting Ahart (1973) reported performance was related to score differential at the time the shots were taken.

Ahart's results, as indicated in Table 2, (see Page 17) reflect a close alignment with the Inverted U Theory; namely, the highest completion percentage occurs when the player's arousal regarding the score is moderate. Lower performance resulted when arousal over the score was too high or too low. This study indicated that the relative score of the game had a direct relationship with the arousal level of the athlete and his performance.

As stated previously, one's arousal level is a combination of both the physical and emotional aspects of an individual. The emotional side of arousal has also been referred to as one's anxiety level.

Anxiety has been studied in terms of both trait and state characteristics. Trait anxiety refers to the general level of anxiety. Kauss(1980) refers to trait anxiety as a person's long standing personality style. He indicates that trait anxiety has little relevance to producing or deterring good athletic performance.

In contrast, state anxiety is one's momentary reaction

TABLE I

Optimum arousal level from some typical sports skills

<u>Level of arousal</u>	<u>Sports skills</u>
#5 (extremely excited)	football blocking and tackling performance on the Roger's PFI Test running (220 yards to 440 yards) sit up, push up, or bent arm hang test weight lifting
#4	running long jump running very short and long races shot put swimming races wrestling and judo
#3	basketball skills boxing high jumping most gymnastic skills soccer skills
#2	Baseball pitchers and batters fancy dives fencing football quarterback tennis
#1 (slight arousal)	archery and bowling basketball free throw field goal kicking golf putting and short irons skating figure 8's
0 (normal state)	

TABLE II

Foul Shooting Competition Percentages as Related  
to Game Score Differential (Ahart, 1973)

Points behind in Game						Points ahead in Game							
9+	5	-	8	1	-	4	1	-	4	5	-	8	9+
53%						53%							
69%		50%				72%		55%					
% of Fouls Completed													

that can be attributed to a particular situation. Therefore, the athlete's perception of excessive state anxiety could be detrimental to his performance.

Spielberger (1970) developed the State-Trait Anxiety Inventory to evaluate both trait and state anxiety (see Appendix A). The S.T.A.I. has been used rather extensively to study the anxiety level of athletes (Slevin, 1970, Burton, 1971, Kukla, 1976).

In conclusion the literature indicates the ideal solution is for the athlete to have awareness of his arousal and appropriately fine tune the arousal to the task at hand.

### 3. Attention and Performance

The successful athlete controls the mental process of concentration for the purpose of recording and processing the internal and external information essential to appropriate decisions and/or actions.

E.B. Tichenor (1901), an early experimental psychologist, studied conscious experience which he referred to as "attensity".

He considered attensity to be a sensory experience that had clearness, vividness, prominence or insistence. Furthermore, he concluded that the focus of one's attensity stands out above all else in our consciousness.

In all sports there is concensus that the athlete's ability to focus upon and control his attention is central to his athletic competence. Sport psychologist David

Kauss (1980) prefers the term attention while most athletes and coaches think of the process as concentration. He points out that the word concentration is not only non-specific but is also loaded with unnecessary emotion and guilt. Concentration he points out has become a yardstick by which athletes are measured as people. According to Kauss the term concentration is often inaccurately used as being synonymous with inner strength, courage and virtue. He states that nothing can be further from the truth since attention focus is a learned response.

Michael Murphy (1978), a sport psychologist and co-founder of the Esalen Institute in California, has interviewed and studied a significant number of superior contemporary athletes.

In regard to focusing attention for athletic performance Murphy indicates that the great athletes totally immerse themselves in the present moment. His interview with former San Francisco quarterback John Brodie aptly expresses the ability of the superior athlete to fine tune his concentration. Brodie states:

"A player's effectiveness is directly related to his ability to be right there, doing that thing, in the moment. All the preparation he may have put into the game--all the game plans, analysis of movies, etc.--is no good if he can't put it into action when game time comes. He can't be worrying about the past or the future or the crowd or some other extraneous event. He must be able to respond in the here and now." p.25.

Nideffer (1976) developed a four quadrant scheme to



illustrate the characteristics of attention. (See Figure 3, page 21)

His work has made a significant contribution to the understanding of attention as well as to provide guidance for the coach and athlete in improving attention focusing. According to Nideffer attention is a two-dimension psychological characteristic. The first dimension is that of width, on which attention can vary from broad to narrow.

In broad attention focus athletes touch everything evenly; an evenly suspended attention style. At the other end of the width continuum a narrow attention focus results in the athlete's becoming oblivious to all other stimuli except the subject of the narrow focus.

The second dimension of Nideffer is that of direction, on which the scale can be calibrated from internal at one end to external at the other.

In internal focusing the athlete becomes introspective and focuses on his thoughts or bodily sensations.

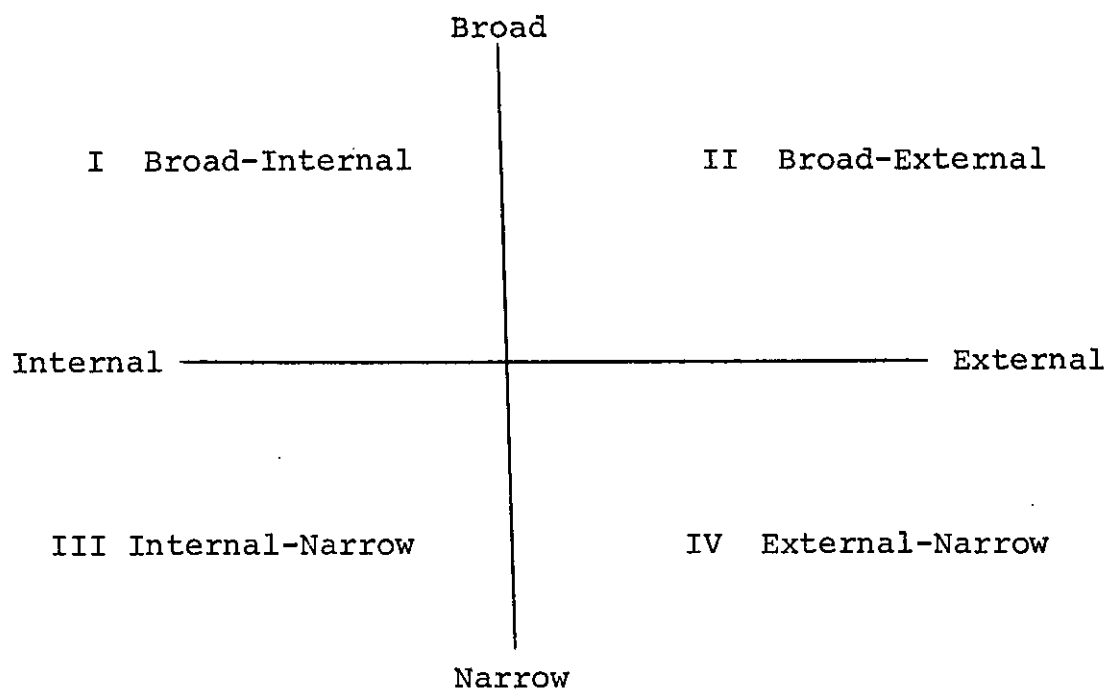
Given these four dimensions of attention focus, Nideffer then provides four categories or types of attention focus: External attention results in the athlete focusing on objects and events that are outside his body.

Quadrant I of Figure 3 represents a broad-internal focus that features an analytical emphasis. When applying this style the athlete or coach is able to make observations and plan game strategies.

Quadrant II, the broad-external focus, represents the

FIGURE 3

Nideffer's Four Fold Scheme for Attention Focus  
(Nideffer, 1976)



ability to respond to sports that require complex and rapidly changing situations. Fast moving sports such as basketball, hockey and football most often require a broad-external emphasis.

Quadrant III, the narrow-external focus is extremely useful to the athlete who needs to respond only to limited external clues and whereupon the physical action required can continue without modification. Examples of narrow-external would be in golfing, baseball hitting, bowling and most track and field events.

Quadrant IV, the narrow-internal focus, allows athletes such as swimmers and distance runners to increase their endurance and tolerance for pain. Their sports do not demand they respond to rapid or sudden environmental changes and therefore their energy can be saved for introspection and rhythm building.

Nideffer (1976) further recommends that athletes be flexible and versatile in the application of their attention.

Sage (1971), as reported before, indicated that there is a close link between attention focus and arousal level. For example, high arousal narrows attention but relaxation broadens the focus. Therefore it appears athletes can maintain their attention focus as long as they can control their arousal level.

In summary, there is sufficient research to indicate that the readiness, arousal level and attention focus of

the athlete has significant impact on athletic performance.

Appropriate preparation and attention will optimally release the chain reaction of physical and mental processes that will result in integrated performance.

Yuri Vlasov, the great Russian weight lifter, expressed the feeling of ideal readiness and arousal in his quote to Robert Lipsyte of the New York Times (Nideffer, 1976):

At the peak of tremendous victorious effort, while the blood is pounding in your head, all suddenly becomes quiet with you. Everything seems clearer and whiter than ever before, as if great spotlights have been turned on you. At that moment you have the conviction that you contain all the power in the world, that you are capable of everything, that you have wings. p.12.

#### 4. Training Techniques

As a result of the research in the areas of mobilization readiness, arousal level and attention focus, training methods have been employed to help the athlete to regulate and control his critical psychological characteristics.

Cratty (1973) has characterized the methods under the following headings: (1) reduction of contest's importance, (2) social isolation prior to the competition, (3) induction of minor muscle fatigue through exercise, (4) variation of one's sexual activity, (5) hypnotism, (6) autogenic training, and (7) progressive relaxation.

Two of these methods, Progressive Relaxation (Jacobsen, 1938) and Autogenic Training (Schultz, 1959), are the most sophisticated and frequently used psychologically-based training techniques.

Progressive Relaxation, developed by Jacobsen (1938), is a training technique designed to reduce and control residual muscle tension. According to Jacobsen, to control tension one must first recognize the state of tension. Therefore, by tightening particular muscle groups for approximately ten seconds and then relaxing them an individual becomes aware of the contrast between tension and relaxation. The exercises are progressive, starting either in the hands or feet and then continuing through other muscle groups until the entire body has been tightened and then relaxed. As a result of the exercises the athlete becomes aware of gross tension and relaxation states and through practice can determine more refined differences. As a result of practice athletes learn to lower their tension threshold as well as to assess and control at will their muscular system.

In addition to learning control over muscular tension, Jacobsen (1939) hypothesizes there is a direct "line" between the muscular system and the emotional system.

When there is conscious control over the peripheral skeletal muscles there is a reciprocal effect of control over the mental and emotional system.

Autogenic Training was developed by Schultz (1959), a German physician, to teach the individual to control consciously his physiological processes, such as, breathing, digestion, blood circulation, metabolism, body temperature as well as his control over readiness, attention and

arousal. Autogenics has many of the characteristics of progressive relaxation but has also the added power of suggestion, somewhat like self hypnosis.

The procedure starts with relaxation training and then focuses on visualization exercises. The individual is asked to imagine the heaviness of various parts of the body while remaining in a comfortable, relaxed position. After the athlete can establish heaviness or lightness in any part of the body at will, the focus becomes control over body temperature, breathing, heart rate and any other physiological function.

After learning to control bodily functions, the second level of autogenics, namely visualization and suggestion, is practiced.

The second level of autogenics has the athlete, in his mind's eye imagine the forthcoming competition and his own successful performance. Under the power of positive thinking, detailed images of every moment and movement of performance is visualized.

Glenn Patton, coach of the University of Iowa swim team, suggests the importance of autogenics and progressive relaxation by stating, "The biggest untapped area in athletics is mental training and before 1980's end, I think that every major sports university is going to have a full time psychologist on its staff." (Jares, 1980).

Patton has had first hand experience with sport psychology as he enlisted the aid of Dr. Eugene Gauron, a

psychologist at the university, to train his team on a three times per week basis. Dr. Gauron applies group therapy, progressive relaxation, visualization, autogenics and zen meditation to maximize the swim team's performance. The results reported by both the athletes and coach indicate significant improvement in the team's record. (Jares, 1980).

During the 1976 Olympics Peter Karns, coach of the United States Olympic Biathlon Team, trained his team with the help of sport psychology. He credits the improved performance of his skiers to visualization and relaxation training.

Bob Kriegel, a ski coach and co-author of Inner Skiing (Gallwey and Kriegel 1976), applied the use of sport psychology techniques to his coaching. His association with Timothy Gallwey, a tennis professional, has led to the application of the concept of the Outer Game vs. the Inner Game. This notion of sport psychology has been well expressed in Gallwey's The Inner Game of Tennis (1974). Essentially the training puts emphasis on the process of the athletic experience rather than on the results.

In the inner game concept the athlete frees himself of his critical superego. As a result of subduing this inner judgmental process the athlete is able to receive and correctly interpret feedback from his body and senses. This feedback information is essential to continuation of a good performance (Gallwey, 1974).

Carl Wilgus, a writer for Skiing Magazine, has written popular articles endorsing sport psychology techniques for both the recreational and competitive skier. The titles of the articles, "Mind Over Skies: Putting a Gag on the Inner Judge," (1979), "Breaking Out of Ruts! Get out of Boredom and Get Joy Back" (1980), and "Transcendental Skiing" (1980) reflect his interest in sport psychology.

Wilgus recommends Zen meditation, visualization and developing the 'inner game' as helpful techniques to improve athletic performance.

In the field of tennis, Vic Braden (Kessler and Braden, 1979) personifies an outstanding example of both player and coach. Braden is considered to be one of the finest tennis coaches in the world and through his efforts Arthur Ashe as well as other tour players have come closer to their potential. Braden, himself a professional psychologist, applies a variety of visual and mental rehearsal techniques in his coaching.

Richard Suinn (1972), a psychologist from Colorado State University has developed a technique called cognitive rehearsal (C.R.) to help athletic performance. Cognitive rehearsal combines progressive relaxation (Jacobsen, 1938) and mental practice (Clark, 1960). The goals of C.R. as stated by Suinn are threefold: (a) facilitating motor performance under stress; (b) developing new skills to cope with anxiety; and (c) developing confident feelings during performance.



Although Suinn's method appears to be effective for some athletes, he has not produced experimental evidence to support the effectiveness of his training.

Thomas Tutko (1976), a psychologist at San Jose State College, also developed a technique to improve athletic performance. The goal of his training is focused on this single vision:

Recall the best you ever had at your sport - the day you were "hot", the day your moves were flawless, when you seemed able to put the ball where you really wanted to, to make your equipment respond to your every whim. That's the day we're going to try to give back to you again and again. (Tutko, 1976) p.2.

Tutko's recommendations for peak athletic performance are based on five principles: (1) getting loose (lowering arousal, Jacobsen, 1938), (2) breathing easy (maintaining appropriate arousal levels, Genov, 1966), (3) staying on the ball (appropriate attention focus and control, Nideffer, 1976), (4) mental rehearsal (imagery training, Clark, 1960 and Suinn, 1972), (5) body rehearsal (autogenics, Schultz, 1959).

Tutko's training technique has been used on an individual basis with both professional and amateur athletes. Although he claims positive results he has thus far not subjected his training technique to rigorous experimental conditions.

Nideffer and Deckner (1970) investigated the effects of Jacobsen's (1938) progressive relaxation training with one collegiate subject who performed in the shot put event.

The results showed a significant increase in actual competitive performance. It was concluded that the relaxation training decreased tension in the athlete; thus resulting in a higher level of precision, timing and coordination. This study had the limitation of using a single subject and did not attempt to control for other possible variables.

Decaria (1977) trained ten female high school gymnasts in cognitive rehearsal (Suinn, 1972) and subsequently tested them to determine the effects of C.R. upon actual gymnastic performance and self-reporting of performance anxiety. As a result of having a small sample (10) he employed an experimental design that had a multiple baseline incorporating one independent variable, two dependent variables and multiple subjects as described by Revusky (1967). His results showed that cognitive rehearsal modestly enhanced actual gymnastic performance and produced an immediate and cumulative decrease in self-report of anxiety by the gymnasts.

Kauss (1976) studied motor performance and psychological factors along two major dimensions: (1) that of activation, and (2) that of attention. His study used a sample of 39 varsity football players, from the 1975 - 76 U.C.L.A. team. Pre-season measures of resting heart rate, player self-ratings of anxiety and activation levels were contrasted against measures taken before each home game. The study found that (1) anxiety and activation can be empirically distinguished, (2) there is no simple linear

relationship between anxiety and activation, or between these states and athletic performance, (3) it is the relative and not absolute (anxiety and activation) levels of each player which relate to performance, (4) general, positive performance profiles can be identified, (5) both trait and state notions of anxiety and activation are relevant and do exist, and (6) anxiety does effect athletic performance.

Kukla (1976) also studied the effectiveness of progressive relaxation training (Jacobsen, 1938) upon athletic performance. His doctoral dissertation, The Effectiveness of Progressive Relaxation Training Upon Athletic Performance During Stress (1976), was one of the first studies to substantiate by adequate empirical investigation the positive benefits of a psychological training technique for competitive athletics.

Kukla trained an experimental group of high school baseball players in progressive relaxation for six sessions. As a result of treatment he found significant improvement in baseball hitting against a curvemaster pitching machine and a significant reduction in state anxiety as measured by the Spielberger Inventory (Spielberger, Gorsuch and Lushene, 1970). Kukla's sample was composed of fifty-one male high school players who were randomly assigned to one of three groups: experimental, placebo and control.

Kolonay (1977) applied an updated version of Suinn's (1972) cognitive rehearsal technique to improve basketball free throw shooting. The technique entitled visuo-motor behavior rehearsal (VMBR) was found to be significantly more effective than either mental imagery or relaxation training alone in improving foul shooting skills. The VMBR group listened to a 10 minute relaxation and free-throw audiotape prior to each of 15 basketball practice sessions, while other groups listened to the relaxation tape alone, the imagery tape alone, or engaged in non-relevant activities.

Analysis of Kolonay's research by Weinberg, Seabourne and Jackson (1981) indicated the following criticism's: (1) the statistical analysis did not determine if the groups in the study were significantly different at the start of treatment, (2) the study did not report how the independent variable was manipulated, (3) nor how the dependent variable was assessed, and (4) the study did not include a placebo group.

In order to improve the research design and replicate further study on the affects VMBR Weinberg, Seabourne and Jackson (1981) conducted a similar study on karate performance. The studies included 32 males, members of a university karate club who after initial evaluation of ability differences were randomly assigned to one of four groups (VMBR, relaxation, imagery or attention placebo condition). The four study groups received

their selected treatments two times a week for a 6 week period. The results of the study indicated that the VMBR group performed significantly better than either of the other three groups on karate sparring skills. The conclusion of the study indicated that the VMBR group learned to combine relaxation skills along with imagery and that this dual psychological training allowed the athletes to develop a relaxed concentration and focus so the relevant clues in the karate environment could better be interpreted and this produced significantly improved performance.

Noel (1980) also studied the effects of visuo-motor behavioral rehearsal (VMBR) training on athletic performance. He studied the effects of VMBR training on tennis players of varying skills. The study recruited fourteen male volunteers who were scheduled to play in a county level tennis tournament. The players were essentially of two levels of skill A, B or C,D. A pretournament practice was held to evaluate the serving skills of the subjects. They were then randomly assigned to a V.M.B.R. treatment group or a control treatment group. The VMBR group was then given an initial training session in the Jacobsen (1938) relaxation approach. Afterward the experimental group was asked to listen to a relaxation and visualization tape for ten consecutive days. At the end of the self applied training, the results of first service for the first set was recorded during the

county tournament for both groups and the results were compared against the pretest service results.

Although the results of the study did not reach the conventional levels of significance the high ability VMBR players demonstrated consistent improvement in performance on pretest, versus posttest comparison. The low ability VMBR group however demonstrated a deterioration in serving ability on pre-post analysis.

Noel explains that the possible reason for the decline in scores for the low ability group could be due to the fact that the imagery on the tape was patterned after an advanced level classical tennis serve. The obvious difference in stroke for the low ability player as compared to the desired norm of the tape could both intimidate and prevent imitation of the serve. Noel concludes in his study that possibly low ability players need more actual practice rather than only VMBR training or that the quality of imagery for lower level players be substantially reduced.

Meyers and Schleser (1980) approached the problem of how to improve athletic performance by studying the cognitive approach of superior athletes. Recent research by Morgan and Pollock (1977) and Mahoney and Avenger (1977) revealed that cognitive strategies differentiated more successful from less successful competitors. Champion performers demonstrate a coping-oriented cognitive approach to the athletic task that enables them to

have an associative/monitoring style as compared to a dis-associative or body distraction style of the less successful athlete. Myers and Schleser extended the research in the cognitive approach by diagnosing and training a NCAA division I male basketball player in cognitive strategies that significantly improve his actual game performance on a pre versus posttest comparison.

The athlete in this case study, came to the experimentors with concentration and self-confidence problems. He was having substantial internal conflict during the early part of the competitive season. As a result of the immediacy of the problem the experimentors treated the player for seven individual sessions over a three week period. The treatment started with assessment of the player's cognitive style. During the second session the athlete was trained in the standard Jacobson (1938) relaxation technique. Subsequent sessions employed training in concentration through imagery and coping orientation Meichenbaum (1977). The athlete was presented with information of the benefits of attending to the athletic task demands and not dwelling on performance errors.

The results of this case study approach, although demonstrating an improvement in actual game scoring and accuracy at the .05 level of confidence, will be questioned due to a lack of experimental controls. The explanation for improved performance could be viewed as a result of additional noncontrolled factors other than the treatment

afforded the subject.

Although the study lacks controls the results strongly support the value of cognitive training in improving athletic performance.

#### Summary

The study was designed to develop and test a psychological training technique as an aid to maximize athletic performance is set forth in the following chapter. The study is built on the review just made of the literature. The foundations of the study are based on the following theories: (1) that self-image determines performance (Maltz, 1960), (2) that athletic performance is influenced by one's level of arousal (Genov, 1966), (3) that an optimal level of arousal exists within each individual that will permit maximum athletic performance (Oxendune, 1970), (4) that levels of arousal beyond or below the optimal range will result in errors in attention focus and control (Sage, 1977), (5) that automatic performance is only possible when the athlete finds optimal arousal and appropriate attention focus (Nideffer, 1976) and (6) that psychological training techniques have been effective in developing desired levels of arousal, appropriate attention focus and automatic performance for athletes. (Nideffer and Deckner, 1970, Kukla, 1976, Kolonay, 1977, Weinberg, Seabourne and Jackson, 1981, Noel, 1980 and Meyers and Schlessner, 1980).

Although the literature in sports psychology documents



the development of effective training techniques to improve athletic performance, there still remains a void in the available training methods. With the exception of Tutko's training technique (1976), which is more comprehensive than other methods (but also needs to be experimentally tested), the state of the art in trainings reflects methods that are designed to approach training by focusing on meta skills on a limited and specific basis. This criticism is not made to deny the effectiveness of the training but rather to point out that there remains the need for the development of a more comprehensive model that will provide the athlete with a better handle on improving his or her athletic performance. For example the existing techniques do not provide for dealing with the pre-performance motivation levels of the athlete. The present techniques assume that all athletes are equally dedicated to performing prior to the athletic task. This assumption is overly idealistic and naive. Support for mixed and equivocating motivational levels can easily be observed by simply viewing the contemporary sport scene as reflected in the media coverage of athletes' attitudes and behaviors during performance.

In addition the existing techniques essentially focus on only lowering arousal levels when it is very possible that some athletes will actually need to increase their arousal. In conclusion the present techniques are focusing on limited training (mental rehearsal, relaxation

response, and cognitive strategies, and do not provide the athlete with an overall awareness of the importance of the psychological factors that underlie all aspects of performances. As an athlete becomes aware of the rationale behind psychological training there is more possibility the knowledge will be transferrable to the entire spectrum of their sport behavior as well as their personal lives.

Consequently, the present study, after a full appreciation of what currently exists, had a goal to develop a training technique that would resolve the above indicated objections and then be subjected to traditional experimentation.

#### Hypotheses

The following null hypotheses were tested:

1. There were no statistically significant differences in state anxiety scores as measured by the Spielberger Inventory between pre and post test measures, after exposure to the respective treatments of the study.

2. There were no statistically significant differences in non-game foul shooting between pre and post test measures, after exposure to the respective treatment of the study.

#### Limitations

1. Only one measuring instrument was used to determine arousal level: The Spielberger State-Trait Anxiety Inventory.

2. Only one athletic task (foul shooting) was used to enable the athletic trainers to focus on just one skill.

3. The results of the study will be limited in generalization to other sports.

4. Due to the subjects being in the midst of a competitive season only a three session treatment program and two self applied reinforcements was implemented.

5. Due to the suggested prerequisites for using autogenics and/or progressive relaxation, the results will only be reflective of the study population.

6. At certain times it was necessary to have the research act as an experimenter during the study. The assignment of the researcher however was on a random basis.

#### Definition of Terms

The following will serve as definitions for the study:

1. Arousal Level

A particular point on a continuum that would indicate the psychophysiological level of an athlete prior to and throughout his athletic performance.

2. Gross Motor Task

A form of motor behavior that involves large muscle coordination specifically applied towards accomplishing a goal.

3. State Anxiety

Is the subjective perceptions of the athlete as he performs under stress. State anxiety is one phase of

the arousal concept. Generally when anxiety is high or low the physiological level of the athlete is at a commensurative level.

## CHAPTER III

### METHODOLOGY

The purpose of this study as set forth in Chapter II, above, was to develop a psychological training technique that would improve basketball foul shooting performance and reduce the state anxiety levels experienced by the subjects when in the foul shooting situation.

Three groups were used in the study: (1) the experimental treatment group, whose members received a six step training technique (2) the placebo treatment group, whose members received a placebo treatment, and (3) the control treatment group, whose members received no treatment.

In order to control the effect of extraneous factors, such as the eight threats to internal validity identified by Campbell and Stanley, (1963), the study employed a pretest-posttest procedure on the experimental, control and placebo groups. Random assignment was also implemented so that each team within the respective population would have an equal chance of being assigned to the respective groups.

#### The Study Sample

As the literature indicates training techniques that are based on autogenics and/or progressive relaxation have

been found to be effective when the athletes to be trained (1) demonstrate an I.Q. of over 100; (2) have the ability to concentrate intensely; and (3) be reasonably suggestible. (Vanek and Cratty, 1970)

As a result of these suggested pre-requisites it was thought by this investigator that the sample be chosen from a population that would have a high probability of satisfying these requirements.

After reviewing the characteristics of high school basketball teams in New Jersey, the Colonial Hills Athletic Conference was chosen as the target population. The rationale for the selection was based on the following: 1) male high school basketball players were thought to be highly motivated to win and as a result intense in their effort and suggestible to try new procedures towards reaching their goal, 2) suburban high school players would have more probability of having I.Q.'s over 100 than inner city players, and 3) the population chosen should be easily accessible to the experimentors.

The following school teams comprise the conference:

Bernards High School	Varsity	Junior Varsity
Cedar Grove High School	Varsity	Junior Varsity
Chatham Boro High School	Varsity	Junior Varsity
Chatham Twp. High School	Varsity	Junior Varsity
Glen Ridge High School	Varsity	Junior Varsity
Mountain Lakes High School	Varsity	Junior Varsity
West Morris Mendham High	Varsity	Junior Varsity

Whippany Park High School      Varsity      Junior Varsity

All of these schools are located in suburban communities that are demographically very similar. They are small schools, Group I in size, with student populations ranging from 368 to 671 pupils, which are almost exclusively white and drawn from middle and upper socioeconomic groups. Over 80% of the students go on to college and their mean total SAT score is in the upper 900's.

The decision to use an all male suburban, upper middle class socio-economic population, that was also essentially caucasian in make-up, does not necessarily limit the potential applicability of the Six Step Technique to other populations, i.e. black, hispanic, female. The Six Step Technique should be effective in aiding any individual or group to improve athletic performance providing the presence of minimal ability to understand the effects of psychological states within the athlete. However as optimistic as this prognostication appears final realization of the effectiveness of the Six Step Technique with other groups and sports will remain to be verified by future research.

#### Sample and Design

On a random basis three schools were selected and assigned to the experimental, placebo and control treatments.

The following chart demonstrates the traditional three treatment experimental design.

	Treatment Pre Test		Treatment	Post Test
Experimental Chatham Township High School	Yes	Six Step	Treatment	Yes
Placebo West Morris- Mendham High School	Yes	Placebo	Treatment	Yes
Control Whippany Park High School	Yes	No Treatment		Yes

#### Experimental Group Treatment

Subjects assigned to the experimental treatment consist of two sections, Varsity and Junior Varsity. They were exposed to a psychologically based training technique, entitled "The Six Step Technique."

The Six Step Technique is a combination of progressive relaxation (Jacobsen, 1938) autogenic training (Schultz, 1959) and cognitive information.

For this study the goals of the Six Step Training were to: (1) to teach the subjects the importance of the psychological side of athletic performance, (2) to train the subjects to improve their awareness and control of readiness, arousal, attention focus and execution, (3) to improve their performance in foul shooting, and (4) to reduce their state anxiety when foul shooting.

The technique was developed as a result of studying the literature, interviewing superior athletes and applying the personal experiences of the experimenter as a result of over twenty years as an athlete, coach and sport



psychologist.

The technique, prior to experimentation, was exposed to both construct and consensual validation on an informal basis with both athletes and coaches. The technique has six steps because the logical division of the necessary information resulted in this format. Extensive consideration was given in the development of the technique to avoid redundancy or omission. Hopefully the technique reflects the requirements for comprehensive treatment and yet respects the law of parsimony.

The training included three forty-five minute treatment sessions and three reinforcement experiences.

The trainers were two highly trained professionals (a clinical psychologist and a psychiatric social worker) who have extensive experience in working with high school students.

The Six Step Technique prepared the athlete to utilize the following steps in performance:

1. Pre-Task Development

Athletes should first realize and capitalize on the fact that only they should determine whether they want to participate in a particular athletic performance. As obvious as this premise should be, all too often athletes perform under a cloud of conflict regarding what they really want. As a result of unresolved negative pulls their performance and sometimes safety can become affected.

Therefore, the Pre-Task step provides an opportunity

for the athlete to work through potential conflicts and to enter into the performance with hopefully unequivocal motivation.

Pre-task training is established by having the athlete focus inside themselves for a few minutes prior to the performance. The methods of progressive relaxation (Jacobsen, 1938) and/or autogenic training (Schultz, 1959) is taught to the athlete.

The pre-task question of how much they want to perform will then be initiated by the athlete. Self introspection and self commitment activity will be taught throughout the pre-task step.

A six page form describing the technique was available for the athlete to guide him through The Six Step procedure. (Appendix B)

As an athlete becomes more active in wanting to perform, his behavior becomes less passive and more opportunistic in style. For example, the basketball player on offense, in addition to scoring a field goal, can also by his active intention and behavior draw the defensive player into committing a personal foul. As a result of his opportunistic behavior he creates the task, in this example foul shooting. Therefore, when the player goes to the foul line he knows his active behavior was significant in creating the athletic task.

His rewards are the possible extra point for his team, a personal foul for his opponent and a definite sense

of his control over his game and his opponent.

The offensive player who remains passive in attitude and behavior regarding foul shooting sees this task as occurring accidentally and therefore not under his control nor part of his contribution to being an offensive player.

Basketball referees, although attempting to be objective in calling personal fouls, are also open to subjective pluses and minues towards both individuals and teams. The halo effect and stereotyped thinking of some referees can therefore be capitalized upon by the positively active athletes.

In general the athlete who actively participates in pre-task behavior prior to and during the athletic contest will have a positive feedback in regard to his self image. His behavior will be more positively aggressive and fine tuned. As a result pre-task time should be the cornerstone for all subsequent athletic preparation.

## 2. Mobilization/Readiness (M/R)

The state of readiness prior to athletic performance, which includes psychic, biological and motor processes, constitutes the mobilization/readiness step. There are three time frames: (1) long term; (2) recent; and (3) immediate when M/R can be optimally developed. Both athlete and coach should be aware of all three possibilities and have the athlete work at readiness for performance during each time frame. (Genov, 1970)

For example, the basketball player who is readying

himself for foul shooting can use long term readiness by focusing in on the positive history he has in connection with his long term past basketball training and experience in foul shooting. His recent readiness for foul shooting can also be developed by positively recalling his practice sessions during the few days prior to the game. His immediate readiness can be developed by mentally rehearsing the foul shot just before he makes the actual attempt.

Accurate awareness of the following factors makes for effective readiness for the task: (1) form and content required for execution, (2) degree of preparation, (3) the surroundings and conditions where the performance will take place, (4) personal reasons, (5) state of physical, mental and emotional make-up of the athlete and (6) the time available for performance.

The experimental group was trained in understanding the importance and development of optimal levels of M/R.

### 3. Arousal Awareness and Adjustment

Immediately prior to the initiation of the final execution, athletes need to be aware of and in control of their physical and emotional activational levels. There exists a unique level of appropriate arousal required by the situation and the respective athlete. (Yerkes, Dodson, 1908, Cratty, 1968, Nideffer, 1976)

The members of the experimental group were exposed to experiential exercises that demonstrated the extremes in both physical and emotional activation. The athletes were

then asked to perform shadow foul shooting while being at varying levels of arousals. Each athlete was asked to decide at what level of arousal does he appear to be at his optimal level of performance. In between training sessions the athletes were asked to test their decisions during actual foul shooting practice.

In addition to determining one's own optimal level the athletes were trained in diagnosis and control of their physical and/or emotional arousal levels.

#### 4. Attention Focus and Control

After appropriate readiness and levels of arousal are established the athlete applies himself to the performance by concentrating and then acting. The purpose of the concentration is to collect the necessary facts in order to make correct decisions and actions.

The experimental group was trained in understanding and applying the four fold scheme of Nideffer (1976).

Also inter-relationship between arousal and concentration were explored and experientially demonstrated.

Specific training was emphasized on the narrow-external quadrant so as to improve foul shooting. This allows the player to focus on his arms, hands, the ball and the rim. By zooming back and forth with this style he becomes ready for the release.

Foul shooters who attend to the other three quadrants generally have poor performance.

Broad-internal focus often has the player concerned

with the score and the consequences of his shot relative to winning or losing.

Broad-external focus has the player attending to a Kaleidoscope of images such as the fans, noise, lights, scoreboard, etc.

Narrow-internal focus attends to the players subjective side and his physiological responses; such as his negative self image and nervous stomach.

Superior foul shooters become narrow and external in foul shooting.

#### 5. Automatic

The moment of truth when the athlete applies the totality of his physical and psychological characteristics to the athletic task is essentially 'letting it happen'.

The previous stages should lead one to the edge of execution. The athlete then has put it on automatic.

Attempts by the athlete to control the release for the sake of making it happen will result in a steering and/or quitting action.

Superior athletic performance is characterized by the athlete working at and getting it on "automatic". He reaches a point of unity with himself, the universe, the athletic task and then expresses this harmony in a dance like state. The superior athlete demonstrates a certain rhythm and makes instinctive moves without conscious reason.

In foul shooting after the player has consciously or

unconsciously followed the aforementioned steps he gets to the moment of release. He should then become blank and the ball should be released without the player knowing when or deliberately supplying the energy for the release. Truly an automatic experience. Training again through experimental exercises will reinforce this method of play.

#### Feedback

From the moment of release to completion of the task the athlete needs to observe and record all information available regarding the performance. Feedback not only focuses on the external action but should also be concerned with the internal, covert information regarding the player himself.

This knowledge will then be used in the computerized functioning of the player's mind to correct or repeat again the performance.

Superior athletes work at gaining proper feedback. In the example of foul shooting the player will upon release notice his touch, trajectory of the ball, spin of the ball, results and even the bounce after the ball hits the floor.

#### Placebo Treatment Group

For the purpose of dealing with the placebo or Hawthorne effect a group (containing two sections, Varsity and Junior Varsity) was randomly assigned for placebo treatment. The purpose of the placebo was to provide experimenter subject contact between the pre and post measures.

The goal was to encourage belief in the premise that sport psychology information coming from professionals would have a significant impact on improving their performance on the foul shooting task. The trainers were assigned to the two sections on a random basis.

The placebo group had only two sessions in order to insure a high level of interest as well as to not implement the actual treatment.

The first session focused on a generalized discussion of sport psychology, a catharsis regarding the players attitudes about foul shooting under stress and a focus on the importance of relaxation and rhythm in good foul shooting.

The second session discussed the value of hypnosis, biofeedback and progressive relaxation in athletic performance.

#### Control Treatment Group

For the purpose of providing a no treatment experience a group (containing two sections, Varsity and Junior Varsity) was randomly assigned for control treatment. This group had only two contacts by the experimentors, to measure their responses to the STAI-A-State and to administer the 25 foul shooting test.

#### Instrumentation

The following two measures were administered to all groups on a pre-test and post-test basis.

- (1) Spielberger State - Trait Anxiety Inventory



The Spielberger Inventory (1970) was administered to all subjects to determine their state anxiety when in the foul shooting situation. (see Appendix A)

The S.T.A.I. is composed of twenty items (see Appendix A) that inquire about the subject's subjective feelings when they are at the foul line during actual basketball competition. They are asked to rate each statement, such as "I feel calm," "I feel upset," and "I feel nervous," on a four point scale ranging from Not at all to Very much so.

STAI was initially developed by C.D. Spielberger and R.L. Gorsuch in the fall of 1964 at Vanderbilt University. The goal was to construct and standardized an objective, self-report research instrument that could be used to measure state and/or trait anxiety in normal adults. Concurrent validation studies comparing the STAI with IPAT anxiety scale (Cattell and Scheier, 1963) and the Taylor (1953) Manifest Anxiety Scale (TMAS) revealed .76 and .79 correlation coefficients (Spielberger and Gorsuch, 1970). As a result of the STAI effectiveness at distinguishing trait from state anxiety the instrument has become a popular choice for studying situation specific anxiety in sports psychology research. Slevin (1970) was the first to apply the STAI inventory to measure the effects of anxiety upon athletic performance. The researcher studied fencing and found that low-trait anxiety subjects performed significantly better than high-trait anxiety

subjects for all experimental conditions.

Burton (1977), Klavora (1975) and Kukla (1976) also used the STAI inventory as the instrument to evaluate and measure the changes in anxiety levels of athletes under experimentally induced stress.

Exposure to the Six Step Training was expected to reveal a significant indication of improvement of the athlete to the control and lowering of state anxiety regarding their foul shooting performance.

## 2. Experimental Foul Shooting

All subjects in all three treatments were asked to shoot twenty five consecutive foul shots under the pressure of having their peers and their coach observe and record the results.

The players formed groups of six to eight players. Initially they had a five minute warm up and then each player went to the line and shot twenty five attempts. The rest of the group took game positions along the foul lane.

Prior to shooting the players were given the following instructions, "Your coach is very interested in determining the best foul shooter on the team. He needs to know how you perform under pressure so that in the event he needs an important technical foul to be attempted, he will know which player to choose. Good luck. Now begin."

The rationale for using foul shooting, as the athlete skill, is based on the following reasons: (1) all

six steps of the technique can be applied to the understanding and training of the skill of foul shooting, (2) foul shooting performance requires athletic skills that are similarly observable in most other athletic tasks, i.e. perception, concentration, judgment, strength, muscle memory rhythm and timing, (3) experimental foul shooting results are easily recorded and present unequivocal results, (4) the importance of foul shooting to game end results is a well established fact and therefore improved foul shooting skills are both desirable and pragmatic, and (5) if the Six Step Technique is found to be effective with foul shooting both coaches and players might be more encouraged to adopt the treatment strategies because of the immediate rewards implicit in improved foul shooting ability.

#### Procedures

In an attempt to provide systematic and comprehensive control over all variables, the following procedures were followed throughout the study:

(1) After the population is identified, three teams were randomly selected and assigned to their respective groups.

(2) The groups were not contacted until after the completion of at least seven regularly scheduled games.

(3) During the study all attempts were made not to label any group as to its purpose or function; nor were the fact that any other group existed be revealed.

(4) All three groups followed the same pre and post test treatment; namely during data collection the STAI inventory was administered and then immediately followed by the twenty-five foul shooting test.

(5) The time interval of pre-test and post-test was as close as possible for all three groups.

(6) Because it was expected that each experimental group would contain approximately 20 subjects, the group was divided into two sections; namely Varsity and Junior Varsity players.

(7) The two experimental sections received three treatment and reinforcement sessions each and the two trainers were assigned on a random basis.

(8) The placebo group only received two sessions, so as to maintain high interest as well as not reveal any of the treatment strategies. The two sections of the placebo group also had their trainers assigned on a random basis.

(9) The control group was treated in a traditional non-involved fashion.

#### Analysis of the Data

The hypotheses of the study were evaluated by applying the following three stages of analysis to each hypothesis:

(1) An ANOVA was first applied to the pretreatment scores to determine whether the experimental, placebo and control treatment groups were drawn at random from the same population. The purpose of ANOVA determines whether

the between-groups variance is significantly greater than the within-groups variance. If the ANOVA results indicate a nonsignificant F ratio, the analysis will continue to the second stage. But if a significant F Ratio at the .05 level of confidence results from the ANOVA treatment of pretest scores, a special t test for multiple comparisons called the Scheffe Method of Multiple Comparisons (Borg and Gall, 1979) will be applied. Scheffe's test would then identify the pairs of means that differ significantly at the pretreatment stage.

(2) Assuming that the results indicate a non significant F ratio for initial scores, an ANOVA would then be applied to the posttest scores for all three groups to determine if the null hypothesis is acceptable.

(3) If the second stage indicates a significant F ratio (at the .05 level of confidence), the Scheffe method will be applied to the posttest scores to determine which pairs of means are significantly different at a .10 level of confidence. The Scheffe' results, as recommended by Winer (1959), should be considered significant at the .10 level of confidence.

## CHAPTER IV

### RESULTS AND DISCUSSION

The purpose of this study was to determine the effects of a psychological based training program, the Six Step Technique, upon athletic performance. The effects of the treatments were measured and compared in order to test the efficacy of the two hypotheses of the study.

#### Results of Hypothesis One

The first hypothesis predicted there would be no differences in STAI State Scores between pretest and posttest scores for all three groups at the .10 level of confidence as indicated by the Scheffe Method of Multiple Comparisons. The three stages of analysis resulted in the following: (1) to test the hypothesis it was first necessary to determine whether the experimental, placebo and control groups were drawn at random from the same population. An analysis of variance was made of the performance of the three treatment groups on the Spielberger State Trait Anxiety Inventory. The basic data from this analysis is presented in Table 3 (see page 58). The F ratio of .896 that was obtained indicates that there were no significant differences in the STAI score variations among the

Table 3

Analysis of Variance of Three Treatment Groups on STAI  
Pretest Performance

Source	SS	d f	M S	F	Signifi- cance Level
Between Groups	149.96	2	74.98	.896	N.S
Among Groups	4433.47	53	83.65		
Total	4743.84	55			

Note: With 2 and 53 d f,  $F = 2.79$  at .05  
 $F = 4.18$  at .01

Table 4

Analysis of Variance of Three Treatment Groups on STAI  
Post-test Performance

Source	SS	d f	M S	F	Signifi- cance Level
Between Groups	602.8	2	301.4	3.857	.05
Among Groups	4141.04	53	78.13		
Total	4743.84	55			

Note: With 2 and 53 d f,  $F = 2.79$  at .05  
 $F = 4.18$  at .01

three treatment groups in the pretest sessions. Thus the conclusion is warranted that the three treatment groups were drawn at random from the same population. (2) Therefore with a nonsignificant F ratio the investigator could proceed to test the first hypothesis by conducting an analysis of variance (ANOVA) of the three treatment groups. The data presented in Table 4 (see page 58 ) reveals an F ratio of 3.857 with 2 and 53 degrees of freedom. This F ratio is significant at the .05 level of confidence. This means that in 95 chances out of 100 the obtained differences in posttest STAI scores among the three treatment groups were traceable to non-random factors.

Thus the conclusions can be safely made that the obtained differences are real and significant. (3) As a result of obtaining a significant F ratio on the posttest STAI scores, the investigator applied the third stage of analysis. The significance of the differences among the three groups mean scores was then studied by applying the Scheffe Method of Multiple Comparisons. The data obtained from this analysis are presented in Table 5 (see page 60 ). The results indicate that the difference between the experimental and placebo groups ( $F = 6.339$ ) groups negate the null hypothesis at the .10 level of confidence. The comparison of the placebo and control ( $F = .048$ ) groups supports the null hypothesis. Furthermore, the comparisons of the experimental group mean with those of the placebo and control groups ( $F = 7.682$ ) also rejects the hypothesis



Table 5

Comparison of Three Treatment Groups on STAI Posttest  
Performance by Means of the Scheffe' Methods for Multiple  
Comparisons

Multiple Comparisons

1. Experimental, Placebo	F = 5.295	.10
2. Experimental Control	F = 6.339	.10
3. Placebo, Control	F = .048	N.S.
4. Experimental, (Placebo and Control)	F = 7.682	.05

Table 6

Analysis of Variance of Three Treatment Groups on 25 Foul  
Shooting Test

Pretest Performance

Source	SS	d f	M S	F	Significance Level
Between Groups	60.51	2	30.26	3.005	.05
Among Groups	533.47	53	10.07		
Total	593.98	55			

Note: With 2 and 53 d f, F = 2.79 at .05  
F = 4.18 at .01

at the .05 level of confidence.

#### Discussion of the Results Obtained for Hypothesis One

The analysis of the STAI scores indicates that the Six Step Technique that was used with the experimental treatment group was effective in reducing state anxiety in high school basketball players.

These findings suggest that the training enabled the treated athletes to identify and control their anxiety when introduced to a stressful athletic situation. These findings are consistent with earlier findings of Tutko (1976), Suinn (1972), Nideffer and Deckner (1970) and Kukla (1976).

#### Results of Hypothesis Two

The second hypothesis predicted there would be no differences in non-game foul shooting test between pre-test and posttest scores for all three groups at the .10 level of confidence as indicated by the Scheffe Method of Multiple Comparisons. The three stages of analysis resulted in the following:

(1) To test the hypothesis it was first necessary to determine whether the experimental, placebo and control groups were drawn at random from the same population. An analysis of variance was made of the performance of the three treatment groups on the 25 Foul Shooting Test. The basic data from this analysis is presented in Table 6 (see page 60). The F ratio of 3.005 that was obtained indicates

that there were significant differences on the foul shooting test score variations among the three treatment groups in the pretest sessions at the .05 level of confidence. Thus the conclusion is not warranted that the three treatment groups were drawn at random from the same population.

(2) Therefore, with a significant F Ratio the investigator could not proceed to test the second hypothesis by conducting an analysis of variance (ANOVA) of the three treatment groups until a Scheffe Method of Multiple Comparisons was applied to identify the significantly different pairs of means. Table 7 (see page 63 ) reports that the results of the Scheffe analysis indicated the following: (A) The difference between the means of the experimental and placebo groups yielded an F ratio of 4.941, which is significant at the .10 level of confidence. (B) The obtained difference between the means of the experimental and control group yielded an F ratio of .067. This statistic is not significant and the conclusion is warranted that these means are not significantly different. (C) The obtained differences between the means of the placebo and control groups yielded an F ratio of 3.965. This statistic also was not significant and the conclusion is warranted that these means are not significantly different. (D) The obtained differences between the means of the placebo and experimental, control combination groups yielded an F ratio of 5.924 which is significant

Table 7

Comparison of Three Treatment Groups on 25 Foul Shooting  
 Test Pretest Performance by Means of the Scheffe' Methods  
 for Multiple Comparisons

<u>Multiple Comparisons</u>	<u>F</u>	<u>P</u>
1. Experimental, Placebo	F = 4.941	.10
2. Experimental, control	F = .067	NS
3. Placebo, control	F = 3.965	NS
4. Placebo, (experimental and control)	F = 5.924	.10

at the .10 level of confidence.

After identifying the significantly different pairs and trios of means, the analysis of the data on non-game foul shooting continued with an ANOVA for the purpose of studying the results of posttreatment scores on the foul shooting test. The data in Table 8 (see page 65) reveals an F ratio of 3.13 with 2 and 53 degrees of freedom. This F ratio is significant at the .05 level of confidence. This means that in 95 chances out of 100 the obtained differences in posttest non-game foul shooting scores among the three treatment groups were traceable to non random factors. Thus the conclusions can be safely made that the obtained differences are real and significant.

(3) As a result of obtaining a significant F ratio on the posttest foul shooting scores, the investigator applied the third stage of analysis. The significance of the differences among the three groups mean scores was then studied by applying Scheffe's (t-test) of Multiple Comparisons. The data obtained from this analysis are presented in Table 9 (see page 65). The results indicate the following: (A) The difference between the means of the experimental and placebo groups yielded an F ratio .20 which was not significant and the conclusion is warranted that these means are not significantly different. (B) The obtained differences between the means of the experimental and control groups yielded an F ratio of 5.46 which is significant at the .10 level of confidence.

Table 8

Analysis of Variance of Three Treatment Groups on 25 Foul Shooting Test Posttest Performance

Source	SS	d	MS	F	Signifi- cance
Between group	61.1	2	30.55	3.13	.05
Among group	517.4	53	9.76		
Total	578.5	55			

Note: With 2 and 53 d f,  $F = 2.79$  at .05  
 $F = 4.18$  at .01

Table 9

Comparison of the Three Treatment Group on 25 Foul Shooting Test. Posttest Performance by Means of the Scheffe' Methods for Multiple Comparison

Multiple Comparison	F	P
1. Experimental, placebo	$F = .20$	NS
2. Experimental, control	$F = 5.46$	.10
3. Placebo, Control	$F = 3.66$	NS
4. Placebo, (Experimental and Control)	$F = .76$	NS

(C) The differences between the means of the placebo and control groups yielded an F ratio of 3.66. This statistic is not significant and the conclusion is warranted that these means are not significantly different. (D) The obtained differences between the means of the placebo and experimental, control combination group yielded an F ratio of 76. This statistic is not significant and the conclusion is again warranted that these means are not significantly different.

Discussion of Results Obtained For  
Hypothesis Two

There were significant differences in pretest scores on the non-game foul shooting test. Such differences were obtained (1) between the experiment and placebo groups, and (2) the placebo group versus the experimental and control groups. The placebo group, as indicated in Table 10 (see page 67 ) performed significantly better than the other two groups.

Although these differences were obtained, it should be pointed out that the experimental group showed significant improvement in post foul shooting ability as compared to the placebo group and control group on pre-versus post-test basis. As Table 10 also indicates, the experimental group showed a +.15.36 percent improvement in foul shooting as compared to the placebo's group +4.20 percent improvement and the control group +4.68% on pre versus posttest comparison. Furthermore on a posttest basis the

Table 10

Comparison of the Three Treatment Groups Pre and Posttest  
Foul Shooting Test Results for Numbers and Percentages of  
Completion

	Pretest Mean Scores and %	Posttest Mean Scores and %	+/-
Experimental Group N = 18	13.88 55.52%	17.72 70.88	+15.36%
Placebo Group N = 19	16.21 64.84%	17.26 69.04	+ 4.20%
Control Group N = 19	14.15 56.60%	15.21 60.84	+ 4.24%

---

Experimental Group	Won - Lost 4 - 15 7 - 10	Varsity Junior Varsity	Total 11 - 25
Placebo Group	Won - Lost 13 - 11 11 - 18	Varsity Junior Varsity	Total 24 - 19
Control Group	Won - Lost 4 - 16 2 - 16	Varsity Junior Varsity	Total 6 - 32



experimental treatment group became equal to the placebo in experimental foul shooting. Therefore results of the pre versus post 25 foul shooting test indicates that the Six Step Technique, which was the method of treatment for the experimental group, was significantly effective in improving foul shooting ability, in a stressful non-game situation, beyond a .10 level of confidence.

The findings suggest that as a result of becoming aware and practicing particular psychological skills the athletes became more successful in their athletic performance.

Not surprisingly, then, is the fact that the experimental group also significantly improved their ability to lower and control their anxiety, as indicated in Table 5. According to the literature the control of arousal leads to better performance.

Other training techniques have reported similar success on an individual and group basis. (Nideffer and Decker 1970), Kukla 1976, Suinn 1972, Tutko 1976 and Decaria 1980).

#### Foul Shooting Performance During Regular Season Competition

Since positive results were achieved on the foul shooting test on a pre-versus post basis for the experimental treatment group, the investigator wanted to see if improvement in foul shooting would carry over to regular season play. An analysis of regular season foul shooting

performance was possible since the experiment was conducted during the basketball season. Contact with the three schools took place after completion of the first seven games and all treatments were completed with seven games remaining on the schedule. The results as reflected in Table 11 (see page 70) indicates: (1) the experimental group improved 11 percent from pre to post study conditions, (2) the placebo group deteriorated 10 percent and the control group surprisingly increased 9 percent over the same period.

Unfortunately, the data of actual game foul shooting did not lend themselves to similar statistical analysis as provided by the previous t-test analyses. This was due to the fact that the bulk of the game foul shooting results was produced by a small number of players. This fact is understandable since neither the investigator nor the players have control over providing an equal opportunity for all players to shoot the same number of fouls in regularly scheduled games. Therefore, the data obtained for game foul shooting is extremely skewed, that is, the data did not reflect a normal distribution. The findings, therefore, as presently developed, are mixed and equivocal. Both the experimental group and the control group significantly improved in game foul shooting. The explanation for this fact needs further study.

The placebo group's significantly reduced efficiency can be first explained by the anecdotal comment from their

Table 11

Results of Foul Shooting - Completion Percentages for the  
1 - 7 games versus the last 7 games

	1 - 7	Last 7	+/-
I Experimental Group	45%	56%	+11%
II Placebo	61%	51%	-10%
III Control	53%	62%	+ 9%

coach to the researcher. In a telephone conversation which occurred after the next to the last game, the coach asked the researcher what he did to his players. According to the coach, the players were enthusiastic after the second treatment session but later on as the season continued the players wanted to know when they would improve. It seems as though the placebo group players were waiting for 'it' to happen to them. Moreover, after not seeing any improvements their expectations turned to disappointment and then to negative foul shooting performances. This fact is supported by the placebo group also showing a slight improvement on the second administration of the 25 foul shooting test. This posttest occurred one week after the second placebo treatment and the players at that time, according to their coach, remained hopeful.

### Conclusions

On the basis of the findings, reported in this chapter the following conclusions can be reached: (1) The Six Step Technique is an effective means of reducing state anxiety for high school basketball players with regard to their foul shooting. (2) There was a direct and significant relationship in improvement of foul shooting skills as a result of the Six Step Technique. (3) The differences among the groups on the ability to lower STAI scores and improve foul shooting was the result of the Six Step Technique and not a placebo effect.

## CHAPTER V

### SUMMARY AND IMPLICATIONS

#### Summary

The purpose of this study was to develop a psychologically based training technique that would maximize athletic performance. A training technique was developed for this study that would reflect the present state of the art of psychologically training athletes. The technique, entitled the Six Step Technique, was then tested experimentally. Significant results in the predicted direction were obtained when the technique was applied to high school basketball players in the following two areas: First, the subjects who were trained in the technique were found to have significantly lower state anxiety when dealing with foul shooting as compared to the placebo and control groups. In addition, no significant differences were found when the state anxiety levels for the placebo and control groups were compared. As a result of the above findings, the placebo effect was ruled out as being responsible for the change. The results found in regard to lowering and controlling anxiety by training techniques was also upheld in the literature (Nideffer

and Deckner 1970, Tutko 1976, and Kukla 1976).

The second area demonstrated that the subjects who were exposed to the Six Step Technique significantly improved foul shooting as compared to the placebo and control subjects. In addition, no significant difference was found between the placebo and control groups in regard to post treatment foul shooting. Again the placebo effect was discounted due to the lack of improvement in the placebo group. The present findings also support the limited research in the area of improving athletic performance with psychological training techniques (Nideffer and Deckner, 1970, Suinn 1972 and Kukla, 1976, Kolonay, 1977, Weinberg, Seabourne and Jackson, 1981, Noel, 1980 and Meyers and Schlessler, 1980).

#### Implications for Future Research

In view of the fact that the present findings are positive, and a need exists for both coach and athlete to improve athletic performance, the present study should be used to further explore the art of maximizing athletic performance.

Future study should apply the Six Step Technique as follows: (1) Replication of the study should be conducted to expose the technique to women athletes, different sports, and different age groups, (2) replication should also include a further analysis of the effect of the technique upon actual athletic competition, (3) replication could also include a follow-up study to determine

the permanency of the training. An understanding of the life of the treatment and need for reinforcement should be studied in detail and (4) replication of the study should be conducted having the coaches trained in the technique: the coaches could then train athletes in all aspects of athletic performance using the principles of the technique as a coaching philosophy and methodology.

#### Suggestions for Coaches and Athletes

Based on the results of this study, as well as other supportive research in psychological training of the athlete, the following suggestions are for the coach and the athlete: (1) athletes need to be treated as individuals in regard to their readiness, arousal, attention and execution, (2) athletes can learn to understand and control critical psychological forces within themselves, (3) positive psychological techniques are already available that can be applied by the athlete and coach throughout the athletic experience, and (4) the future for psychological help for the athlete and coach is unlimited and is the responsibility of all who are involved in competitive sports.

It is hoped that the efforts and results of the study will become an encouragement to all those who pursue athletic excellence.

## Appendix A

## SELF EVALUATION QUESTIONNAIRE

Directions: A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number which indicates HOW YOU FEEL WHEN YOU ARE AT THE FOUL LINE DURING ACTUAL BASKETBALL COMPETITION.

There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe best your feelings while shooting foul shots in actual competition.

	Not at all	Some what	Moder- ately so	Very much so
1. I feel calm.....	1	2	3	4
2. I feel secure.....	1	2	3	4
3. I am tense.....	1	2	3	4
4. I am regretful.....	1	2	3	4
5. I feel at ease.....	1	2	3	4
6. I feel upset.....	1	2	3	4
7. I am presently worrying over possible misfortunes.....	1	2	3	4
8. I feel rested.....	1	2	3	4
9. I feel anxious.....	1	2	3	4
10. I feel comfortable.....	1	2	3	4
11. I feel self confident.....	1	2	3	4
12. I feel nervous.....	1	2	3	4
13. I am jittery.....	1	2	3	4
14. I feel "high strung".....	1	2	3	4
15. I am relaxed.....	1	2	3	4
16. I feel content.....	1	2	3	4
17. I am worried.....	1	2	3	4
18. I feel over-excited and rattled.....	1	2	3	4
19. I feel joyful.....	1	2	3	4
20. I feel pleasant.....	1	2	3	4



Appendix B

SIX STEP TECHNIQUE - FOR FOUL SHOOTING

Pre-game Procedure

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Game: \_\_\_\_\_

Team: \_\_\_\_\_

TAKE YOUR TIME AND PREPARE YOURSELF FOR SUPER FOUL SHOOTING!

ONLY YOU CAN DO IT!

RELAXATION RESPONSE

Get low for 2 - 5 minutes

- 1. Close your eyes
- 2. Relax your body
- 3. Take deep breaths
- 4. Do it anyway you want but get low physically and mentally

Example: Use muscle tension and relaxation, T.M., deep breathing, mental imagery

Bert Burke  
Sports Psychologist  
Chatham, New Jersey  
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FOUL SHOOTINGI PRE-TASK

(Circle) where you want to be for the game

Passive-----Active  
 0 1 2 3 4 5 6 7 8 9 10

Your activity level towards creating fouls!

Do you want to be the man in charge? YES or NO  
 Make your opponent a sucker!

LOOK FOR THE FOUL

WANT TO GO TO THE FOUL LINE!

FOUL SHOOTINGII Readiness

## A. Where are you now?

Circle one:

Physically	Ready	Not Ready
Mentally	Ready	Not Ready
Emotionally	Ready	Not Ready

If you are having physical and/or personal problems  
can you put them aside until after the game?

YES or NO

If NO talk to your coach or a teammate. Don't go  
into the game with an extra burden.

B. How did you practice this week? Rate yourself.  
Circle one.

Relaxation Response	Ready	Not Ready
Six Step Technique		
1. Pre-task	Ready	Not Ready
2. Readiness	Ready	Not Ready
3. Arousal awareness and Adjustment	Ready	Not Ready
4. Attention focus	Ready	Not Ready
5. Putting it on Automatic	Ready	Not Ready
6. Feedback	Ready	Not Ready
Mental Rehearsal	Ready	Not Ready

C. Today's Game

If you are playing at home remember all the ad-  
vantages of familiar surroundings:

Your Rims and Backboards - Your home fans - Your gym!

If you are playing away remember all the advantages:

You will have time to practice and know these baskets -  
Your successful foul shooting will upset the home  
fans -

Their booing and noise will be testimony to your  
good performance.

Your solid performance at the foul line can WIN  
this game

YOUR COACH WILL SUPPORT YOUR EFFORTS - JUST GIVE IT

YOUR BEST

FOUL SHOOTINGIII. Arousal Awareness and Adjustment

Exercises:

- |               |     |                 |
|---------------|-----|-----------------|
| A. Physically | 1st | Get too tight   |
|               | 2nd | Get too loose   |
|               | 3rd | Just right      |
| B. Mentally   | 1st | Get scared      |
|               | 2nd | Get indifferent |
|               | 3rd | Just right      |

Circle: Where you want your arousal for foul shooting?

Down 0 1 2 3 4 5 6 7 8 9 10 Up

LOWER LEVELS HELP YOUR ATTENTION FOCUSIV. Attention Focus/Control

External	For Foul Shooting	-	Narrow External
Broad-----Narrow	Ball		
	Hands and Arms		
	Rim		
Internal	Zoom in and out		

Exercises:

- 1st Go Broad Internal Focus your attention on how important the shot is and what it means when you miss!
- 2nd Go Broad External Focus your attention on everything outside of yourself - the fans, noise, lights, scoreboard, time
- 3rd Go Narrow - Internal Focus your attention on your heartbeat, your nervous stomach and your bad self image
- 4th Go Narrow - External Focus on your hands and arms, the ball and the rim, zoom in and out

FOUL SHOOTINGV. AutomaticExercises

Close your eyes, take deep breaths:

VISUALIZE NIAGARA FALLS

1,000's of BASKETBALLS floating down the river and one  
by one going over the edge AUTOMATICALLY!

Do you have the guts to let it happen? YES or NO

VI. Feedback

Close your eyes, take deep breaths:

VISUALIZE THE BALL SPINNING - SPINNINGWATCH IT ALL THE WAY!!

Will you focus your attention all the way to the end  
of the shot! YES or NO

FOUL SHOOTINGSUMMARY

Exercises: 3 times each

A. Run and get up - then down quickly

DO THE SIX STEP TECHNIQUE WITH PHYSICAL MOTIONS

B. Close your eyes: Run and get up - then down quickly

DO THE SIX STEP TECHNIQUE IN YOUR HEAD

YOU HAVE JUST FINISHED A TOTAL READINESS PROGRAM FOR

FOUL SHOOTING!

YOU WANT IT!

YOU ARE READY!

YOU ARE RELAXED!

YOU ARE FOCUSED!

YOU LET IT HAPPEN!

YOU WATCHED IT GO IN!

GOOD JOB!

NOW GO GET'EM!

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## Vita

## Personal

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Married: two children

## Education

Seton Hall University, South Orange, New Jersey  
B.A. Psychology, 1958

Yeshiva University, New York City, New York  
M.S. Psychology, 1963

Washington Square Institute for  
Psychoanalytical Psychotherapy, New York City, New York  
Trained in Psychotherapy and Psychoanalysis, 1966 - 1969.

Personal Analysis, 1964 - 1969  
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## Accreditation

New Jersey Licensed Psychologist  
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## Professional Experience

1968 - to present	Private Practice, Psychotherapy and Management Consultant
1960 - 1968	School Psychologist
1961 - 1962	Instructor of Psychology, Seton Hall University
1959 - 1960	Special Education Teacher, Educable and Emotionally Disturbed Children