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PERCEPTIONS OF PSYCHOLOGICAL MOMENTUM BY FEMALE COMPETITIVE SWIMMERS:

A PHENOMENOLOGICAL INVESTIGATION

A Thesis

Presented for the

Master of Science Degree

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Kirk Peterson

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ABSTRACT

The purpose of this investigation was to examine the perceptions of psychological momentum by female competitive swimmers. The study involved Four elite NCAA Division I swimmers, who were national qualifiers. Two were sprinters and two were distance swimmers. A qualitative research technique was used that involved a semi-structured phenomenological format which allowed for each participant to discuss their perceptions of a swim where nothing went wrong and everything seemed to click or just happen. The initial interview lasted approximately sixty minutes and a follow-up interview lasted approximately thirty minutes. Qualitative analysis revealed several emerging themes pertaining to psychological momentum that included: (a) the use of mental plans, and (b) a sensation of flying or unconscious effort.

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CHAPTER I

INTRODUCTION

Iso-Ahola and Mobily (1980) have defined psychological momentum (PM) as, "an added or gained psychological power which changes interpersonal perceptions and influences an individual's mental and physical performance" (p. 391). While many researchers and practitioners feel that athletic ability plays a larger role than PM in determining successive performance outcomes (e.g., victories), they also acknowledge that PM may have an impact on the outcome of athletic contests.

It is often thought that perceptions or feelings of an added psychological power can result in a tremendous uplift in competitive situations. Throughout sporting events, an announcer or an analyst may often remark that momentum seems to be with the team dominating a game. Other times, coaches may comment that one team seems to be bringing a great deal of momentum into a game. Researchers have attempted to investigate the phenomenon of PM and identify its characteristics. For example, Silva, Cornelius, and Finch (1992) characterized PM as the perceptions and feelings of the competitor involved in the contest. This characterization is similar to that of Iso-Ahola and Blanchard (1986) and of Iso-Ahola and Mobily (1980) who associated PM with feelings of self-confidence, control, motivation, and progression toward a goal. Silva et al. (1992) and Shaw, Dzewaltowski, and McElroy (1992) both agreed that the experience of positive momentum increases a person's perception of momentum.

Vallerand, Colavecchio, and Pelletier (1988) developed a PM model that views the phenomenon in terms of personal perceptions of progress toward goals. They suggested that

gaining control over a competitive contest leads to increased perceptions of PM. Miller and Weinberg (1991) provided support for this notion by examining volleyball scenarios in which teams that come from behind experience and demonstrate increases in self- confidence and more control over the match. Their results were similar to those of previous findings (Iso-Ahola & Blanchard, 1986, Iso-Ahola & Mobily, 1980) which indicated that winning or playing well lead to increased perceptions of confidence and higher expectations of future success.

Researchers have also examined the manifestations of increased self- confidence and increased control within a competitive event and found that an increase in the probability of success is a by-product of such perceptions. Iso-Ahola and Mobily (1980) found that PM leads to an increased probability of success for athletes of both sexes and all levels of competitive experience. Iso-Ahola and Blanchard (1986) contended that early success leads to PM for the competitor, and consequently increases their performance and likelihood of winning. Richardson, Adler, and Hankes (1988) found that winning any of the first eight games in the first and/or second set of a tennis match was a significant predictor of winning the match for both A and B level players. They also found that winning a game lead to an increase in the likelihood of winning subsequent games and that PM did not differ significantly between A and B level players or between males and females. Silva et al. (1988) also found that early success was a good predictor of future success and that there was no significant gender difference in PM.

Although there is empirical evidence suggesting that PM is a determining factor in competitive events, not all studies have produced results supporting the PM notion. For

example, Weinberg and Jackson (1989) found that males, overall, come from behind more often to win rather than experiencing a succession of successes. In addition, Vallerand et al. (1988) found that coming from behind at a critical moment during a competition was shown to affect perceptions of PM more than did other nonmomentum conditions. They also found that score configuration, the level of tennis experience, and PM perceptions influenced performance inferences.

Researchers have suggested that other factors must be considered when investigating PM. Houseworth et al. (1988) suggested that studies of PM must examine the relationship between time and contest factors, including timeouts, substitutions, and change in strategies and tactics and how they interact with PM. Iso-Ahola and Mobily (1980) indicated the need to examine how PM is gained and lost and how its influence changes within a single game. Weinberg and Jackson (1989) suggested that future research should investigate and focus more on gaining a knowledge of the underlying mechanisms of PM. Vallerand et al. (1988) suggested that research should provide a better understanding of the variables that may initiate and sustain PM and of effects of PM. Shaw et al. (1992) stated that future research needs to address methodological limitations of previous studies in order to more accurately assess the PM phenomenon.

Taken together, the available literature suggests that there is no one formula for the presence or non-presence of PM. The majority of researchers have used quantitative methods as a means of investigating this slippery construct. To date, it appears that no one has used a qualitative research approach to question participants about their own perceptions and feelings of PM. Therefore, the purpose of the present study was to use a phenomenological

qualitative approach to the perception of a group of athletes about PM. I simply asked the participants about their perceptions of how they felt, what did that feel like, and what advantages were associated with such a feeling.

Statement of the Problem

In the present study an attempt was made to determine the perceptions of athletes regarding a number of issues dealing with psychological momentum and its perceived effect on performance across a series of competitive swimming events and/or meets. Specific questions asked of the participants included:

1. How does success in a performance relate to success in subsequent races?
2. Is there a perception that an advantage is gained after a successful performance?
3. Does the perception of gained psychological advantage lead to future success?
4. Is the perception of an added advantage associated with feelings of enhanced self-confidence, self-control, motivation, and progression toward a goal?
5. Is psychological momentum perceived during a race?
6. Is psychological momentum a phenomenon that carries over from race to race or from meet to meet?
7. Does winning a race or a successful performance increase the perception of psychological momentum?
8. Does losing a race or a poor performance decrease the perception of psychological momentum?

Definition of Terms

The following terms are presented as they were used in this study:

Athlete- A NCAA Division I multiple event, varsity swimmer.

Competitive swimming event- A particular race within a sanctioned swimming contest that that is recognized by a swimming governing body.

Perceived Control- The feeling by an individual that she has direct influence on her performance.

Subsequent perceived performance- The athlete's perceived quality of performance in races or meets that follow prior races or meets.

Perceived gained added advantage- The perception of the individual that they are experiencing psychological momentum.

Perceived initial success- An initial performance in a competition that is perceived by the athlete as successful.

Motivation- Personality factors, social variables, and/or cognitions that come into play when a person undertakes a task at which he or she is evaluated, enters into competition with others, or attempts to attain some standard of excellence (Roberts, p. 5).

Perceived Performance- The athlete's perceived quality of the performance.

Performance variables- The athlete's perception of how successful their swim was, the finishing place in a race, and/or the final time in a race.

Perceived progression toward a goal- How the individual interprets the successive achievement of progress and/or outcome goals that they set for themselves.

Perceived psychological Momentum- An added or gained psychological power which alters

an individual's perception of their mental and physical abilities and performance.

Perceived self-confidence- An individual's perception that they can perform a task. Often accompanied by an increase in self- efficacy and self-esteem.

Assumptions

The following were assumptions of this study:

1. The participant is aware of what she was feeling and experiencing.
2. The participant could accurately describe what she was feeling and experiencing.
3. The participant could accurately recall the feelings and experiences that the researcher asked her to comment on.
4. The participant could articulate her feelings and experiences.
5. The participant was willing to share and express her feelings and relate her experiences to the researcher.
6. The participant responded with honesty.
7. I (the interviewer) understood and accurately reported the feelings and perceptions of the participants.

Limitations

The following represent limitations of this study:

1. Only a small number of participants were chosen to recall and articulate their feelings, experiences, and perceptions. Therefore, the results may not be generalizable to other swimmers. 2. I may have perceived issues discussed and\or described by participants

to be general knowledge, because of my in-depth competitive swimming experience. 3. This is my first attempt at qualitative research.

Delimitations

The following represent delimitations of this study:

1. The size of the sample was limited to four female swimmers who were varsity competitors at an NCAA Division I swim team. 2. The participants were asked to tell of their best performance. 3. An open-ended interview approach was used to collect data. The data was collected from elite competitive swimmers at an NCAA Division I swim team.

Significance of Study

The significance of this study is based primarily on the fact that the phenomenon of psychological momentum has not been examined in a qualitative fashion. The qualitative approach that was employed examined the phenomenon of psychological momentum and its perceived influence on swimming performances strictly from the viewpoint of four individual and competitors. Psychological momentum is a concept that is difficult to measure accurately because it is a matter of individual perception. Therefore, by obtaining the perceptions of competitive swimmers about PM and its effects, it was hoped that a better understanding of the psychological momentum phenomenon would result.

CHAPTER II

REVIEW OF LITERATURE

Houseworth, Burke, and Stelplugh (1988) stated that psychological momentum (PM) is a phenomena that enables many athletes and athletic teams to ride an emotional roller coaster to peak performance. There have been several approaches used by researchers that have focused on psychological momentum. One approach has been to investigate early success in sport competition in order to predict later performance. An additional approach has been to explore the psychological factors that are involved in winning the first game of a competition like a tennis match in order to predict the outcome of the match. However, neither of these approaches took into consideration personal factors, environmental factors, and personal psychological factors of participants. Psychological phenomena seems to be a temporal phenomena, however, the effects may carry over for a short or longer period of time. "Unknowns" about psychological momentum include the cause, how it functions, how it is created, and how its effect may be prolonged or reproduced.

In this chapter the influence of psychological momentum, the causal attributions and perceptions of psychological momentum, and the effects of psychological momentum on athletes and within team sports was discussed. Many of the topics covered deal strictly with predictive measures and possible outcomes in relation to psychological momentum. Researchers have examined the likelihood of victory, perceptions of momentum in both negative and positive conditions, and the effects of psychological momentum when coming from behind.

Influences of Psychological Momentum

The purpose of Iso-Ahola and Mobily (1980) in this study was to theoretically define a phenomenon of psychological momentum and empirically illustrate its influence. Psychological momentum was defined as an added or achieved psychological power which alters an individual's personal perceptions and positively influences their mental and physical performance. The authors hypothesized that, when two individuals are competing, the one they feel has gained psychological momentum was most likely to win. However, if neither competitor had gained psychological momentum the probability of victory was presumed to be equal for both. Data were gathered from a Midwestern racquetball tournament that consisted of 99 competitors. Of these participants, 25 were women, and 74 were men.

Players' scores were the measure of performance. For each match, tournament officials recorded the winner and loser as well as the actual scores. The data were then extracted from these results. The authors assessed the effects of PM on the probability of the outcome of the next game by using the following formula:

$$(\sum Wx\text{-}WEx)/\sum WEx$$

where, $\sum Wx$ is the number of observed wins in a game category X and $\sum WEx$ is the number of wins expected. PM was determined by a percentage that resulted when the data were plugged in to the above formula. The more the percentage deviates from zero, the more PM influences the probability of winning in the upcoming games. This formula was utilized to show the probability a player with PM (winner of the first game) had of winning the match as compared to the player without PM (loser of the first game). In addition, the formula was utilized to analyze the probability of winning when no player had PM (winner of the 1st game

vs. winner of the 2nd game). The results suggested that PM significantly increased the probability of success in face-to-face competition for both sexes at all three levels. The effect was quite pronounced for relatively inexperienced male competitors and less so for relatively experienced males and inexperienced females. Iso-Ahola and Mobily (1980) suggested that the sex differences may have been due to different socialization patterns of the sexes. It was suggested that men and women may view competition and its outcome differently.

In a subsequent study, Iso-Ahola and Blanchard (1986) attempted to determine whether a person who has perceived PM also has a higher perceived self-confidence, perceived personal ability, and perceived likelihood of winning than their opponent. In addition, the study also intended to provide validation of the results of Iso-Ahola and Mobily (1980). The variables examined were the outcome of the first game, consequent perceptions of the individual of the likelihood of winning or losing the second game, personal perception of ability in relation to the opponent, and confidence in their own ability and experience to succeed in the second game.

Seventy-three racquetball players from a Midwestern Parks and Recreation Association Racquetball Tournament participated in the study. Fifty-seven of the competitors were men and 16 were women. Men entered the tournament in either a A,B, or C level and women entered into an open class. Data were collected from 101 matches and included responses to a one-page questionnaire administered between the first two games and again between the second and third game, if needed; and information from official records. The hypothesis that the likelihood of winning the second game and the entire match would be greater for first-game winners' by utilizing Iso-Ahola and Mobily's (1980) formula.

The results suggested support for the hypothesis that success early in a performance gives PM to the competitor. In addition, there was evidence that the successful competitor improved their performance and consequently increased the likelihood of winning the entire competition. It was suggested that a loss of PM put competitors at a distinct disadvantage to "come back." Iso-Ahola and Blanchard (1986) also found that self-confidence and perceived likelihood of winning the next game were significantly higher for the winners than for the losers of the first game. In addition, the winners perceived themselves to be better players.

Self-confidence and a high self-perception may increase the chances of victory, but the purpose of Richardson, Adler, and Hankes (1988) in their study was to investigate if winning a specific game in a tennis match would better predict the eventual outcome and if PM was influenced by ability levels or by gender of the players involved. The variables examined were the success of winning any of the first eight games in the first and/or second set and the outcome of the match.

A total of 119 tennis players, including 92 males and 27 females, were examined. Data from 163 matches from three USTA-sanctioned tennis tournaments in a Texas area were utilized. In addition, 10 competitors from each skill level were randomly selected to complete an additional set of questions concerning psychological and physical aspects involved in their matches. Each participant was asked about their perceptions of the turning point in the match and a possible explanation for it, they were also asked about the types of physical and/or mental preparations they utilized before and during match play. The results indicated that winning any of the first eight games in the first and/or second set was a significant predictor

again there were no difference as a function of player gender.

Weinberg and Jackson (1989) investigated whether gender differences were an influential factor in a tennis players' ability to come from behind and consequently win the match. The study examined this issue because of the many changes in women's roles and attitudes in competitive sport that had presumably occurred in recent years. The variables examined were the outcome of the match after losing the first set (coming from behind). Reversing PM was operationally defined as losing the first set in the best two out of three sets and then coming back to win the match.

Data were compiled from over 67,000 United States Tennis Association matches between 1984 and 1986. The data were taken from professional matches, juniors matches, and seniors matches. The results revealed that males, overall, came from behind to win significantly more than did females. However, significant between-gender differences were only found in juniors singles and doubles. The results also suggested that males were slightly more likely to come from behind to win, than were females. The authors suggested that female tennis players were closing the gap in their ability to reverse PM and make a come back.

Causal Attributions and Perceptions of Psychological Momentum

In their study, Vallerand, Colavecchio, and Pelletier (1988) tested several hypotheses derived from the Antecedents-Consequences Psychological Momentum Model. They used a methodology that concentrated on the perspective of an observer. In order to determine the possible connection between sport event perceptions and related behaviors such as betting

and gambling. An additional purpose of this study was to examine whether score configuration or tennis experience (high vs low) of the observer influenced performance inferences. A total of 20 males and 24 females ranging in a age from 14 to 44 years were used as observers. Of these, 10 males and 10 females had a high degree of tennis experience and 10 males and 14 females had little or no tennis experience.

A questionnaire was administered that contained two hypothetical scenarios: One described a tennis player who came from behind to win four straight games to equal the score at 5-5 in the first set. The other scenario depicted a situation where neither player dominated or prevailed and the score was also 5-5. The participants were asked to rate 12 statements, nine of which served to measure PM perception. The additional statements dealt with perceptions about who would win the first set, the second set, and the match.

The results indicated that score configuration influenced PM perceptions. Coming from behind to tie the match at a critical moment was shown to affect observers' perceptions of PM. Score configuration, level of observer tennis experience, and PM perceptions were all found to influence performance inferences. Interestingly, the results revealed that both inexperienced and experienced tennis players' perceived PM. However, experienced participants who responded to PM situations were more likely to overemphasize the connection between PM perceptions and performance. In sum, the results from this study provided support for the Antecedents-Consequences Psychological Momentum Model.

To further investigate the possible perceptions of PM between different skill levels, Miller and Weinberg (1991), investigated differences in perceived PM across different skill levels. Specifically, the effects of perceived momentum on volleyball performance when a

team had come back from a 3-point deficit at different points in the match were examined.

For the first experiment, data were collected from 160 matches involving Division I volleyball players from 17 teams and 120 students in beginning volleyball classes. A questionnaire was administered that contained four different scenarios. The scenarios included tie games in both the first (low situation criticality) and fifth (high situation criticality) games of the match. Each scenario also had a momentum situation in which a team came from a 3-point deficit to tie, or a nonmomentum situation where there was never a 2-point lead. The participants, after reading the scenarios, were asked to rate the amount each team would feel momentum, feel confidence, feel control, and feel anxiety and discouragement on a 11-point Likert scale.

In the second experiment, archival data were collected from 328 men's and women's collegiate volleyball games in the 1987-88 season and the 1988-89 season. Only games that involved one team coming from a 3-point deficit to tie the game were used. In each match, the team that tied the score was defined as having positive momentum and the other team as having negative momentum. In each of these games, the criticality of the situation was assessed. A critical situation was defined as a tie score anywhere between point 10 to point 14.

Dependent measures included the percentages of the next 5 serves won by each team, the percentage of the next 5 points won by each team, and the percentage of games won by each 20 team. The results of experiment 1 revealed that momentum situations were perceived as significantly different than nonmomentum situations. The psychological advantage was perceived as being a characteristic of the momentum team. In addition, both skill level groups

agreed that the team coming from behind would show increased confidence, more momentum, and control of the game while the opponent would be more discouraged and more anxious.

The criticality of the situation was also important in the perceived impact of momentum. In critical situations, as compared to noncritical situations, momentum was reported to have its greatest psychological influence. In addition, the team with momentum was perceived as being less discouraged in both critical and noncritical situations.

The results of experiment 2 indicated no performance advantage for the momentum team over the nonmomentum team over the next five serves after the tie, regardless of the criticality of the situation. The results, however, indicated that in noncritical situations the momentum team had a significant advantage over the next 5 points; but following any tie in which a team had previously earned 3 consecutive points, each team had an equal chance of winning the game. As indicated, PM is a very illusive and complicated illusion and can not be easily evidenced.

In order to test the performance momentum advantage in a laboratory setting, Silva, Cornelius, and Finch (1992) used a novel motor task and predicted (a) that the participants in the positive condition would feel as if they had positive momentum significantly more than the participants in the negative condition, (b) that the participants in the negative condition would feel as if they had negative momentum, and (c) that the participants in the positive condition would perform significantly better in the final games of the set than would those who were losing in the set.

A total of 116 volunteers from a university physical education activity classes were

used in the study. There were 58 male and 58 female participants with a mean age of 19 years. Males were paired with males and females with another females. A tennis competition and tennis scoring system was used in a novel motor task in which participants were positioned facing each other, but unable to see the other's progress. The participants attempted to complete a maze within 15 seconds. The maze contained 15 circles and participants had to place an X in each of the circles from the beginning to the end. The X's had to be fully crossed, legible, and within the circle. Completion of each maze represented a game, and the participants needed six games to win the set. Each match consisted of two-out-of-three sets.

PM was controlled by manipulating the performance outcome between the two participants. The margin of victory or defeat was predetermined prior to the experiment. A pilot study was completed in order to determine the optimum point spreads needed to produce the desired momentum effects. Participants' actual performances on the task were recorded, and a questionnaire was distributed in order to assess the perceptions of the participants' of the contest and their performance. The participants were not aware of the true reason for the experiment. In fact, the experimenter told the participants that they would be participating in a study to determine whether learning was enhanced in a competitive environment.

A questionnaire was administered following the match to assess self-perceptions and performance perceptions in the contest. Participants were also asked if they thought if they had momentum, and whether it was positive or negative.

The results indicated that participants paid close attention to competition and perceptions about possible outcomes of performance. The results also indicated that point differences in each game resulted in positive and negative performance differences. In addition, when participants were in positive momentum conditions, they indicated a high response in feeling momentum. On the other hand, participants who were in negative momentum conditions indicated low momentum. The results revealed no significant predictive relationships between momentum conditions and self-reports of perceptions of positive and negative momentum or mean performance and error scores for the match or for each game. The results also revealed no significant differences between winning and losing participants in performance scores or error scores in the final games of the set. In addition, the outcome of set 1 did not significantly predict performance in early games of set 2. In sum, the results suggested that no significant performance effect was found for conditions of PM.

In a study similar to Silva et al. (1992), Shaw, Dzewaltowski, and McElroy (1992) attempted to determine whether patterns of success followed by success and failure followed by failure accounted for changes in perceptions of PM in a controlled laboratory setting. They also investigated the role of self-efficacy and casual attributions about PM.

Participants were 60 male undergraduate students, ranging from 18 to 32 years of age and were enrolled in physical education courses. The participants had no more than high school level experience in basketball. They were randomly assigned to either the repeated task success group or the repeated task failure group. Self-efficacy with respect to competitive free throw shooting and PM assessed through a questionnaire. The Causal Dimension Scale II was used to measure causal attributions of performance. Performance

was measured by free throw accuracy.

Each participant competed against a highly skilled confederate and success and failure was determined by having the confederate purposely win or lose. Immediately following the completion of each of three rounds of competition, the participants completed the Causal Dimension Scale II.

The results revealed that failure was attributed to unstable, internal, and controllable causes, and that failure did not lower self-efficacy when unstable attributions were made. The results also indicated that there was an increase in performance as a response to failure, but that for the success group, an increase in perceived self-efficacy and PM led to decreases in performance. These results suggest that for less experienced participants, success (and resultant increases in self-efficacy and perceived PM) may not necessarily lead to increased subsequent performance.

Effects of Psychological Momentum Among Athletes and Team Sports

Hoffman (1983) investigated the effect of PM on the performance of three tasks of physical strength and endurance. In addition, the effect of a Self-Induced Relaxation Procedure (S.I.R.P.) or measures of strength and endurance were examined. Hoffman (1983) found that a sample of American athletes who developed PM increased their endurance and strength and demonstrated a functional relationship between physiological cognitive components of performance. Thus, it appears that if PM is properly channeled, it can be an aid to athletes. The results of Hoffman's study also suggest that a positive attitude on the part of the athlete may not only prepare the athlete for competition, but also aids in reducing

excess tension.

Some feel that PM can significantly improve a team's chances of winning. Gayton, Very, and Hearns (1993) attempted to determine whether PM in a team sport affected outcome. Specifically, they examined whether scoring the first goal in an ice hockey game or outscoring the opponent in the first period of a Stanley Cup Final Play-off game affected game outcome. Two sets of archival data were used to answer the research questions. Data were generated during the 1988-89 season of the American Hockey League and from 1974 to 1987 during Stanley Cup Final Play-off games from 1974 to 1987. The results indicated that 66.5% of the 510 games examined were won by the team who scored first. This suggested that PM may have been gained by scoring first. In addition, 72.5% out of the 51 Stanley Cup games were won by the team that outscored their opponent in the first period. This suggested that winning the first period may have increased PM. The results of this study suggest that PM can be empirically demonstrated in team sporting events.

Summary

The existing literature does not provide a definitive explanation or a demonstration of the PM experience. Although researchers disagree over the existence of PM, increased perceptions of PM continue to be reported by athletes and athletic teams. Whether someone experiences or perceives an added or gained psychological power may be irrelevant from a definitional standpoint. That is, individuals may understand the phenomenon from the basis of experience, but may not be able to discuss PM from a definitional standpoint. Moreover, it is likely that individual differences play a role in the perceived effects of PM. Thus, it

appears that a phenomenological assessment of athletes' perceptions of PM and its effects is warranted.

CHAPTER III

METHODOLOGY

The purpose of the study was to examine athletes' perception of psychological momentum and to examine how its perceived influence might affect performance of elite female competitive swimmers. The following sections of this chapter consist of: (a) use of a qualitative research group to determine interview questions and schedule, (b) a brief description of the participants in this study, (c) procedures, and (d) a discussion of the method of analyzing the obtained information.

Qualitative Research Group

A qualitative research group facilitated the development of the interview questions and schedule. This group was extremely helpful in the implementation of proper methodology and procedures. The group also advised me during the pilot with respect to interpretation of the data and the search for themes. On numerous occasions, I presented various information to the group and received feedback regarding issues such as interview style and probes.

Participants

The participants in this study were four women from an NCAA Division I women's swimming team. All had placed in the top 16 of a NCAA Division I National Championship meet.

Procedures

Initially, I spoke with the coaching staff to request assistance in the selection of participants. Interested individuals were referred to me by the assistant swim coach. The purpose of the study was explained to each participant, as well as the requirements for participation in this study. The participants were informed that they were not required to participate in the study. However, if they chose to do so, strict confidentiality of the interview sessions and the test data would be maintained. Permission from the head coach of each swimming team was requested and a consent form was read and signed (Appendix A). The participants were given an informed consent statement to read and sign (Appendix B). The study utilized a open-ended interview schedule. A qualitative interview technique was utilized to better attain insight into the participants' experiences, as well as enabling each person to talk freely about their perceptions.

The interviews took place at a location designated by the participant. The participants were told that the initial interview session would take approximately 60 minutes and focused on their perceptions of a race where nothing went wrong and everything seemed to click or just happen. The second interview enabled me to verify with each participant my synthesis of the athletes' original responses and transcripts of the initial interview. The follow-up interview session took approximately 30 minutes. Each participant was informed that both sessions would be audio taped. The participants were informed that the follow-up interview session would to take place once the interview was transcribed.

Each of the participants chose a pseudonym for identification purposes. I identified the questions that participants were to address, but these questions were not used to strictly

guide the interview sessions (Appendix C). The probes allowed me to examine the perceptions pertaining to PM. These probes included: (1) Tell me in as much detail as possible, did the performance where everything seemed to go right and nothing could go wrong influence your self-confidence in subsequent races and/or meets?, (2) tell me in as much detail as possible, did the performance where everything seemed to go right and nothing could go wrong influence your self-control in subsequent races and/or meets?, (3) tell me in as much detail as possible, did the performance where everything seemed to go right and nothing could go wrong influence your motivation in subsequent races and/or meets?, and (4) tell me in as much detail as possible, did the performance where everything seemed to go right and nothing could go wrong influence your progression toward your goals in subsequent races and/or meets? This method allowed the examination of any common characteristics that might be involved or related to psychological momentum. It also allowed the swimmer to provide her own perceptions, feelings, and experiences that were associated with her best performance.

An initial pilot study was conducted with a former female swimmer. The pilot study allowed me to practice the interview procedure and the process of transcribing the information. In addition, the pilot study allowed me to validate the transcribed information and to examine the material for emerging characteristics of psychological momentum. The responses were categorized along several themes associated with psychological momentum (i.e., self-efficacy, motivation, self-confidence, progression toward a goal, and a perception or feeling of a gained or added advantage).

Analyses

The data were analyzed after the transcripts had been validated by the participants and they had been given opportunity to revise or amplify their responses. I examined the final transcribed information to identify categories or themes related to the PM phenomenon.

CHAPTER IV

PRESENTATION OF THE DATA

The purpose of this study was to examine the perceived effect of psychological momentum within female competitive swimming. This study adopted a phenomenological style implementing a semi-structured format. The participants chose a pseudonym by which they would be identified throughout the investigation. Two elite distance swimmers and two elite sprint swimmers from an NCAA Division I women's swim team participated.

In this chapter, a description of the participants and their interviews is reported. The results revealed two themes: (a) Relationship between mental plans and a specific swim where nothing could go wrong and, (b) peak performance across subsequent races within meets. Each theme is presented in a separate section. Within each theme, there were other aspects such as the sensation of flying, an unconscious effort prevailing prior to the race and throughout the race, and perceptions of inducing psychological momentum through mental training in practice sessions.

The Swimmers

In this section responses of the swimmers' to the question dealing with their early development in the sport are discussed. These athletes were originally from a variety of locations including California, Florida, Pennsylvania, and Washington State. The participants ranged in age from 20 to 27 years. The participants were all Caucasian Americans.

Jane

Jane was born in Washington State and started swimming because her mother initially wanted her brother to learn how to swim. Initially, she taught him to swim and then later she placed him on a local swimming team and she took him to swim team practice and where he started swimming competitively. As Jane's brother progressed in the sport, her mother began to coach. Jane mentioned that her mother felt the need for Jane to learn to swim because she was always around the pool when her brother was practicing and if she fell into the water, she would need to know how to swim. Therefore, her mother taught Jane how to swim, and from that point, Jane progressed in much the same way as her brother. Jane started swimming on the team at age four, and remained on the team until she entered college. Jane swam, at the very beginning, about forty-five minutes each practice. Later, Jane progressed to about an hour every day. Eventually, at approximately age 10, Jane began swimming twice a day (both mornings and afternoons) for about an hour and a half each practice. Jane commented that her mother initiated her interest in swimming as her coach, but, later her mother quit coaching. Jane explained that she had quite a few coaches before entering college.

Jane explained that it was her mother who was extremely influential and supportive of her swimming. Her mother drove her to practices and to meets, sat at practices when Jane was not able to drive, and coached on Monday's, Wednesday's, and Friday's, and never missed a meet. On the other hand, her father was not very supportive or influential in her swimming from the very beginning. Her father rarely appeared at meets, although sometimes he attended the larger meets.

Starter Jackson

Starter Jackson grew up in Florida, and learned to swim at a local university in Florida. At the age of three, she moved to another town within the state of Florida where she lived until she entered college. Starter Jackson began swimming lessons when she was eighteen months old. At the age of three or four, she was told by her family doctor that it would be good for her to continue swimming due to bad allergies. At the age of five, she joined the swim team. Starter Jackson commented that her mother had to pay her to go to practice because she did not like it. However, her mother gave her fifty cents a week if she would continue to attend. This continued until her mother told her that she would pay her for one more month of swimming, but the next month she could decide whether she wanted to swim or not. Starter Jackson did not receive any pressure to make a long-term commitment to swimming. There were not many choices as to which swim club Starter Jackson would swim for because there was only one swim club from which to chose.

Starter Jackson's parents divorced when she was about eight years old. She noted that since her father was real good about sending money, her mother always had enough money to pay the fees to swim and this also allowed Starter Jackson the opportunity to attend swimming meets. Her father, other than sending money, did not influence her swimming career in any way. Her brother, on the other hand, was the most influential figure in her development as a swimmer. She said a sense of competition was stimulated by him because he was always challenging her in practice to "keep up" with him. She also noted that he began swimming a year earlier than she, and that once she started they swam many of the same events. She conceded the fact that he was faster at meets, but during practice is when

she experienced the best competition with him. She mentioned that they would always compete with each other in practice. In addition to brother's influence, Starter Jackson also stated that almost her whole circle of friends were swimmers.

Starter Jackson stated that much of her inner drive stemmed from her parents' divorce. Starter Jackson spoke about the fact that she heard her parents fighting all the time and that it would keep her up at night. In addition, she would hear her brother cry or hear herself crying, and there was noise all the time. The swimming brought her a certain amount of peace when she got to the pool as one of her favorite activities was to go under water and just not hear anything. It was totally silent underwater, and to this day, she enjoys going underwater and listening to the silence.

Jenny

Jenny grew up in Pennsylvania and at age of eight would attend swimming meets to cheer on her best friend. Although she thought the sport was incredibly boring, her best friend talked her into signing up for the swim team at the age of nine. Jenny acknowledged that her brother had the biggest influence on her. She mentioned that the swimming program she competed in as a high school athlete was one that was not serious, and therefore she viewed her swimming as just a way of having fun.

Jenny spoke of her competitive relationship with her brother and that it was that relationship that sparked her interest in swimming. As a freshman, Jenny was not intense in her swimming, but as a sophomore her brother pushed her hard. She mentioned that he

would yell at her and really aggravate her. He would make comments such as, "You know you have talent, you have to start working hard ." Jenny said, "He's pretty much the reason that I'm here. I mean nobody expected, you know Division I swimming. I owe it all to him because he was the one that told me to start working hard and I did."

Her parents, especially her father, were extremely supportive and encouraged her in her swimming. Jenny talked of her father and of how he lives vicariously through her swimming. She said that her father was her biggest fan. Her father was the family member who was always trying to encourage her when she did not quite perform as well as she had hoped to. In addition, spiritual messages that he would send Jenny were always encouraging. Jenny spoke of her mother as a worrier and the pessimist of the family. However, if Jenny did not perform as well as she had hoped to, her mother would also support her, but was constantly worried about her. Her parents were always there motivating her when she was down and always telling me to give it her best. Jenny alluded to the fact that her parents were constantly encouraging her to strive for the next level of swimming and never settle for just being good. Jenny said, "There is a certain level when that is the highest level that you can get to, and they are always pushing me to the next level."

Rachel

Rachel grew up in California and she swam competitively for sixteen years. She initially got interested in swimming because a neighbor friend of hers was on a summer swimming team, and Rachel thought it would be fun to do that too because her friend seemed

to be having a good time. Rachel also wanted to do something with her summers rather than just sitting around. Rachel's parents encouraged her to go ahead and try, although Rachel was responsible for getting herself to the pool for practices. Her family lived near the pool so she was able to ride her bike to practices. Rachel thought that this was a really good thing because it meant that she had to take the responsibility for getting herself there.

After numerous years with a particular swimming organization, Rachel joined another team further away. However, she still had to take responsibility for getting to practice. This meant that she would have to ride her bike to the bus-stop, leave her bike there, and ride the bus the rest of the way.

During the time, Rachel's parents were going through a divorce, she thought that by focusing on swimming she would not have to worry about her parents' problems. The divorce was finalized just before her biggest meet, the Olympic trials. The numerous situations that arose from the divorce had Rachel constantly pondering things she might do to help get her parents back together. The subject of where to live was a battle that Rachel was not too excited to face. Since her father was a high school coach, he was offered a position in northern California, and her brothers decided to move there with him. On the other hand, her mother was soon to be married and she and her new husband decided to move to southern California. Rachel felt as if she was stuck. Should she move with her father and not see her mother, or should she move with her mother and not see her brothers or her father? Because swimming was going so well and she was very serious in the sport, the final decision to move with her mother was based on the fact that southern California had many more competitive swimming opportunities.

Rachel found a competitive swimming team and became immediately interested because of the coaches' positive approach and support for Rachel. Her relationship with this coach was one that needed to be professional and successful because the Olympic trials were only eight months away. Rachel implied that she had a great deal of faith in this coach because of his ability to "size her up" as a swimmer and design workouts that would be necessary to compete in the Olympic Trials. She later mentioned that it was a blessing that she changed teams because this coach had prepared her like no other coach had before.

Rachel mentioned that swimming helped her with the stress of her parents' divorce and that she did not let it affect her swimming or her academics. In addition, she made a comment illustrating her faith. She said, "I don't know why, maybe because I thought that this was my thing and I wasn't going to let anything get in the way. This was my talent that was given to me by God."

Although each individual began swimming based on numerous circumstances, each had major influences that were extremely encouraging of their swimming. In addition, they all were introduced to swimming at a very early age. The one emotion that seemed to be reflected in her non-verbal expressions (e.g., smiles and comments on the nervous feeling that were once associated with pre-swim anxiety) was that of happiness while swimming. These individuals appreciated their opportunity to swim at an elite level constantly expressed appreciation for their family members and coaches who allowed them to be so successful.

Relationship of Psychological Momentum and Subsequent Races and/or Meets

This section reflects information that pertains to the perceived transcendence of PM across subsequent swimming races and/or swimming meets. Each swimmer was able to speak about their experiences and their perceptions remarkably well. Although there are dissimilarities between swimmers in that they all did not subscribe to the same practice or routines, there were many instances where each participant spoke about their glorious moment in the same respect as did the others. They all referred to instances where nothing seemed to go wrong and that everything just seemed to work or happen. In these examples, each participant expressed their own definitions of what was necessary for a successful swim. In addition, definitions surfaced as to what they perceived as psychological momentum. Jane seemed to feel that PM was associated with self-induced goal setting and race strategy.

> The desire to achieve and to do what you want to do, and not necessarily what other people want you to do but just be yourself. The way in which I reach such a frame of mind is through goal setting. I set goals for myself and not for other people. If your parents want you to do something and you don't necessarily want to do that, then your goals should not be what your parents want you to do but what you want to do. You are the one that is in there swimming and you have to do it for yourself. Your coach can not get in there and swim for you. I guess if you give up then you are the one that has given up. If you are the one that keeps going, then you are still the one that is doing it. So, therefore, no matter how you feel, you still have to get in the water and swim the next race. I felt that after my 500 yard freestyle, and because I did so well, I was confident that my 100 yard backstroke would be good. I really concentrated on how I needed to stay close with the girl seeded first, because I knew that if I could, and because I am a better back half swimmer, I would beat her.

Another swimmers' concept of psychological momentum indicated the feeling that PM was established within the first lap of an event. Starter Jackson perceived psychological momentum as a condition she experienced while she swam. The perception of feeling great

in the water allowed her to perceive psychological momentum within a particular race. Although, Starter Jackson did not perceive that PM can cross over meets or even across races, she did lend support to the notion that PM can transcend across a race. As she stated earlier in the transcript, she feels she has complete control over how she swims, but not over how she feels. Therefore, she does not allow herself to rely on feelings to get her through a race.

> I perceived psychological momentum in the first lap and that was the big thing for me, but after the first 500 yards, when I still felt the same, my confidence definitely grew and I definitely knew that I was swimming well and going to swim well more, and more, and more, as I was swimming and I still felt well I don't think you can base anything on a race. I mean, my motivation kind of bolstered my attitude into wanting to work hard. But just because of that race doesn't mean anything really to me. Once it is over, it is over. I mean it is like your past now, it doesn't matter now no matter what.

Because of these feelings of everything working or just happening, these athletes put an extreme amount of confidence to work for them. In all instances, the ability to set a goal and achieve that goal was extremely motivating and encouraging for these athletes. This seemed to catapult them into a feeling that nothing could bring them down during the meet. They seemed to capture all opportunities to empower themselves from the results of one race. Each participant seemed to emphasize this point in their statements.

> A culmination of a whole year of training and everything that goes into one swim and since you have trained so hard everyday, I think that I can reach the goals that I had set. Now I think I could set almost any reasonable goal and achieve it if I worked hard enough. (Starter Jackson)

> After I broke that record, my confidence was high, so I thought that I could go pretty fast on my 100 yard backstroke, which was a couple of events later. It was like, I had done well on the first one, so I need to do well on the second one. Because I was able to accomplish my goals, I know I can swim fast, and

that I need to keep going and keep setting my goals higher and higher. I know I can do this if I practice hard and listen to my coach. (Jane)

It was just so weird because I hadn't ever done the 100 yard butterfly where I didn't have to work and that was... it just didn't even feel like me because it was just clicking. I got my goal times and because it was a slow meet everybody looked at me like I was some kind of god. It showed me that I had it within myself I must have some kind of talent and that really showed me that I do. Oh my gosh, my confidence was so high. I thought nothing could stop me. In my last race I knew we were going to State, and I knew that I could totally loaf this race. But I was like this is such an awesome day and I'm not going to... I have to take advantage of this and I felt good. (Jenny)

The first day I had the 100 yard freestyle, and I got third, which meant that I was going to be on the freestyle relay team in the Olympics. Because I swam well in that event the pressure was off. I didn't have to worry anymore about making the Olympic team. My coach came up to me before the race, and he believed that I would make it in this event, and he said, "Okay, it would be great if this happens, but it is no big deal if it doesn't. Let's just go out there and see what you can do. The feeling of the water going over me and feeling like you could fly. You don't feel really much soreness anywhere, and you could swim your stroke without thinking and it just goes perfectly. It is like everything is on automatic pilot. I just throw everything out of the window and just do the best I can. I put my complete effort and all my energy into getting from the blocks to that end and to this end and I don't worry about how to do it, just go. (Rachel)

The pressure to swim well was alleviated once each individual was successful and had swam to their mental plan and to their expectation. As each indicated, pursuing events were anticipated due to their extraordinary performance. The idea that they were not going to let the success and the positive feeling they experienced with the first race go to waste is an illustration that the pressure was lifted and they were able to concentrate on the technique or the relevant information to succeed again. Undo pressure was never experienced because each was mentally able to prepare their body.

Mental Plans and Psychological Momentum

This section reflects information pertaining to the relationship between mental plans and a specific swim where nothing could go wrong and everything seemed to click or just happen. Rachel spoke of a time at the Olympic trials where she had to swim a couple of events over the course of a six day meet. Immediately Rachel had a feeling that she would perform exceptionally well. Other than her coach emphasizing that she would make it, Rachel also talked about how good she felt in the water.

> He was almost sure that I was going to make the team so he was gearing everything around that. Because he was doing that, I thought he was planning for this, I believed that I could do it, and that this was going to happen. I felt so good in the water, felt really fast, felt like I didn't need to warm-up much. This is the way I always know that I'm going to swim fast

The power that this instilled in Rachel was monumental, but so was the feeling of how good she felt in the water. She mentioned how excited she was to swim and that she could not wait to race. The initial feeling of warming up and her stroke just being effortless led to her sensation of how quick and strong her sprints were during the warm-up session. She noticed that, to her, the sprints were faster than ever before. These occurrences led Rachel to what I would call the "third person" perspective.

> The water, when you shave the hair off, which most swimmers do before big meets, I shaved every hair, doesn't feel like water. The feeling of the water going over me and you feel like, if we knew how or could fly, it feels like your flying but it is water going past you instead of air. It feels like everything is going past you so fast and you don't have to put very much effort into it to get to the wall and you are not out of breath and you feel efficient in the water, you feel kind of like, when I went into warm-ups, I usually pretty aware of who is watching me and I imagine what I look like from someone else's perspective.

This third person perspective stems from her childhood because she describes herself basically as a people pleaser, and that she constantly questioned what people thought of her. Rachel explained, as a child, how she would see herself walking around and see peoples' points of view. She would see people looking at her at the playground, at class, and at home. She talked about this being second nature to see herself in everything she did. She would imagine walking behind herself and see what she would look like. Because she was taller than the average girl, naturally she became self-conscious, and her practice of seeing herself in the third person began.

This third person perspective is an extremely encouraging and supportive practice for Rachel. She explained that she thought it helped her because warm-ups and practices made her feel more like a performer, kind of like being on stage. At the Olympic Trials she felt as if she was perceived as this young and inexperienced little girl who was extremely talented and that people were watching in anticipation of what she was going to do. Rachel spoke that swimming great was a given, but what was anticipated was how great she would swim. In addition, the vividness of her preparation allows Rachel to see herself at all times while she is warming up, and also imagines people saying, "Look at her, you better watch out for her." In culmination to the sensations and feelings she was having, Rachel just knew that she was primed to have a good race.

Rachel understood her role as a sixteen year old at a major meet such as the Olympic trials. She also knew that the pressure to perform was not as great on her as maybe it was on others. This is so because Rachel viewed herself as relatively unknown in the swimming world. Rachel, however, was cognizant that she had a legitimate chance to make the team.

Even though the chance of making the team was real, Rachel viewed herself in more of an underdog role. The portion of her perceptions that indicated a mental plan dealt with her knowledge of how her body would feel in the water when she would perform maximally and how she saw herself in warm-ups.

> Some meets I'll warm-up a thousand yards or two thousand yards and still feel tight or have soreness and it is usually in my triceps. If I can't get that out, I'm like, you know, it doesn't mean that I'm not going to swim fast but I don't feel really great.

When she was asked about describing the feeling of looseness and about what it meant to feel great, she was remarkably articulate. Rachel was able to describe, in great detail, the feeling of being tight and the feeling of looseness. To her, this was a direct indication of what caliber her performance would be. Rachel, therefore, indicated that if these feelings of looseness were present during warm-ups, then the probability of having a great race was legitimate. Rachel had a preconceived notion, or mental plan, as to what feelings would initiate this sensation.

Rachel knew what to expect from her swim, knew when in her race the pain and muscle fatigue would set in, and also planned how to overcome these obstacles in order to finish strong. This understanding is crucial to becoming a successful swimmer.

> There are certain things that every swimmer knows about themselves that they have to work especially on, because part of it is being human, and your body only knows or can only go for so long. In a 100 meter butterfly, even though it is only a minute or less long for the elite swimmers and a little bit longer for other swimmers, you're actually completely drained by the end of the race. Sometimes the feeling of being totally dead happens a little bit sooner than other times. So at the end of my 100 meter butterfly, even when I felt really good or great at meets, I knew there was going to be a point where I'm going to have to really mentally go through that pain. It doesn't mean that because you are having a great race that it is not painful,

it is always painful.

Successful swimmers such as Rachel know exactly what will get them through that part of the race to finish strong. By understanding what is needed to be done, Rachel had practiced this scenario and this instance a priori. Although Rachel had swum that particular race numerous times, she also was cognizant of what needed to happen to bring it home.

> I just concentrate on, like when I kick, because it just happens automatically I don't have to think, I'm going to apply this much pressure on the water, but at the end, you have to think about what you are doing with your legs because it won't happen automatically.

Rachel was able to explain exactly what her mental rehearsal was for the 100 meter butterfly. Rachel discussed the details of her swim from getting up on the blocks to diving in the water and swimming the race without the pain. She mentioned that this is how she imagined the race would be. I believe it was extremely important for her to visualize the smallest of details. She said that she could actually feel these movements without even swimming or being on the blocks. She also made the comment that she imagined the swim being effortless, an unconscious swim.

> It is like you don't have to tell your body to do anything, everything just happens all on its own. So if you were a plane and you didn't have to fly yourself, and somebody else was flying you and air is going all around you, you don't even have to decide to turn, you just turn. Because I felt that I didn't have to put very much effort into it, I felt like it was just going to happen to me, that this thing was going to happen, I wasn't going to have to make it happen. My swimming fast is just going to happen, it was destiny or something.

Rachel's ability to express her perceptions and experiences seems truly remarkable. I believe her openness allows her to understand what made her a great swimmer, as well as

an accessible communicator. The willingness that she demonstrated by revealing her experiences, which many times she thought were childish, illustrated how vividly imagined and how imaginative she is.

Jane spoke of a time in high school when she swam the 500 yard freestyle at the state championship. She indicated that she swam her best time ever and broke meet and state records. The finals occurred on the second day and this is when her superb race took place. The night before, however, was an extremely successful race as indicated by her record performance. Although the record was broken, Jane was not satisfied with her performance because she felt she made many mistakes. When asked to explain her mistakes, she immediately referred to her mental plan for the race. She mentioned that this practice was initiated when she put her cap on and started stretching out before her race. She spoke of the many mistakes that were made the night before. For example, during her race she was trying to keep an eye on her coach so he could tell her how she was doing and was not exploding from the wall after each turn, and not quite being streamline in the water after turns.

Related to the race where many mistakes were occurring she was able to express how she took her race out too slow, the fact that her turns could be a little bit quicker and stronger, and that her streamline was not solid enough. She was conscientious of her mistakes and was even motivated to correct her mistakes the next night. Although her coach identified out the mistakes to Jane, she had the self-realization of what was wrong with her race.

> By feel, and by kind of watching other people in your heat, you can tell how you are swimming. When you are upside down you can see people and so you can see how hard or how far you are going in relation to the other swimmers

as well as to the backstroke flags.

During the race where everything seemed to just click or work great, she spoke of needed to happen in order to swim at her maximum. Again, she was extremely precise concerning what aspects of her swim were in need of attention. She was especially aware of what the other swimmers were doing in the race.

> Well, there are other people swimming with you in your heat, and most of the time my turns are as good or better than the other girls, and so if I wasn't doing as good in turns as they were then I knew that I should be doing better.

In order to swim according to her mental plan and to her satisfaction, Jane spoke of the need to be relaxed and comfortable in the water. Jane mentioned that she prefaced each race with the knowledge and understanding that she can not control how she feels, but can control how she swims. This enables Jane to realize that she may not feel 100% in each swim, but that she can push through a race and still be successful.

> To go a little bit faster and to be relaxed, I want to watch the coach to see howmuch harder I should pick it up and to build into the race. I can do this by stretching my stroke out and putting a little more force into it through the pull. In order to avoid being sloppy, I have to not roll my shoulders as much. I guess when you swim your race wrong and you go out really hard you kind of die a lot faster Where, if you swim your race right then you are still going to have some energy left at the end.

Jane was very cognizant of her coach while she raced and seemed to gather momentum and encouragement as he expressed his emotions during her swim. She mentioned that her coach's behavior motivated her to continue to push hard and keep going. On the night where she experienced a race where everything seemed to click or just happen, her coach seemed more excited. She noticed, while she was swimming, that he was waving his

arms and his hands more. Jane knew that her mental plan was working through the hand signals that she received from her coach, and what she anticipated from her stroke in regard to her placement with the backstroke flags. Jane expressed her thought that her final time was relevant to what her mental plan or her judgement as to how fast she could go.

> Well, I touched the wall and I turned around to see what my time was and everybody was screaming and yelling... it was kind of neat. My coach was really excited because he didn't think I could go that fast.

Jenny spoke of the admiration she received from her coach, her friends, and her competitors as an incredible swimmer for her district. Jenny talked about her experience at her district swimming meet from high school as a time where everything clicked and just seemed to happen. She was on top of the swimming world when she broke a record in her 200 yard freestyle. She made reference to this year as her break-through year in swimming. Although she realistically had no real competition at this meet, she still was incredibly nervous. However, the nerves did not stem from having to break any records, or from beating any particular person, she was nervous because she knew that she had selected her university and she wanted to solidify her position on her prospective team. She wanted to swim at a level that was associated with Division I recruits. Her focus was not on the potential of swimming poorly, but rather on the knowledge that she was good enough to attend a major swimming university, and wanted to show everybody how good she was. Before her race, Jenny made several comments reminding herself that she needed to calm down. Jenny prepares herself mentally by saying to herself, "Through God I can do all things, he gives me strength." Much like putting on the helmet, or stepping into the batters' box, this

clears her mind and prepares herself to race.

> I felt a lot of pressure, but I remember sitting on the benches just like calm yourself down, you've got to be calm about this. I went out, and I knew I was going to win because the next best time was so far behind my time. I knew I was going to win but I was standing up behind the blocks and I was really nervous.

After her race, when she saw her time, Jenny began to cry. She was so happy, but remembered pleading with herself as to where that swim came from. Whether she was crying because she went so fast or because she won, or because she finally realized how good she could be, Jenny almost had a sense of closure to those questions she had of her ability. Her brother and her coach always told her how good she was, now she had proven it to herself.

> Right before I went up to the blocks, coach was kidding around and he's like, I want to see a **1:55.1**. I don't know, he was just kidding though and he was just like, we both were shocked.

The power of this suggestive comment can never be quantified, however, her final time was **1:55.1**. This is especially profound in lier of the fact that she was seeded as a 2:00.0, thus creating a 4.9 second improvement. Initially, she did not think that she could do that what her coach said he wanted her to do. I do not really understand where this swim came from, but quite possibly after hearing her coach say he wanted her to go that fast, maybe she realized that it could be done. Jenny, however, could not explain why she did that time when as she walked up to the blocks she did not think that she could go that fast. Jenny knew what it would take to have a successful race. Although she never could articulate her mental plan, she did talk about what feelings she would experience. She mentioned that if she dove into the water and felt high in the water, then it would be a great race. To her, high meant

a certain position in the water. For swimmers it is necessary for their body to be high in the water in order to reduce the amount of drag. In the butterfly, being high in the water allows the individual to expend less effort while breathing.

> If I feel that I am really high in the water it gives an indication that I am swimming great and then it will definitely increase my confidence and in the end, if I die, it'll just give me an extra push like, whoa, that first 75 yards was right on.

Starter Jackson spoke of a time when she swam the 1650 yard freestyle and everything seemed to click or just happen, and nothing could go wrong. Much like Rachel, Starter Jackson began her mental preparation in warm-ups. In addition, and very similar to Jane, Starter Jackson believes that she can not control how she feels, but can control how she swims. She explained that a lot of her attitude for her races forms in warm-up. For example, in this particular race, she was very relaxed, and she did not seem anxious for the race. She indicated that with the onset of the attitude, which was based on the fact that her swimming was effortless, there was no tension in her muscles. Starter Jackson expressed that she" was just laid back and ready to go whenever it was time."

Her mental routine evolved through practices, and during sets. In order for Starter Jackson to feel prepared, she needed to be both physically and mentally aware of what she needs to do in the race. This, for her, is established through practice.

> Well, for me, when I go through practice, I train distance so I know the mental aspects of my races, I know the process that I must go through for each race. I know the mental stuff I go through to get through a 1000 or something. I always like count down. There are 40 laps, so the first lap when I get to the wall, I turn and I say 39... 38, etc. I go by 10's and the first ten laps I go out strong but I stay relaxed. The second ten, I just try to keep up my momentum and try not to think about technique so my stroke doesn't fall apart and I concentrate on my turns, and the last ten, I just

go for it.

Starter Jackson is very anxious any time she has to swim a race where she has not practiced mentally what the race entails. Therefore, she felt her worst races involved a high amount of ambiguity, a high amount of being mentally unprepared, which makes her feel physically unprepared, and a high amount of stress through focusing on what could possibly go wrong or the fact that she has not practiced this race at workouts or mentally. On the other hand, with the mental plan in place, there is a sense of security.

In addition to the mental plan discussed, Starter Jackson explained that when you are racing and because the race is such a long race, you don't want to take off and start sprinting. In fact, you need to build into your swim. She spoke of this ability in a commonsensical manner, as if this is not anything she needs to focus on, it has become automatic.

> You don't want to just bust out there and go way ahead of them because then, of course, if their back half, you know, if they have a good back half, they will come back and kill you at the end.

The idea that Starter Jackson practices mentally challenging herself to be aware of how she needs to swim this event in an actual race is revealing. Sport Psychologist advocate the importance of making practice sessions more competition-like, and Starter Jackson appears to be an athlete who makes this tendency an everyday routine. Through mental training, this individual is able to compete numerous times in her mind without swimming a lap. As previously mentioned, this is what her mental plan entails, and this is what enables Starter Jackson to remain comfortable.

> Well, on the way to the pool, my coach, and my teammate and I were just laughing and having a good time and not even thinking about the fact we were going to the pool Once we got there, there wasn't anybody there because we were swimming between prelims and finals and just... I was relaxed because I like swimming in the afternoon. I am real comfortable because that is when our practice time is and so, I am always comfortable swimming at that time and my body felt just real, like more flexible than usual and just warm.

Swimming in the afternoon at the competition resembles practice schedules and the peace of mind results because this is like a normal everyday practice. The necessity for swim coaches to have practices early in the morning and in the afternoon may be an important notion. At swimming meets, competitors must swim early in the morning (prelims) and then again in the afternoon or early evening (finals). In order to acclimate the athlete to compete well at both sessions during championship meets, they must experience the act of swimming maximally twice daily, early mornings and late afternoons.

The feeling of comfort that Starter Jackson expressed was initiated from the normal routine experienced daily. Knowing that competition is so intense, Starter Jackson had re-thought her pre-swim routine. She referred to her earlier practice of deep concentration and uninterrupted thought, and that this practice did not work for her. On the other hand, when she was just having fun, laughing and joking, she experienced her best race of her career. The knowledge of being able to swim in the afternoon is an emotional boost for Starter Jackson.

> Well, for me personally, it just kind of takes away some of the pressure because for one thing, there is nobody there, and for another thing it is more routine. It is just like going to practice in the afternoon, with the sun and just seeing light out like going to practice. Another thing is that it does not seem like you are going to finals either Because it felt just like practice, I felt that I had a lot of control over how well I did.

This mental image she has of her swimming and the time of day in which she swims is not only emotionally positive, but also an extreme confidence booster. Starter Jackson indicated a method or plan of swimming, but much like and much different than the other athletes interviewed, she has her own method of preparing. Although each person could not describe a recipe-like method, they all found comfort in their methodology.

Mental practice did not seem to be limited to strategy alone. In fact, Starter Jackson was quite cognizant of how her practice stroke compared to her racing stroke. In addition, she was able to accept that, in practice, her stroke may feel sluggish, yet she can still perform well in competition.

> Well, when you're in practice you have a certain stroke technique that I guess that you always use when you are relaxed and it's just your stroke, it's where you feel most comfortable at and just kind of fluid. The stroke you have in practice is always going to be a little bit different than the one in the meet because you don't practice it at race pace. When I am relaxed I am able to just push all the way through using good technique, and my legs are real relaxed. Diving in, my first 25 yards felt great I felt like I was going a little too fast, but I felt comfortable and so I didn't adjust it, I just stayed there.

In addition to being real comfortable with her position on the team and her performance in the water, Starter Jackson practiced everyday with the understanding that she was swimming for herself. Much of what she rehearsed was training her mind to accept that swimming was her choice. The fact that she accomplished goals and the fact that she was able to represent herself as well as her university in championship events, were results of her decision to own her achievements and her disappointments.

> I just decided that I was going to swim for me, just whatever I do is fine. Getting to NCAA's was like icing on the cake for me because it was the first time that I've ever gone. And so, it's just the fact that I had a lot of confidence in my training,

> confidence in my ability to swim well because my attitude was good. I was real relaxed thinking about my technique and I wasn't really thinking too much about the race. I was thinking more about...not even staying relaxed, because I was already relaxed. I was thinking about going for it, just doing my best because this was my last race of the whole season. To help me not get nervous, I would say to myself, 'here I am at this meet and got the time to be here, I earned myself a lane, I earned myself a block, I earned myself two lane ropes to swim between and all these other people earned that for themselves also. But, that was for them, I know what I earned for myself and how, since I earned that, I need to do the best that I can with it and I just felt like I was at practice in my own lane swimming next to the person I always practice with... I just felt that I had a whole lot of control over how I swam rather than how I feel.

Starter Jackson was able to explain exactly what would happen in her race. It is interesting that each athlete was able to explain how they would feel in a portion of their race. It is even more amazing that these individuals come to accept this pain as glorious and a sign of perseverance. To accept a pain that does not allow you to walk, or such exhaustion that you are not able to lift your own body from the pool, suggests that these athletes all had a goal, and pain were indications that their goals were achieved.

> It felt real easy at first, but I could feel it, I could feel every stroke. It felt super easy and I barely had to try. I felt myself going through the water and I knew I was going fast. I started to get a little tired, but I said to myself to think about how many miles that I swim each week and that this race is nothing compared to what I have done. I said that I was not even going to give up now. I began getting very tired, but I still could feel myself keeping up the pace and I wasn't dying, I wasn't falling off my pace. I suffered in my last 300 yards and I fell off my pace by about half a second. That was very, very painful at the end. You cannot expect, no matter how good you feel, you are always going to hurt very badly at the end. Just gut wrenching, like you are going to barf any second, just cramps in my stomach, my arms just don't feel like they can go anymore. I feel like I have to breathe off the wall and just like I couldn't go another stroke. But somehow you just, go through the training you do, you're able to stick through another couple of laps.

A Brief Comment on the Flip Side of PM

In contrast to optimal performances where nothing could go wrong and everything seemed to click or happen, these participants spoke of what it is like to swim poorly and what they remembered about those performances. For example, Jenny, spoke of an inability to mentally prepare for a high profile swimming meet and in combination to the pressure she received from her coach, teammates, and swimmers from other teams within her district.

> I felt like, I remember in the locker room at state if I saw somebody who was seeded in the top five or something, I would be like, oh I wish I could be like them. When I was in the locker room somebody had asked what I was seeded, and I said third, and they were like whoa. And I just felt like peoples' heads turned and looked at me because I had never even come close in making an impact on that meet and here I was seeded third in the 100 yard fly and fifth in the 200 free. But I think that the pressure from that and other teams from my district coming up and saying how I had a chance to win, and they hoped I did. I mean, it was like the whole district was watching me. I'll tell you another thing that psyched me out was my coach. He told me that he was going to bring his camera so he could take a picture of me when I finished in the top eight. He said that he never had a swimmer finish that well. Then I felt so much pressure.

The feeling of not being in control of what was happening to her at the state meet also overwhelmed Jenny. She was in awe of other swimmers because of where they were from and the programs they represented. Starter Jackson spoke of competitions where an extreme amount of pressure was placed on her to swim an event that she had not performed either in practice or in her mind.

> Because I did not get a chance to practice this event much, and because there are other people on it, I guess I became very nervous. The nervousness came from not wanting to let my team down and from my coach putting a lot of pressure on me. This was a kind of shock, not a shock, but just kind of surprising and just hard to deal with mentally right before I was supposed to swim the race. In addition, this was a race that I don't usually swim and I didn't have a routine or feeling for the start and stuff like that. It was the third time all year that I swam this particular race, and now

> I have to do it at nationals and my team is counting on me. I just had not practiced it enough and I had a sense of being unprepared. I didn't have a mental plan for that race or the start.

Jane spoke of instances where she swam poorly and felt that they stemmed from her inability to swim according to her mental plan.

> I went out too slow and I knew that I could have taken my first half out faster and still had enough energy to get me home. I also knew that my turns could have been better. I was not quite streamlining enough off the walls by not getting a solid push. I knew that I was making these mistakes because of what other swimmers were doing. By watching other people in you're heat and when you're upside down you can see how hard or how far you are going in relation to them as well as to the flags. When there are other people swimming with me in my heat, my turns were as good if not better than the other girls. Therefore, if I wasn't doing as good in turns as they were, I knew that I should be doing better.

Summary

The athletes in this study associated several things with the PM phenomenon. These included focus cues such as being high in the water, an effortless or unconscious swim, and a swim being automatic. Such sensations seemed to encourage these participants and reinforce a "mental feeling" that performance was "just right." In addition, these individuals associated PM with strategies such as concentrating on the other swimmers as indicators of performance, as well as on feelings of self-efficacy and self-realization of their ability, and on believing in their coaches' knowledge and advice. These athletes seemed well in tune to the process associated with optimal performances. Throughout the text, they explained strategies, processes, or individual plans for successfully swimming their races. Whether such plans involved counting down laps, or focusing on arm speed, or watching their coach for performance cues, they all seemed to know what they needed to do to be successful.

CHAPTER V

DISCUSSION

Iso-Ahola and Mobily (1980) defined psychological momentum as "an added or gained psychological power which changes interpersonal perceptions and influences an individual's mental and physical performance" (p. 391). This definition, in my opinion, suggests that a enhanced psychological power overwhelms an individual and, therefore, creates an increased capability to perform, almost uncharacteristic for that athlete.

The results of the present study suggest that each individual may perceive and experience this "feeling or sensation" differently. This altered state of mind may simply be an illusion, nothing that can be empirically measured, although it has been attempted frequently. Researchers and the available data conflict on the existence of psychological momentum, perhaps this is due to the fact that the phenomenon can not be measured empirically. Most had never asked participants what they felt, what their thought patterns were before participation, or how they perceived their performance? Several investigators relied wholly on post-hoc data.

I chose to approach this illusive construct by obtaining the perceptions of several sport participants. I simply asked the participants to tell me about their experiences. Their answers suggest that there is no absolute or global response or perception about the phenomenon of PM.

Robert Adams (1992) wrote, "Phenomena of a momentum-like nature are invoked regularly in sport by participants, coaches, commentators, and sport psychologists. In a thorough analysis of basketball shooting, however, Gilovich, Vallone, and Tversky (1985)

found no evidence for the "hot hand" among NBA players with respect to free throws, field goals or nongame shooting. There was no consistent statistical relationship between making a shot and the outcome of subsequent shots. The authors attributed apparent hot streaks to a "shared cognitive illusion among spectators and players based on a failure to recognize sequences of events expected by chance" (p. 934). However, the results of the present study suggest that this shared cognitive illusion may be a very lethal weapon in sport. If an athlete subscribes to such a concept, then, to that athlete, the phenomenon exists regardless of the presence or absence of empirical evidence. If the athlete perceives an added or gained psychological power, who is to say it is not legitimate? An illusion of the mind suggests that PM may not be measurable, but may be experienced. There are researchers who have argued tirelessly that such a construct exists in the minds of athletes.

While many researchers and practitioners feel that athletic ability plays a larger role than psychological momentum in determining successive performance outcomes (e.g., victories), they also acknowledge that psychological momentum may have an impact on the outcome of athletic contests. Iso-Ahola and Mobily (1980) found that psychological momentum leads to an increased probability of success for athletes. The present study examined the perceptions of psychological momentum by female competitive swimmers. Sport psychological interventions and themes surfaced during interviews and analysis of the transcripts. The interviews examined the perceptions of two distance swimmers (500 yds., 1000 yds., and 1650 yds. freestyle) and two sprint swimmers (50 yds., 100 yds., and 200 yds. events). Interesting points which transpired from interviews with the distance swimmers illustrated that these participants felt as if they could not control how they felt, but could

control how they swam. They articulated that when psychological momentum occurred during their race where nothing could go wrong and everything seemed to click or just happen, they were able to practice this event through the use of mental plans and mental rehearsals. They indicated that during this particular race where psychological momentum took place, it seemed as if they had swum this race many times. They indicated that they knew exactly how they were to feel and when in the race this feeling would occur. Instead of overwhelming them mentally, physically, and emotionally, distance swimmers said they had a plan of how to get through the pain in order to finish strong.

Sprinters, on the other hand, illustrated a sense of unconscious effort. Upon completion of their race, a sense of "who was that" entertained their thoughts. Mental plans and mental rehearsals were also quite present and remarkably vivid. The use of a third person technique to witness how she looked in the water was evident in one instance and provided great emotional support. An additional factor was that when psychological momentum occurred, that particular swim was on an even mental level as her plan or rehearsal. When this was happening, a sensation of "flying" overwhelmed her thoughts and a race where nothing could go wrong was a result.

Throughout this study there have been examples of times where participants perceived that everything seemed to click and nothing could go wrong. As articulated by each of the athletes, performance in subsequent races within the same swimming meet, proved to be highly successful. Each athlete experienced a feeling of being invincible, or simply accepting, at that moment a high degree of ability, and expected great performances. These athletes were not going to let anything bring them down. In addition, one athlete expressed

her perception of psychological momentum during her swim. It was a lengthy race, and she made reference to being motivated by following through on her mental plan. By watching her coach, and comparing her race to those she was competing against, she increased her awareness of what her plan or strategy entailed, and relied heavily on this reinforcement to push on.

On the other hand, there was no evidence in this study that PM persists across subsequent swimming meets. In fact, numerous cases illustrated quite a different scenario. This is not to suggest that successful or peak performances can not initiate a feeling of empowerment. However, the pressure to live up to unrealistic expectations tend often to deflate rather than sustain positive emotions. As the interviews suggested, feelings of self-confidence, motivation, and progression toward a goal increased dramatically for these swimmers as they achieved and surpassed goals for the race.

In addition to goals that were surpassed and the experiences of swimming beyond one's consciousness and competing for oneself, there were instances where these participants expressed feelings and perceptions of what happened during their worst performance. Numerous instances arose illustrating a sense of panic, sometimes related to an ambiguous swim where the individual was not adequately prepared mentally for the race, and other times to coaches, family, and fans expressing their extreme desire to see them swim perfectly. The pressure applied by many coaches leads to the athlete feeling overwhelmed by a pressure to win. Comments such as, "I have never had anyone to make a difference in the state meet, so I brought my camera when you win State tonight." placed one athlete in a tail-spin that she was never able to correct.

In addition to pressure-filled comments, some athletes indicated they were overwhelmed by the ambiguity of the situation. In one case, this was triggered by a coach's comment that, "I know that you have not swum this race much this year, but we have a chance to get in the top eight in the nation, if you can bring us home." Not having been able to practice the necessary elements of a particular race can be anxiety producing and could forced any athlete to concentrate on what could happen if she does not hit her turn, if she does not time her start accurately, if she does not perform as expected, or if she lets down other swimmers who are depending on her.

Another instance where anxiety was an end result stemmed from the feeling of one athlete that she was unprepared for the challenge that is confronted her. In this instance she was introduced to a state-level competition without having had any prior knowledge about the competition. In order to adequately and effectively anticipate occurrences at championship level meets, she felt she must understand the characteristics of such a meet. These include: being prepared for the "crowdedness" of the facility and not being able to adequately warm-up as she desires; preparing herself to face the fact that major programs with long-standing traditions will be represented, and most likely with a large contingency; and receiving the necessary training to enable her to compete both in the morning and in the afternoon.

Implications

In my opinion, the strongest and most profound practical implication of this study is that coaches need to schedule practices so that they resemble competition in every sense of the term. The ability to practice a particular race to the point where it becomes automatic with the sound of the gun is crucial. Athletes draw great strength from the feeling that they have prepared themselves both physically and mentally for competition. The mental aspect of swimming is so complex that Olympic legends such as Tom Jager can break World Records without the grueling training that may be needed if he were not so in touch with his mental game. The ability to focus on specific aspects or components of a race provides a secure feeling that the physical and mental are working as one.

In addition, the present results suggest that coaches, parents, and other significant people may influence athletes in ways either that facilitate or diminish the prospects of PM. However, placing undo pressure on athletes may be detrimental. Allowing swimmers to compete in ways they are most confident and comfortable will likely benefit their performance. Perhaps the principle that should be followed in to allow swimmers to compete for themselves first, and the joy and pride that comes with successful goal achievement will then be particularly satisfying.

I believe that future research is needed to examine the perceptions of PM by both male and female athletes in swimming as well as in other sports. In addition, perceptions of PM should be obtained from athletes competing at different levels (e.g., youth, high school, amateur, and professional sport). Hopefully, such investigation will add considerable clarity to our understanding of the elusive phenomenon of PM.

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APPENDICES

APPENDIX A

COACH'S PERMISSION

Purpose of Study

The purpose of the study is to examine athletes' perception of psychological momentum and its effect on performance within and across competitive swimming events and/or meets. Hopefully, the study will enhance the knowledge base regarding this topic by employing a qualitative interview technique.

Description of Study

I will be asking successful elite swimmers to participate in this study. Their participation is purely voluntary. It is their prerogative to terminate their participation at any time without prejudice to them. The study will involve two interview sessions. The swimmers may take as long as they wish in both sessions, but the sessions are designed to take approximately sixty minutes and thirty minutes, respectively. The first interview will consist of open-ended questions. The participants will be asked to focus on personal experiences within successful swimming performances or across a series of swimming meets. The second interview will involve validating the transcribed information. The athletes will be asked to approve the data, make corrections to the data, and/or make any additions to the data.

Permission

I,_____, head coach of _____ give Kirk E. Peterson permission to approach athletes on my team to participate in a qualitative study on psychological momentum.

Contact for Information:

Kirk E. Peterson, Dept. of Cultural Studies, 1914 Andy Holt Ave. University of Tennessee, Knoxville, TN 37996-2700, (615) 974-5111.

APPENDIX B

INFORMED CONSENT

I,_____, hereby volunteer to participate in a qualitative research study that examines my perceptions of psychological momentum. Specifically, I will be asked to comment on my perceptions of psychological momentum and its perceived effect on performance variables across competitive swimming events and/or meets.

I understand that I will be involved in an initial interview session and a follow-up interview session. The follow-up interview session is necessary to validate the data. I understand that the initial interview session will take approximately sixty minutes and that the follow-up interview session will take approximately thirty minutes. I understand that the interview sessions will be audio taped. I understand that I will be given the opportunity to listen to the audio tape and approve its use in the study. I understand that my name and the information I give in the interview session will remain confidential. In order to preserve confidentiality, the audio tapes will be erased at the completion of the study.

I understand that the possible benefits obtained through this investigation include a better understanding of the characteristics and advantages of psychological momentum. I understand that there are no apparent or foreseeable risks or discomforts involved in this study.

I understand that my participation in this study is voluntary and that refusal to participate will involve no penalty or loss of benefits, and that I may withdraw or discontinue participation at any time without penalty.

Date:_____ Signature:_____

Contact for Information:
Kirk E. Peterson, Dept. of Cultural Studies, 1914 Andy Holt Ave. University of Tennessee, Knoxville, TN 37996-2700, (615) 974-5111.

APPENDIX C

INTERVIEW GUIDE

1. I would like for you to talk about where and how you were raised and how your parents encouraged you or provided for you to swim whenever and wherever you wanted.

2. Tell me about an experience, in as much detail as possible, of a time when you swam and nothing seemed to go wrong, and everything seemed to just click or happen.

   Probes:
   Tell me in as much detail as possible, did that performance influence your self-confidence in subsequent races or meets?

   Tell me in as much detail as possible, did that performance influence your self-control in subsequent races or meets?

   Tell me in as much detail as possible, did that performance influence your motivation in subsequent races or meets?

   Tell me in as much detail as possible, did that performance influence your progression toward your goals in subsequent races or meets?

3. Tell me, in as much detail as possible, about another swimming performance where everything seemed to click and nothing seemed to go wrong.

4. Think of one more meaningful swimming performance and tell me about that experience in as much detail as possible.

VITA

Kirk Peterson was born in Moline, Illinois on February 18, 1972. He attended schools in the public system in Rock Island, Illinois, where he graduated from Rock Island High School in June, 1990. He entered the University of Wisconsin-La Crosse during August of 1990 where in May, 1994 he received the Bachelor of Science in Psychology with an emphasis in coaching. In August, 1994 he entered the Master's program in Sport Psychology at The University of Tennessee, Knoxville, where he officially receiving the Master's degree in May, 1996. In the process of receiving his Master's degree, he began to pursue the Doctorate of Education in Sport Psychology, while working as the Interim Aquatics Coordinator for The University of Tennessee, Knoxville.