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A QUALITATIVE ANALYSIS OF MOTIVATION
OF ELITE FEMALE TRIATHLETES

A Thesis

Presented to

The Faculty of the Department of Kinesiology

San José State University

In Partial Fulfillment

of the Requirements of the Degree

Master of Arts

by

Alexis Waddel-Smith

August 2010

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The Designated Thesis Committee Approves the Thesis Titled

A QUALITATIVE ANALYSIS OF MOTIVATION
OF ELITE FEMALE TRIATHLETES

by

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ABSTRACT

A QUALITATIVE ANALYSIS OF MOTIVATION OF ELITE FEMALE TRIATHLETES

by Alexis Waddel-Smith

The multidimensional theoretical framework of Self-Determination Theory (SDT) has gained prominence in the sport and exercise field to assist in understanding human motivation. While there is extensive research on motivation of recreational athletes, no study has qualitatively examined the motivation of elite female triathletes. The primary purpose of this research was to determine how motivation to train and compete is maintained at the elite level using the Basic Needs Theory. The participants were eight elite female triathletes who competed in International Triathlon Union (ITU) draft-legal Olympic distance, Half-Ironman, and Ironman triathlons. Results from the semi-structured interviews revealed that challenges, love of the sport, and togetherness enhanced motivation to persist in this demanding sport. Several similarities with Deci and Ryan's (2000) Basic Needs Theory were found. Directions for future research using SDT within the sport of triathlon were discussed.

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CHAPTER 1: INTRODUCTION

Triathlon is a multi-sport endurance event comprised of swimming, cycling, and running that was begun by the San Diego Track Club in 1974. Each leg of the race and the transitions between them are included in the participant's total time, which can range from just under one hour up to 17 hours, depending on the distance of the event. The now-standardized sequence begins with swimming, followed by cycling, and concludes with running.

The distances of triathlon events can vary and include the sprint, Olympic, long/half Ironman/70.3, Ironman, and Ultra-Ironman. Athletes in this study have competed in the following International Triathlon Union (ITU) events: the Olympic distance draft-legal style (0.9 mile [1.5 km] swim, 24.8 mile [40 km] bike, and 6.2 mile [10 km] run); the non-drafting Half-Ironman, or "70.3" (1.2 mile [1.9 km] swim, 56 mile [90 km] bike, and 13.1 mile [21.1 km] run); and/or the non-drafting Ironman, which is double the 70.3 distance (2.4 mile [3.9 km] swim, 112 mile [180.2 km] bike, and 26.2 mile [42.2 km] run).

The motivation of elite female triathletes to accomplish daily training routines as well as compete at the highest level of sport is physically and mentally grueling. Some professional triathletes will have one breakthrough race but are overzealous and never realize their true potential and soon leave the sport (Friel, 1998). Turning professional is the easy part, but making a lasting career, handling the pressure of training, competing and traveling year after year is the hard part (Murphy, 1999). Training and competing for triathlon takes a tremendous amount of personal commitment (Furst, Ferr, & Megginson,

1993). The intense training and racing schedules required to pursue the sport contribute to a “compromised social life” (Mallett & Hanrahan, 2004, p. 195) in which many social activities are sacrificed. An examination of how these athletes remain motivated year in and year out at such a high level could prove beneficial to coaches as well as other athletes.

Motivation in sport has been investigated in many different athletic disciplines including gymnastics, swimming, and cycling (Gould, Feltz, & Weiss, 1985; LaChausse, 2006; Weiss & Weiss, 2006). According to Durand-Bush and Salmela (2002), motivation variables include training, teaching/coaching, parental support, enjoyment, recovery, age, and psychological skills and attributes. Weiss and Weiss (2006) have stated that motivation and continued participation in competitive sport are affected by several psychological and social factors. Additional motivational determinants including mental toughness, personality, and achievement goals have been looked at in sports such as soccer (Thelwell, Weston, & Greenlees, 2005), cycling (LaChausse, 2006), gymnastics, and youth sports (Klint & Weiss, 1987). Although motivation to compete in sport is different for each individual, research has shown that there are similar factors involved in what motivates people to continue to participate (Gould et al., 1985; Weiss & Weiss, 2006).

One theoretical framework used to understand motivation is Self-Determination Theory (SDT), which suggests that people are inherently motivated to master their social environment (Deci & Ryan, 2000). SDT also proposes that in order to have continued

psychological growth and well-being, motivation requires satisfying three basic psychological needs: autonomy, competence, and relatedness (Deci & Ryan, 2000).

According to Mallett and Hanrahan (2004), little research on the motivation of elite athletes has been conducted, especially using the social-contextual framework of SDT. In addition, the use of qualitative methods to ascertain motivational information relating to persistence in sport is lacking. To further develop research on elite athletes and SDT's Basic Needs Theory, the sport of triathlon was examined in the current study.

The majority of research focusing on triathlon has concentrated on the physiological aspects of multisport (Galy et al., 2008; Neubauer, König, Kern, Nics, & Wagner, 2008; Park, Park, Kim, & Kwak, 2008). While triathlon has been around for 31 years, there have been few psychological inquiries.

Furthermore, there has been limited research on the motivations of elite athletes, especially elite female athletes (Beaudoin, 2006). Fewer studies still have incorporated a qualitative methodology (Durand-Bush & Salmela, 2002; Legg, Mackie, & Park, 2005; Mallet & Hanrahan, 2004; Palmer, Burwitz, Smith, & Collins, 1999). Qualitative analysis is important because it allows for the sharing of human experiences, emotions, and detailed information that only qualitative inquiries can provide. Research into what motivates these women to train and compete for this grueling sport had yet to be examined; therefore the primary concern of this study was to determine how motivation is maintained at the elite level using the SDT framework. Semi-structured interviews with elite female triathletes produced an in-depth understanding of the motivational factors they associated with their longevity in the sport as well as insight into this community of individuals. Similarities

were found between SDT's Basic Needs Theory and the three themes identified in this study of challenges, love of the sport, and togetherness.

This thesis is presented in three chapters, with the objective of submitting a journal article for publication. This first chapter has been an introduction to the topic of interest. Chapter 2 is a proposed journal article, prepared according to submission guidelines proposed by *The Sport Psychologist*. Chapter 3 is extended support material including a further discussion of the topic, a literature review covering information on the theory that was used as well as information that supported the current study, and a methods section which details the procedures, participants, research design, instrumentation, data analysis, and trustworthiness of the study.

In summary, despite the fact that there are numerous research studies on motivation, research specifically related to the sport of triathlon and elite female athletes had yet to be examined. Utilizing SDT to examine how these elite female triathletes continue to be motivated to train and compete at a high level of sport added insight into this community of individuals, improved the limited knowledge we have on elite female triathletes, and could prove beneficial to coaches, parents, and significant others who not only work with elite athletes but with individuals working towards motivation and perseverance in exercise and sport.

CHAPTER 2: JOURNAL ARTICLE

A Qualitative Analysis of Motivation of Elite Female Triathletes

Alexis Waddel-Smith

San José State University

The multidimensional theoretical framework of Self-Determination Theory (SDT; Deci & Ryan, 1985) has gained prominence in the field of sport and exercise psychology to assist in understanding human motivation (Chantal, Guay, Dobрева-Martinova, & Vallerand, 1996; Hagger & Chatzisarantis, 2007; Kilpatrick, Hebert, & Jacobsen, 2002; Markland, 1999; Vansteenkiste, Simons, Soenens, & Lens, 2004; Vlachopoulos, Karageorghis, & Terry, 2000). While there is extensive research on motivation of recreational athletes (e.g. Tsorbatzoudis, Alexandris, Zahariadis, & Grouios, 2006), no research has qualitatively examined the motivation of elite female triathletes. The primary purpose of this research was to determine how motivation to train and compete is maintained at the elite level using the framework of the SDT mini-theory Basic Needs Theory (Deci & Ryan, 1985). The participants were eight highly accomplished elite female triathletes who competed in International Triathlon Union (ITU) draft-legal Olympic Distance, Half-Ironman, and Ironman triathlons. Results from the semi-structured interviews revealed that challenges, love of the sport, and togetherness enhanced motivation to persist in this demanding sport. Several similarities with Deci and Ryan's (2000) Basic Needs mini-theory were found. Directions for future research in triathlon and SDT are discussed.

Triathlon is a multi-sport endurance event comprised of swimming, cycling, and running that was begun by the San Diego Track Club in 1974. Each leg of the race and the transitions between them are included in the participant's total time, which can range from just under one hour up to 17 hours, depending on the distance of the event. The now-standardized sequence begins with swimming, followed by cycling, and concludes with running.

The distances of triathlon events can vary and include the sprint, Olympic, long/half Ironman/70.3, Ironman, and Ultra-Ironman. Athletes in this study have competed in the following International Triathlon Union events: the Olympic distance draft-legal style (0.9 mile [1.5 km] swim, 24.8 mile [40 km] bike, and 6.2 mile [10 km] run); the non-drafting Half-Ironman, or "70.3" (1.2 mile [1.9 km] swim, 56 mile [90 km] bike, and 13.1 mile [21.1 km] run); and/or the non-drafting Ironman, which is double the 70.3 distance (2.4 mile [3.9 km] swim, 112 mile [180.2 km] bike, and 26.2 mile [42.2 km] run). The International Triathlon Union (ITU) is the international governing body

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for the sport of triathlon and was instrumental in having triathlon included as an Olympic sport for the first time in the 2000 Games held in Sydney, Australia.

The motivation of elite female triathletes to accomplish daily training routines as well as compete at the highest level of sport is physically and mentally grueling. How do these athletes make a lasting career, handle the pressure of training, competing, and traveling year after year? Training and competing for triathlon takes a tremendous amount of personal commitment (Furst, Ferr, & Megginson, 1993) as well as a “compromised social life” (Mallett & Hanrahan, 2004, p. 195). An examination of how these athletes remain motivated year in and year out at such a high level could prove beneficial to coaches as well as other athletes. Knowing what elite level female triathletes do to “stay at the top once they become the best” (Durand-Bush & Salmela, 2002, p.155) may add important information to the current motivation research.

With the passing of Title IX in 1972, the accessibility of sports participation among women increased (Lopiano, 2000). The increase in women participating in sports and particularly endurance sports gained momentum with the 1980s marathoners Grete Waitz and Joan Benoit Samuelson, and the 1982 Ironman World Championship second place finisher Julie Moss (Staff, 2005; Murphy, 1999). Today there are more women competing in elite endurance sports than in past years, however Beaudoin (2006) has stated that there is limited research on elite athletes, especially elite female athletes. Women who participate in elite sports often have many roles (Herbst, 1990). Not only are these women high level athletes, but they are often carrying additional responsibilities as mothers, wives, and business owners (Herbst, 1990; Torrence, 2002). Professional female athletes make sacrifices to continue to participate in high level sport (Torrence, 2002). The motivation to continue to train and race at a high level among the elite female triathletes in this study provided additional insight into this particular community of athletes.

Motivation in sport has been investigated in many different athletic disciplines including gymnastics, swimming, and cycling (Gould, Feltz, & Weiss, 1985; LaChausse, 2006; Weiss & Weiss, 2006). According to Durand-Bush and Salmela (2002), motivation variables include training, teaching/coaching, parental support, enjoyment, recovery, age, and psychological skills and attributes. Weiss and Weiss (2006) have stated that motivation and continued participation in competitive sport are affected by several psychological and social factors. Although motivation to compete in sport is different for each individual, research has shown that there are similar factors involved in what motivates people to continue to participate (Gould et al., 1985; Weiss & Weiss, 2006).

One theoretical framework used to understand motivation is Self-Determination Theory (SDT; Deci & Ryan, 1985). SDT suggests that people are naturally self-motivated, active, interested in pursuing activities that are enjoyable, and are inherently motivated to master their social environment (Deci & Ryan, 2000; 2008). SDT also proposes that “all humans have a need to feel competent, autonomous, and related to others” (Deci & Ryan, 2008, p. 15).

Self-Determination Theory is comprised of four mini-theories (Hagger & Chatzisarantis, 2007). The first, Cognitive Evaluation Theory (CET), was developed by

Deci and Ryan (2008) to explain motivation by examining the effects of the social context in which people place themselves. The second mini-theory, Organismic Integration Theory (OIT), states that extrinsic motivation plays a role in achieving an outcome that is more or less accomplished autonomously (Weiss & Amorose, 2008). The third mini-theory, Causality Orientation Theory (COT) focuses on the relatively stable individual differences in people's motivational orientation (Weiss & Amorose, 2008).

The final mini-theory is Basic Needs Theory, and was used as the foundation for the current study. The need for competence, autonomy, and relatedness are assumed to be universal needs and the satisfaction of these needs relate to psychological functioning and well-being (Weiss & Amorose, 2008). The basic need of competence, as described by Kilpatrick et al. (2002), is having a sense of self-efficacy and mastery. Autonomous behavior is the experience of choice. Individuals choose to participate in a selected behavior and regulate themselves in pursuit of self-selected goals (Deci & Ryan, 1985). Relatedness refers to feeling a connection to others in the social environment (Deci & Ryan, 2000). Social environments that assist in satisfying the three basic needs will promote motivation, support people's natural drive for activity, and "yield positive psychological, developmental, and behavioral outcomes" (Deci & Ryan, 2008, p. 15). How these needs are satisfied or unsatisfied will be different across all people, times, and places. The degree to which these needs are supported or thwarted will have important implications on motivation (Deci & Ryan, 2000).

According to Mallet and Hanrahan (2004), little research on motivation of elite athletes has been conducted, especially using the social-contextual framework of SDT. In addition, the use of qualitative methods to ascertain motivational information relating to persistence in sport is lacking. In order to further develop research on elite athletes using the SDT framework, the sport of triathlon was examined in the current study.

The majority of research regarding triathlon has concentrated on the physiological aspects of this multisport endeavor (Galy et al., 2008; Neubauer, König, Kern, Nics, & Wagner, 2008; Park, Park, Kim, & Kwak, 2008). Few researchers have considered the psychological aspects of triathlon. Research conducted by Furst et al. (1993) found that fun, physical fitness/health, competition, and socializing were factors that motivated athletes with disabilities to participate in a triathlon. Burke and Jin (1996) predicted performance in a triathlon event based on physiological, psychological, and performance history information. The psychological factors that predicted finishing time included performance history and self-efficacy. Psychological factors accounted for 80% of the performance variation while physiological factors accounted for 52% (Burke & Jin, 1996), suggesting that psychological factors play a large role in endurance events, specifically in the sport of triathlon. Bell and Howe (1988) examined motivation to compete, mood disturbances, and mood state profiles of 160 male and 89 female triathletes. The skill level of the athletes was not mentioned. Athletes completed two questionnaires, the Profile of Mood States (POMS; McNair, Lorr, & Droppleman, 1971) and a motivational rating scale. With regard to motivations, participants indicated that a desire to compete with oneself, improve fitness, and experience enjoyment ranked highest (Bell & Howe, 1988). Inquiries into motivation with other endurance sports such

as cycling and running have shown that competition, goal achievement, social incentives, and health reasons were common motivations for these amateur female and male athletes (LaChausse, 2006; Masters & Ogles, 1995). It would seem that triathletes as well as other endurance sports participants may share similar motivations for competing, however, these studies have inquired about amateur athletes and not necessarily those competing in the professional ranks.

In addition to the limited psychological research on triathletes, there is also a lack of motivational research on elite athletes (Mallett & Hanrahan, 2004). Mallett and Hanrahan (2004) interviewed female and male elite track and field athletes. Their study used SDT, the hierarchical model of motivation, and the achievement goal theory to discuss their findings. The three general themes that developed from Mallett and Hanrahan's qualitative study were personal goals and achievement, strong self-belief, and life revolving around track and field. The researchers concluded that the accomplishment of goals enhances the perception of competence which positively influences self-determined motivation. These general themes are consistent with other research in motivations of elite athletes (Durand-Bush & Salmela, 2002; LaChausse, 2006; Legg, Mackie, & Park, 2005).

With regard to perseverance in sport, Durand-Bush and Salmela (2002) employed qualitative research methods to analyze factors that contribute to the development and maintenance of elite team and individual sport athletes. Results, which did not discuss gender, showed that athletes went through four stages during their athletic career: sampling, specializing, investment, and maintenance. Although this study looked at the phases of athletic progress during the span of time the athlete competed, future research should delve deeper into how elite athletes maintain their intense training and competition schedules (Durand-Bush & Salmela, 2002). Chantal et al. (1996) investigated sport motivation in relation to sport performance with female and male Bulgarian elite athletes. Participants completed the Bulgarian version of the Sport Motivation Scale (Pelletier, Forier, Vallerand, Tuson, Briere, & Blais, 1995), which is based on the principles of SDT. Results showed that in comparison with less successful athletes top performing athletes exhibited increased levels of non-self-determined forms of motivation (Chantal et al., 1996). Another purpose of the investigation was to determine if there were gender differences in elite athletes' motivation. Results indicated that women exhibited higher levels of intrinsic motivation than the men in the study. However, there were no significant gender differences found for self-determined extrinsic motivation.

While research has examined what motivates an individual to take up the sport of triathlon, none have used the SDT framework (Deci & Ryan, 1985). In addition, few studies have inquired about the motivational processes of elite female athletes and even fewer have used a qualitative methodology (Beaudoin, 2006; Durand-Bush & Salmela, 2002; Legg et al., 2005; Mallet & Hanrahan, 2004; Palmer, Burwitz, Smith, & Collins, 1999). Semi-structured interviews were employed for several reasons. First, it was thought that answers from the interview would provide an in-depth understanding of elite female triathletes' experiences, perceptions, and feelings without the constraints of a questionnaire (Mallet & Hanrahan, 2004). Second, information on what motivates these

women may not be identified with questionnaires (Mallett & Hanrahan, 2004). Deci and Ryan (2000) stated that the degree to which the needs of autonomy, competence, and relatedness are supported or thwarted will have important implications on motivation. Therefore, the purpose of this research was to examine the motivations of elite female triathletes using SDT as the framework.

Methods

Participants

Participants were eight elite female triathletes ranging in age from 31 to 46 years old who had competed in ITU draft-legal Olympic distance, Half-Ironman, and/or Ironman triathlons for an average of twelve years. In this study, an elite or professional athlete was defined as one who has their elite license through the National governing body of USA Triathlon and had competed for a minimum of eight years. The women in this study were the best at what they did and competed nationally and internationally during their career. This select population of elite female triathletes is of the highest caliber (see Table 1).

Table 1

Elite female participants and their accomplishments.

Name	Age	Accolades
Betty	39	Olympian, 7-time Ironman World championships competitor, 5-time ITU World championship competitor, 2-time 70.3 World championships competitor
Alanna	36	9-time Ironman competitor, 3-time World cup competitor
Emily	46	Top-5 finisher and top-10 finisher in 15 Ironman Triathlon World Championship Triathlons, has competed in a total of 44 Ironman triathlons with top-5 finishes
Holly	42	Competed in first Olympic trials in 2000, 6 top-5 Ironman finishes, 2-time National Champion in duathlon and long course triathlon
Melissa	35	6-time Team USA World Championship athlete, former age group duathlon World Champion, 4-time Ironman competitor including Hawaii Ironman World Championships
Claire	31	ITU World Champion, Commonwealth Games silver medalist, European silver medalist, 3-time winner 70.3 World Championship, 3-time Hawaii Ironman World Championship competitor, ITU Long distance World Champion

Anna	40	Olympian, won numerous races including Chicago, Alcatraz, Los Angeles, St. Anthony's, 2-time National Champion
Taylor	35	2-time Olympic trials competitor (3-time qualifier), Olympic Games alternate, short course National champion, long course National champion

All eight women in the study had a background in competitive athletics from an early age. Five women were still competing at the elite level at the time of the interviews, two were retired, and one was on maternity leave. All eight women were Caucasian and married, and four women had at least one child. One woman was originally from the United Kingdom while the others were from the United States. All women were currently residing in the United States. The researcher contacted participants through the use of the snowball sampling technique (Allison & Meyer, 1988). The researcher competes in the professional circuit of triathlon, so she used her personal contacts to find athletes who fit the criteria. To protect the identity of each participant, personal details have been omitted however pseudonyms along with each participant's age are disclosed.

Materials

The author created an interview guide consisting of twenty-eight questions related to the three basic needs of competence, relatedness, and autonomy as described by SDT. Semi-structured in-depth open-ended interviews (Connaughton, Wadey, Hanton, & Jones, 2008; Durand-Bush & Salmela, 2002; Mallett & Hanrahan, 2004; Weekes & Woods, 2005) with each participant were conducted by telephone. An Olympus Digital Voice Recorder and an Olympus Telephone Pickup were used to record six of the interviews. The final two interviews were recorded using the same methods and instruments described above; however, when playing back the taped interviews, the volume was not loud enough to decipher the participant's responses. Thus, the participants emailed their responses from the written interview guide. Email interviews have been used successfully by numerous researchers (Browne, 2005; Mahtini, 2004; McCoyd & Schwaber Kerson, 2006). This particular type of communication has been found to be an efficient, convenient, and cost effective method of gathering data from a small network of geographically dispersed individuals (Worth, 2008).

Procedures

Prior to interviewing the participants, the researcher participated in a bracketing interview by an expert in the field of qualitative inquiry to learn and understand any personal biases the researcher may have had, as well as to note any corrections that may have been needed prior to participant interviews.

The average duration of the interviews were forty-five minutes during which time participants answered demographic questions as well as those that related to their autonomy, competence, relatedness, confidence, and success in the sport of triathlon.

Examples included: “What has given you the confidence to be successful in triathlon” (competence), “Did/do you feel connected to the people you train/race with?” (relatedness), “Have you ever felt pressure to continue training/racing?” (autonomy), “How do you define success in triathlon?” (success), and “What has given you the confidence to be successful?” (confidence). The final question, “Is there anything you would like to add or anything that you wished I had asked?” was used to ascertain any additional thoughts, feelings or comments that pertained to motivation and triathlons.

Data Analysis

All interviews were transcribed verbatim using the Start Stop Universal Transcription System Version 9.8.6 (Center Valley, PA). After the interviews were transcribed they were emailed to each participant to check for accuracy and make any necessary changes. As stated by Durand-Bush and Salmela (2002), “this process of member checking is an important step for establishing credibility” (p. 157). The participants requested no corrections. In order to begin the analysis process, raw information from each interview was written in list form. Similar meanings were then categorized into lower order themes and hand written on index cards. Then, the index cards were categorized and grouped together based on related content. Higher order themes were formed once the lower order themes were arranged and no further categorization could evolve. The major themes were identified as higher order themes and each were considered to be distinct. The process of analyzing data and reducing them into meaningful themes or categories has been used successfully in other research (Côté, Salmela, Baria, & Russell, 1993; Mallett & Hanrahan, 2004; Weekes & Woods, 2005). The extraneous verbiage of “um,” “like,” and run-on sentences that were within the original participant quotations were left out for a clearer and more concise description of the participants’ explanation of their experience.

Establishing Trustworthiness

Trustworthiness was established in various ways. First, the researcher was involved in a bracketing interview, which served to uncover personal biases about the phenomenon being studied in an attempt to present an untarnished view of the phenomenon and to better understand the participants’ outlooks. The bracketing interview also served as a means to check if questions were appropriate and whether they needed to be eliminated or additional questions needed to be added. It was imperative that the researcher set aside all preconceived notions in the bracketing process so that the coding of transcripts could disclose an unbiased picture of the participants’ experiences (Creswell, 1998). Second, thick, rich descriptions were utilized to provide a greater understanding of participants’ motives, environments, and situations (Mallett & Hanrahan, 2004). Third, peer reviews and debriefing were conducted with an expert in qualitative research (Palmer et al., 1999; Sparkes, 1998). Fourth, transcripts were sent to participants so that they could read, review, certify, and/or make alterations that would accurately describe their thoughts, feelings, emotions and situations. Participants read and reviewed their transcripts, and no corrections were made by any of the participants. This process of member checking was an important step for establishing credibility

(Amis, 2005; Durand-Bush & Salmela, 2002; Gratton & Jones, 2004). Finally, because the researcher has been involved in the sport of triathlon for more than fourteen years, she has an understanding of the culture of triathlon, what is involved in competing as an elite athlete and all that that encompasses, giving further credibility to this inquiry.

Results and Discussion

The purpose of this study was to qualitatively examine the motivational factors associated with longevity among elite female triathletes using the SDT framework (Deci & Ryan, 1985). This multidimensional theory has been utilized in other sports including track and field, swimming, and cycling (Mallett & Hanrahan, 2004; Vlachopoulos et al., 2000). The three general themes that emerged from the raw data were challenges, love of the sport, and togetherness. These three themes contributed to the participants' persistence in the sport of triathlon.

Challenges

All of the elite female triathletes in this study were competitive from an early age. After college the women stated that they wanted a new challenge to keep them healthy, fit, and in shape. A few of the women had seen triathlon on television, others were introduced to the sport by friends, and some said it seemed like a natural progression since they had swam in college, rode bikes to and from school, and ran during time off from swimming in order to keep in shape. Alanna and Betty stated how they got involved in the sport of triathlon:

I was a swimmer growing up and after college I started to run to keep in shape. I saw a triathlon on TV and I said, 'I know how to swim, I could probably figure out how to bike,' and then decided to do St. Croix as my first race. (Alanna)

I swam competitively in high school and college and I was just looking for a new challenge once my swimming career was over. I had seen the Ironman triathlon on TV when I was younger and thought the people were totally crazy. I had encountered people who had done triathlon over the years and once I was done with swimming I just wanted to get into it. It just seemed like something that would be fun and interesting. (Betty)

Many of the women stated that once they accomplished their first triathlon, the challenge to improve motivated them to train and prepare for additional competitions. Six of the eight triathletes in the study stated that there was always a task to improve on and that they knew that they could improve. The women gauged their improvement, and furthermore their success, by achieving goal times in the pool, on the track or bettering their time on the same course year after year. Increases in competence were assessed from wins, race results, and achievement of personal benchmark goals. The increase in competence from successfully achieving their goals enhanced their motivation to continue improving. Melissa described how she knew she was competent in triathlon while Taylor described how she defined success and why she has persisted for so long in the sport:

I knew I was competent in the sport based on my early results. With the exception of my very first race, I finished in the top four in my age group in six of my first triathlon events. I ended my amateur career with a World Championship bronze medal and a World Championship title in duathlon. Meeting the criteria to earn my elite/pro license was a good indication that I was competent. As a professional, I have judged my competency as a function of where I finish in the pro field. (Melissa)

Well, wins are always good [laughs]. But you can't control what other people do in races so I try not to get too hung up on that. Obviously I feel like winning increases confidence and I feel like that leads to more success. Kind of like once you start to win and have good results it just boosts your confidence and helps you continue. But I think too that just continuing to improve, I think with triathlon in particular because it's three sports, it's like there's always something you can improve on. It's like a never ending vicious cycle [laughs], but usually I'm like I know there's something else I can do better. I think that's what's kept me too in the sport, knowing that there is some room for improvement somewhere. (Taylor)

All eight women participated in the ITU Olympic distance style of racing, however one of the participants began racing this distance prior to the inception of drafting. Drafting is a technique that is used during the bicycle portion of the race to decrease wind resistance. The half-ironman or 70.3 triathlons are non-drafting and incorporate different tactics and training methods. All of the women in this study had participated in either the 70.3 and/or Ironman distances. While some of the women competed in the ITU and 70.3/Ironman distances during a single season, others found it to be a natural progression moving from the ITU distance to the longer distances of 70.3 and Ironman. Claire had begun her professional career competing at this distance, but soon became fed up with the politics of sport, was bored during her races, and needed a new challenge.

I think the ITU stuff was really good at the time. But I found I was getting a little bored with that distance, in that for me, I'm a strong swimmer, strong biker but my run was always, I really had to fight to be good at. I was getting bored getting stuck in the swim, bike being packed with 30-40 girls and then just coming in mediocre on the run... when I started doing long distance which is non-drafting, it started exciting me a lot more. For instance, doing the short distance and going up to Ironman is a whole different concept of training and logistics of the whole sport. I'm actually really motivated by this because it's different and it's a new challenge and I guess in a way it was like almost the challenge that was really something to draw me into doing this longer distance. (Claire)

Two of the women felt that their injury-free careers prolonged their persistence in the sport as well as enhanced their self-confidence, while the others experienced barriers that ultimately enhanced their motivation and challenged them to see if they were able to return to the sport in as good as shape as they were prior to their injury if not better.

Barriers included physical injury, emotional stressors of coping with rehabilitation, and loss of loved ones. As Emily explained, "I don't think I was the best, but I did have a very long career without being injured and I think that says a lot." Other participants discussed their experiences with similar challenges:

I really love competition and I sort of look at coming back from these challenges [injuries] as you know, it's a motivator and it keeps it interesting I guess; can I come back from these things? I've had a lot of ups and downs through my career: injuries, setbacks, and illnesses. Each time something sort of brings me down, my desire to get back to the level I was before is always there. (Betty)

Besides injuries, losing a family member was the biggest [thing] I had to deal with, and then at that point I wasn't sure if I wanted to be done. I didn't know if I could motivate to get into it [triathlon] again. But that ended up being the best year I've ever had so I found it in myself to push even harder. (Taylor)

Four of the women mentioned sacrifices that they endured during their careers, while one woman thought it would be a sacrifice to stop racing. These sacrifices included time spent with others, financial, and forgoing other choices to persist in this sport. Taylor commented that triathlon "is a pretty selfish sport." Holly explained, "This takes a lot of time and energy and effort and making the choice to forego other choices in life." Other participants also commented on this topic:

I have questioned why I continue. I have sacrificed monumentally to compete as a professional. The biggest sacrifices have been financial. I have persisted because I truly enjoy the process of training and the challenges of competing. (Melissa)

I've almost sacrificed the Olympic distance to have longevity in the sport and gone to a distance which I can actually succeed at just as well without battering my body so badly. (Claire)

We wanted to start a family and I thought it was going to be a sacrifice to stop racing because I'd been an athlete for so long. I thought it was going to be really hard, but it was pretty incredible that I felt at each race that God had his hand on my competitive juices tap and he turned it half a turn more each race. So by the time I got to the last one the competitive juices were done. (Anna)

As the women continued in their lengthy careers, six of them mentioned that they were motivated differently by lifestyle demands and life changes as they got older. Examples of these life changes included catering to other commitments such as relationships, going back to school, and wanting to start a family.

I've had different levels of hunger for the sport. Also, different things changed in my life, like back then I didn't have a boyfriend and I didn't want a house... I guess now it's more like I have to cater to other commitments and life changes which include having a relationship and wanting a property to own and other responsibilities that come with getting older. Also, in training it's sort of that

getting up in the mornings back then used to be, when I was younger, so easy, and I just think that now getting older and needing more recovery from training, it's just like my body just says 'no' more often than it used to. When the alarm used to go off I used to be awake before my alarm and couldn't wait to get out the door and now it's just like, no, I need another hour [laughs]. (Claire)

I have been highly motivated throughout my career. That said, motivation has ebbed and flowed given the stresses in my life and the introduction of other priorities. Major life events that have taken away some of my focus and thus motivation, include getting married and wedding planning, earning a master's degree and now planning to start a family. (Melissa)

I think this last year I was kind of like the most ready to be done, the most unmotivated I guess. We did want to start a family and we're just ready for a change, something different. But that's not to say that going though this I would not have the motivation to get back into [triathlon] after. I mean it's hard to say until we have the kid, but I don't see myself being done forever because of this. (Taylor)

Yes, [the level of motivation] has shifted. Life changes, new challenges, and age always change motivation. I am not as motivated to go swim every day as I am taking my daughter on a new adventure. Still motivated, but in different ways. (Emily)

Key components that these triathletes adjusted to during their careers included the challenge of participating in a new sport, the challenge to improve on their skills, times and placing, the progression of change from one distance and style of racing to another, coping with injuries and barriers, adjusting to lifestyle demands, and the aging process. The triathletes persevered and accomplished the goals that they had set for themselves despite the challenges that arose. The accomplishment of a challenging goal leads to increased confidence which in turn leads to an enhancement of perceived competence (Deci & Ryan, 1985). According to Deci and Ryan (1985) intrinsic motivation will be related to and enhanced by feeling a sense of accomplishment in a challenging activity.

Love of the Sport

This theme was consistent with all of the participants. They felt passionately about this sport, they were devoted to the sport, they loved training and competing as well as helping others and the sport itself improve. Holly said:

[Triathlon] is something I love and something I really enjoy so I don't know if it's so much that I feel that I think I'm great and that's why I'm successful but I think it's more that I know I love it and so I pursue it. Because I loved it [triathlon] and I've been so passionate about it, I think I've worked really hard at it...so I think because I loved it, I became devoted to it and because I became devoted to it I became fit enough to become successful... (Holly)

I love to swim, bike and run and I have a passion for those even if I don't have a passion for racing any more. I just love those three sports and if I can encourage any of my girlfriends to do a sprint triathlon...to me that's very fulfilling and rewarding and I'll always speak highly of the sport. I just love it and wish everyone would do one. (Anna)

Intrinsic motivation is defined by Deci and Ryan (1985) as an innate need that stems from a personal desire to find success independent of external rewards. The Organismic Integration Theory, one of Deci and Ryan's (1985) mini-theories, states that intrinsic motivation is thought to be the most desired state as it involves doing an activity for the enjoyment and satisfaction of participating in the activity and not for any external reason (Weiss & Amorose, 2008). All eight women in this study said that they participated and continued to participate in triathlon because it was fun. This sentiment has been echoed in numerous studies with athletes at varying levels of competition (Durand-Bush & Salmela, 2002; Furst et al., 1993; Gould et al., 1985; Klint & Weiss, 1987; Young, Medic, & McFadden, 2008). As Holly stated:

You know what it is, I think I actually just really enjoy racing. I think when I race I feel so alive. It's like the melding of the physical effort and mental effort and just kind of the emotional, spiritual effort, whatever, I just love that feeling; that adrenaline rush of being alive. So I can be as excited about doing a sprint race as I can about doing, you know, like maybe a more high profile long distance race. (Holly)

I really like travelling to different places where the races are. Just meeting new people, seeing culture, and just having fun. I enjoy racing, and I enjoy competing and seeing what my body can do. (Alanna)

During her first year racing professionally, Anna considered whether or not the sporting experience was fun: "I assessed it, and yeah, it was really fun."

Six of the women said they have enjoyed the experiences that this sport had brought. These included meeting new people, sharing the experience with family, and enjoying the journey and adventure. All eight participants noted in their interviews that it was a personal decision to train, compete and persist in this sport. According to Deci and Ryan (1985), autonomous behavior is the experience of choice. Individuals choose to participate in a selected behavior and regulate themselves in pursuit of self-selected goals. Asked whether or not they had felt pressure to train and race, Emily responded: "No, I never felt pressure to train or race. I was my own coach and my sponsors supported wherever I raced at any distance." Claire said:

No, and I think if I ever feel that there's pressure, like me wanting to do it as opposed to other people wanting me to do it, that's the day I have to say I've got to stop. Because I have to want to do this. Even just to be able to achieve in this sport, I have to want to do this more than anybody else wants me to do this. (Claire)

Three of the eight women had severe injuries that had stalled their progress at one point or another. During their long rehabilitation period each woman questioned why she competed at the elite level and whether or not it was worth pursuing the sport. During her rehabilitation from injuries Taylor questioned why she competed:

[The year] 2004 was real challenging. I definitely questioned if I should just be done and do I need to find a job. Having heard that women peak in their early to mid 30s and I was in my early 30s, I just didn't want to try to find another job [laughs]. [Rehabilitation] becomes harder than working out itself. More time consuming taking care of yourself and getting better. I just felt like I put that much into it [rehab] getting myself healthy I should at least see what I can do with it. (Taylor)

Betty struggled with health issues and whether or not she should retire from the sport:

Most recently I had some health problems, really struggled. I dropped out of more races than I ever have in my career and it was a really, really tough year. I did question why I was still going and it was a huge burden really to try and figure out what was going on and really did I want to continue racing. I had people tell me why don't you just retire, it's time to retire and I really did think about it. (Betty)

Even though these three women questioned why they competed at the elite level they, like the other five women interviewed, never felt like quitting. Claire stated that although she had injuries that left her unable to compete for as long as a year, she stated:

There was never one point where I said, 'I want to quit.' I just got back in and trained again. I guess in a way it's the natural thing for me to do. If I didn't have the sport I guess I would find it difficult to adapt to a different lifestyle anyway, so I really don't know any better, and at this stage I've not ever felt like I've wanted to quit. (Claire)

Emily said that she never felt like quitting the sport, and stated: "I love the sport. I just made small steps in new directions in the sport to improve it or help others." When asked if she ever felt like quitting, Melissa responded:

I don't think I have ever felt like quitting the sport. However, I have felt as though there need to be times when focus is deflected away from hard core training to develop as a person in other areas. A good example was while I was in grad school. I continued to train and compete in triathlon professionally, but I did allow myself to choose schoolwork over training on many occasions. (Melissa)

All eight triathletes share a love of the sport of triathlon. For them it has been a fun, exciting adventure and even though some had questioned why they competed at the elite level none had ever felt like quitting. The choice to remain motivated despite certain setbacks and challenges enhanced their love of this sport. For some, their pro career had ended while others were still engaged. All of the triathletes stated that they would

continue to be involved in the sport after their racing careers ended. The past few years Holly had continued to race professionally in part to build her coaching business: “I do personal coaching and a lot of camps, clinics, and talks; stuff like that.” Melissa also has a coaching business and said:

I expect to be involved in the sports that comprise triathlon as a coach, administrator or sports business professional. I have an established coaching business, have earned a masters degree in sport management and have an extensive network in the cycling and triathlon industry. I thoroughly enjoy the sport and seeing new up and comers succeed. (Melissa)

Despite how each athlete initially began the sport, their continued devotion was a strong theme that emanated from these women’s experiences.

Togetherness

The female triathletes stated that their families initially supported them in their early sporting endeavors. Family support included emotional, financial, and physical means (e.g., driving them to swim practice). An important aspect that arose during every interview was the support of each of the triathletes’ husbands. Husbands played an extremely important support role during each athlete’s career. Anna and Taylor described how their husbands were important during their careers:

He was my coach and manager. He did all the stuff beyond swimming, biking, running, and training; all the stuff that I’m not good at. All that stuff that I don’t enjoy, like writing to sponsors so they send your checks and putting together invoices, writing contracts, selling yourself basically... he quit his job so that we could go and travel together, experience that together. (Anna)

Being able to do it [triathlon] with him [husband]. I guess with my age now too I feel like it’s harder to get up out of bed at 5:30am and go for a swim [laughs]. That’s one thing I definitely wouldn’t do without Jason [husband] to get me out of bed. (Taylor)

It is interesting to note that half of the female triathletes in this study did not feel that having a connection to others motivated them to continue competing in triathlons. The questions “Do you feel connected to the people that you train and race with?” “Do you believe that having a bond with other athletes has motivated you to continue in the sport?” and “Would you provide examples?” were asked of each participant. As stated by Alanna:

Not anymore. There are some athletes that I keep in touch with, some that I don’t see anymore because they stopped racing. The local ones I still see but my travel buddies from a couple of years, I don’t see as often. I do it because it’s what I want to do. (Alanna)

There are not many athletes who I call friends. I’ve learned over the years that it’s not all about training with other people; you really got to be able to get out

there and do it on your own. I think the motivation still has to be there from within but you have to want to go out and train. (Claire)

The other half of the women made positive comments about feeling a connection to others and that having this bond helped them to stay motivated during their career. Betty said:

I think one of the things that's kept me in the sport for as long as I have been in it, is that I really enjoy the people I've met in the sport. Competitors, friends, training partners you know all those people are awesome and I think that really helps keep my desire going is that the people are just so much fun to be with. (Betty)

Holly said that she felt a connection to her training partners and it helped her to remain motivated to train especially for Ironman:

I'm an extrovert and I feel like extroverts get their energy from outside themselves. So, if I had to do all my training solo, I would've quit years ago because to me it would have gotten boring. (Holly)

There were differences among the camaraderie felt between the ITU Olympic distance draft-legal and the non-drafting 70.3 and Ironman. Holly said:

Most of the pros are amazing and I get along with them really well. There's a few women out there that have a distinct inability to separate the competition on the course from off the course. I try to avoid those people because they actually can burn your energy and kill your motivation [laughs]. I actually didn't enjoy ITU racing that much because I felt like there were a higher percentage of people with that mentality. Long course racing I find different. I find the majority of the long course athletes whether you're passing them or they're passing you, are really encouraging and I'm not exactly sure why if that [long course] attracts a different personality or if it's just they realize how much effort went into that day and they can feel for you. It takes a lot of stars aligned to have a good day at long course. So I think they appreciate when that happens even if it happens to another athlete. (Holly)

According to Betty, competitors participating in the longer distance races had mutual respect for each other:

We all put so much time and hard work into what we're doing that mutual understanding of what you've been through when you get to the start line and I find especially in the longer races that your competitors will cheer for you even though you're racing against them. (Betty)

The atmosphere in the ITU was kill or be killed according to Taylor: Some women on the ITU circuit, maybe I didn't get to know them enough, but they kind of appear different than they actually are or they come off wrong. It just seemed like overall the atmosphere of the ITU racing was just so much more intense. It's cut throat. With the non-drafting stuff and especially 70.3 those

people are just really laid back and it feels like more of a grass roots atmosphere. With ITU it's like you want to kill your competitors and you have to win and there's so much more on the line because it's with money but also with ranking points and it's just a whole other mentality. (Taylor)

All the triathletes felt a sense of togetherness with their husbands, family, and for some their training partners and racing buddies. Togetherness may be associated with what Deci and Ryan (2000) refer to as relatedness.

Conclusions

The purpose of this study was to qualitatively explore the motivational factors that elite female triathletes gave for continued participation in the sport of triathlon. This study is the first of its kind, in that it qualitatively examined the motivational aspects of elite female triathletes. The multidimensional framework of SDT (Deci & Ryan, 1985) was utilized as a means to examine if autonomy, competence, and relatedness were associated with continued longevity among these elite women. Results indicated that for these eight highly elite female triathletes the themes of challenge, love of the sport, and togetherness led to persistence in the sport of triathlon.

The triathletes overcame varying challenges during their careers in the elite field. These challenges included physical and mental barriers, injury, change in distances, and coping with age related lifestyle demands. According to Deci and Ryan (1985), intrinsic motivation will be related to and enhanced by feeling a sense of accomplishment in a challenging activity. Using the SDT framework, the challenges that these triathletes overcame may lead to increased confidence which in turn would lead to an enhancement of perceived competence (Deci & Ryan, 1985).

Passion, devotion, fun, and the experience encompassed the second theme: love of the sport. The triathletes loved training for and competing in the sport of triathlon. The choice to be on the start line was their own and if they had felt pressure from outside sources to continue they would have left the sport long ago. Their autonomy supported reasons for persistence in sport are congruent with other research (Furst et al., 1993; Standage, Sebire, & Loney, 2008; Vansteenkiste et al., 2004).

Support from husbands, families, and to a certain degree camaraderie with training and racing partners helped motivate these triathletes to continue to persist in the sport of triathlon. The ability to identify with others in one's social environment is similar to what Deci and Ryan (1985) describe as relatedness. Defined by Kilpatrick et al. (2002), relatedness refers to a connection in the social environment. Social environments that assist in satisfying the three basic needs will promote motivation, support people's natural drive for activity and "yield positive psychological, developmental and behavioral outcomes" (Deci & Ryan, 2008, p. 15).

Challenges, love of the sport, and togetherness resonate with Deci and Ryan's (2000) SDT mini-theory, Basic Needs Theory. According to Deci and Ryan (2000), people will tend to pursue goals that support their need satisfaction. The triathletes in this study felt that accomplishing challenges, feeling a sense of togetherness and their devotion to sport enhanced their self-determined motivation to persist for as long as they

had. Previous limited research on elite athletes has shown support for multiple motivational components (Chantal et al., 1996; Mallett & Hanrahan, 2004).

A limitation of the current study may be the small sample size. There are only twenty women nationally who are of this caliber in the sport. Thus, while this was a small sample size, it was a fair representation of the population that was of interest in this study. The opportunity to interview these highly accomplished athletes lends credibility to this study. Another limitation was that the information received from these triathletes might not be able to be generalized to athletes in different sports. However, the insights of the successful women in this demanding sport may provide useful information on motivation in regards to persistence in sport.

While the majority of women in the current study had positive experiences with their training partners, there were conflicting experiences with racing competitors. Therefore, future research should consider more fully the relationship of camaraderie between competitors in elite female sports. Despite the difference in length of the ITU and the half-Ironman/Ironman styles of racing, one of the major differences pertains to cycling rules. Future research should examine these styles of racing as well as investigate the differences in competitive camaraderie among elite triathletes. In addition, the concept of injury as a motivator was found to be prominent among the women in this study. It would be interesting to examine whether or not other elite female triathletes felt that having an injury would be motivation to continue in the sport, due to the sometimes long and burdensome aspect of sport injuries.

The author has been involved in the sport of triathlon as a professional for nine years and was personally frustrated with her declining motivation in the sport. The question of how some elite female triathletes maintain their motivation led to the present study. The author originally thought that as an elite athlete the motivation to compete must remain consistently high. She was surprised to find that lifestyle changes and demands brought about changes in motivation on a daily basis for these triathletes. The acute vacillations in athletes' motivation may be worth examining. Would small changes in daily, weekly or monthly motivation determine whether or not athletes persisted? For some of the triathletes in this study, they felt that having outside interruptions sometimes enhanced their motivation to continue training and racing at the elite level. While the motivation to train and compete stayed relatively high throughout each triathlete's career, as evidenced by all eight women stating that they never felt like quitting, the daily grind of training and competing at this level fluctuated. In addition, the author found it interesting that all the triathletes in the study named their husbands as the most supportive person during their career.

In conclusion, persistence and longevity in triathlon were enhanced by accepting and overcoming challenges, feeling a sense of togetherness, and having a deep love of the sport. These three themes resonate with SDT's Basic Needs Theory of autonomy, competence and relatedness. The women were self-motivated, active, interested in pursuing activities that were enjoyable, and they were inherently motivated to master their social environment (Deci & Ryan, 2000; 2008).

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CHAPTER 3: EXTENDED SUPPORT MATERIAL

Introduction

The motivation of elite female triathletes to accomplish daily training routines as well as compete at the highest level of sport is physically and mentally grueling. Some professional triathletes will have one breakthrough race but are overzealous and never realize their true potential and soon leave the sport (Friel, 1998). Turning professional is the easy part, but making a lasting career, handling the pressure of training, competing and traveling year after year is the hard part (Murphy, 1999). Training and competing for triathlon takes a tremendous amount of personal commitment (Furst et al., 1993). The intense training and racing schedules required to pursue the sport contribute to a “compromised social life” (Mallett & Hanrahan, 2004, p. 195) in which many social activities are sacrificed. An examination of how these athletes remain motivated year in and year out at such a high level could prove beneficial to coaches as well as other athletes.

Motivation in sport has been investigated in many different athletic disciplines including gymnastics, swimming, and cycling (Gould et al., 1985; LaChausse, 2006; Weiss & Weiss, 2006). According to Durand-Bush and Salmela (2002), motivation variables include training, teaching/coaching, parental support, enjoyment, recovery, age, and psychological skills and attributes. Weiss and Weiss (2006) have stated that motivation and continued participation in competitive sport are affected by several psychological and social factors. Additional motivational determinants including mental toughness, personality, and achievement goals have been looked at in sports such as

soccer (Thelwell et al., 2005), cycling (LaChausse, 2006), gymnastics, and youth sports (Klint & Weiss, 1987). Although motivation to compete in sport is different for each individual, research has shown that there are similar factors involved in what motivates people to continue to participate (Gould et al., 1985; Weiss & Weiss, 2006).

One theoretical framework used to understand motivation is Self-Determination Theory (SDT), which suggests that people are inherently motivated to master their social environment (Deci & Ryan, 2000). SDT also proposes that in order to have continued psychological growth and well-being, motivation requires satisfying three basic psychological needs: autonomy, competence, and relatedness (Deci & Ryan, 2000).

According to Mallett and Hanrahan (2004), little research on the motivation of elite athletes has been conducted, especially using the social-contextual framework of SDT. In addition, the use of qualitative methods to ascertain motivational information relating to persistence in sport is lacking. To further develop research on elite athletes and SDT's Basic Needs Theory, the sport of triathlon was examined in the current study.

Triathlon is a multi-sport endurance event comprised of swimming, cycling, and running that was begun by the San Diego Track Club in 1974. Each leg of the race and the transitions between them are included in the participant's total time, which can range from just under one hour up to 17 hours, depending on the distance of the event. The now-standardized sequence begins with swimming, followed by cycling, and concludes with running.

The distances of triathlon events include the sprint, Olympic, long/half Ironman/70.3, Ironman, and Ultra-Ironman. Gaining in popularity is the Olympic distance,

which is the choice of the International Triathlon Union (ITU) for the Olympic Games. The Olympic distance consists of a 0.9 mile swim, 24.8 mile bike ride, and 6.2 mile run (1.5k, 40k, 10k). The ITU is the international governing body for the sport of triathlon and was instrumental in putting the triathlon in the Olympics for the first time in the 2000 Games held in Sydney, Australia. The sport has grown in popularity so much that “no other sport has achieved Olympic status in so short a timeframe” (Clear Lead e-Articles, 2010).

With the passing of Title IX in 1972, the accessibility of sport participation among women increased (Lopiano, 2000). Endurance sports for women gained momentum with the 1980s marathoners Grete Waitz and Joan Benoit Samuelson (Murphy, 1999). Julie Moss, who placed second at the 1982 Ironman, is credited with inspiring individuals to participate in this type of endurance sport (Staff, 2005).

Athletes’ motivation to participate in sport is multifaceted. After completing their first triathlon, many triathletes continue to pursue the sport. The degree to which athletes remain engaged in the sport could be related to their continued satisfaction of the three basic psychological needs of competence, autonomy and relatedness.

The Appeal of Triathlon

Triathlon is a lifestyle sport. There is not a set age when a person must start. There is no required sporting background. Triathlon is not a staple high school or collegiate sport, where there are a limited number of years to play. Triathlons present people with a challenge. For some, this may be in the form of conquering their fear of open water swimming. For others, it may be a source to overcome the boredom of participating in a

single disciplinary sport like running (Hilliard, 1988). Although each participant competes independently, triathlons allow people of different abilities to participate with one another on the same course (Hilliard, 1988). Triathlons provide athletes with opportunities to “take risks, control the action and take credit for their accomplishment” (Hilliard, 1988, p. 312).

Statement of Purpose

There has been limited research on the motivation of elite athletes, especially elite female athletes (Beaudoin, 2006). In addition, few studies have incorporated a qualitative methodology (Durand-Bush & Salmela, 2002; Legg, Mackie, & Park, 2005; Mallet & Hanrahan, 2004; Palmer, Burwitz, Smith, & Collins, 1999). The current study utilized semi-structured interviews with these elite athletes in order to produce an in-depth understanding of the motivational factors they associated with their longevity in the sport. The primary concern of this research was to determine how motivation to train and compete is maintained at the elite level using the Self-Determination Theory framework. Inquiring about continued motivation of elite female triathletes gave insight into this community of individuals.

Importance of the Study

The research on motivation, however extensive, lacks in-depth qualitative inquiry into the motivational factors involved in the longevity of elite women’s sports, specifically triathlon (Mallett & Hanrahan, 2004). This research added to the limited studies on women and sport and gave a voice to these particular competitors. The use of Self-Determination Theory (Deci & Ryan, 2000) to inquire about the sociological and psychological aspects of Olympic, Half-Ironman/70.3, and Ironman triathletes provided

insight into the factors that are attributed to longevity in this sport. These factors were associated with the three basic needs of Self-Determination Theory: competence, relatedness, and autonomy (Deci & Ryan, 2000). These determinants could provide guidance to future athletes looking to remain motivated throughout their athletic career. In addition, a well-defined motivational outline would be beneficial to coaches, parents, and significant others who not only work with elite athletes but with individuals who struggle with motivation and adherence in exercise and sport. This is the first study that inquired qualitatively about the motivational factors associated with the longevity of triathlon participation.

Autobiographical Statement

The researcher has raced continuously for 14 years in the sport of triathlon, the first five years as an All-American amateur, and the last nine professionally. My goal of competing in the Olympics began at age 12. When the sport of triathlon was introduced in the 2000 Olympic Games, I knew that I would be there to compete. After numerous long and intense training days, months, and years, traveling around the world and living out of suitcases, paying for entry fees, airline tickets and bike fees with money I did not have, even borrowing money from friends to make it home to the United States, I finally qualified for the 2004 United States Olympic Team Trials. Although I did not make the Olympic Team in 2004, my plan was to begin the rigorous training again in hopes of qualifying for the 2008 Olympic Games. Unfortunately, every year since 2004, the motivation I once had to train, travel, and compete at such an intense level slowly diminished until I no longer had the motivation or desire to train. Inquiring, examining,

and understanding how the women I used to compete with continue to remain motivated year after year will be beneficial not only to other elite female triathletes, but to women who engage in sport at any level of competition as well as coaches and others who work with athletes.

Limitations

The possible limitations of this study include

1. Memory recall for athletes could influence information.
2. Training and racing schedules may limit availability to participate in the interview(s).
3. The small sample size may limit the generalizability of the findings.

Delimitations

This study was delimited to

1. Women over the age of 18.
2. Those who have competed in triathlon for minimum of 8 years.
3. Those who have competed in Olympic distance, Half-Ironman/70.3, and/or Ironman triathlons.

Description of Terms

The following terms will be utilized in the current study:

1. Autonomous Motivation: Behaving with a full sense of free will (Deci & Ryan, 2008).
2. Autonomy: Having free choice over one's actions (Kilpatrick, Hebert, & Jacobson, 2002).

3. Basic Needs Theory: A mini-theory of SDT that states that there are universal needs and the degree to which these needs are satisfied will have important implications as they relate to psychological functioning and well-being (Weiss & Amorose, 2008).
4. Causality Orientation Theory (COT): A mini-theory of SDT that focuses on the relatively stable individual differences in people's motivation orientation (Weiss & Amorose, 2008).
5. Cognitive Evaluation Theory (CET): A mini-theory of SDT which explains motivation by examining the social context in which people place themselves (Weiss & Amorose, 2008)
6. Competence: Having a sense of self-efficacy and mastery (Kilpatrick et al., 2002).
7. Controlled Motivation: Behavior experienced through pressure toward a specific goal that is perceived by someone other than the self, externally (Deci & Ryan, 2008).
8. Elite/Professional Triathlete: An athlete who has competed in ITU Olympic, Half-Ironman, and/or Ironman distance triathlon races for a minimum of eight years.
9. Motivation: Goal directed behaviors that move people to act, think, and develop (Deci & Ryan, 2008).

10. Organismic Integration Theory (OIT): A mini-theory of SDT which states that extrinsic motivation plays a role in achieving an outcome that is more or less accomplished autonomously (Weiss & Amorose, 2008).
11. Relatedness: A connection in the social environment (Kilpatrick et al., 2002).
12. Social Determination Theory (SDT): A multidimensional theory of human motivation that suggests that humans have innate psychological needs for competence, autonomy, and relatedness (Deci & Ryan, 2000).

Review of Literature

The purpose of this study was to examine qualitatively the motivational factors of elite female triathletes in order to better understand how they pursued intense training and competition schedules during their triathlon careers. This chapter reviews Self-Determination Theory (SDT), triathlon-specific literature, motivation of elite athletes, and athlete engagement in maintaining motivation.

Self-Determination Theory

Motivational theorists suggest that people commence and persist with a behavior because they believe that the behavior will direct them to desired goals (Deci & Ryan, 2000). The multidimensional theoretic framework of Self-Determination Theory has gained prominence in the sport and exercise field as a means of understanding human motivation (Chantal et al., 1996; Hagger & Chatzisarantis, 2007; Kilpatrick et al., 2002; Markland, 1999; Vansteenkiste et al., 2004; Vlachopoulos et al., 2000; Tsorbatzoudis et al., 2006). Self-Determination Theory suggests that there are distinct types of motivation, namely autonomous and controlled (Deci & Ryan, 2008). Autonomous motivation is

defined as “behaving with a full sense of volition” (Deci & Ryan, 2008, p.14).

Controlled motivational behavior is experienced through pressure toward a specific goal that is perceived by someone other than the self (Deci & Ryan, 2008). The type of motivation is deemed more important than the amount in the prediction of motivational outcomes.

Self-Determination Theory suggests that people are naturally self-motivated, curious, active, and interested in pursuing activities that are enjoyable. The theory also suggests that people can be on the opposite side of the spectrum, “alienated and mechanized or passive and disaffected” (Deci & Ryan, 2008, p. 14). The theory takes into account not only a person’s natural desire to be active but also the social environments that support or negate his or her efforts. Self-Determination Theory proposes that “all humans have a need to feel competent, autonomous and related to others” (Deci & Ryan, 2008, p. 15). Competence is described as having a sense of self-efficacy and mastery (Kilpatrick et al., 2002). Autonomy is defined as having free choice over one’s actions (Kilpatrick et al., 2002). Relatedness refers to a connection in the social environment (Kilpatrick et al., 2002). Social environments that assist in satisfying the three basic needs will promote additional motivation, support people’s natural drive for activity, and “yield positive psychological, developmental, and behavioral outcomes” (Deci & Ryan, 2008, p. 15).

Self-Determination Theory is comprised of four mini-theories that explain motivation in terms of psychological needs, situational contexts, and environmental circumstances (Hagger & Chatzisarantis, 2007). The first, Cognitive Evaluation Theory

(CET), was developed by Deci and Ryan to explain motivation by examining the effects of the social context in which people place themselves. CET states that any social context will enhance or diminish a person's need for competence or autonomy and will affect intrinsic motivation. Social contexts can be controlling or informational and can influence intrinsic motivation (Deci & Ryan, 2008). Events are capable of being controlling when the behavior is considered to be outside of one's control, whereas events that promote freedom of choice behaviors promote autonomy and eventually intrinsic motivation (Weiss & Amorose, 2008). The need for competence relates to the informational aspect of an event (Deci & Ryan, 2000). Positive information about a person's ability will influence and support intrinsic motivation (Deci & Ryan, 2000). If negative information is experienced regarding competence, the individual's perceived confidence will tend to decrease which leads to a behavior that is less intrinsically motivated (Deci & Ryan, 2008; Weiss & Amorose, 2008). The influence of intrapersonal or social-contextual events is a major component of CET. Intrinsic motivation will be enhanced or thwarted depending on the meaning an individual attaches to an event (Weiss & Amorose, 2008).

The second mini-theory, Organismic Integration Theory (OIT), states that extrinsic motivation plays a role in achieving an outcome that is more or less accomplished autonomously (Weiss & Amorose, 2008). Motivation in SDT lies on a continuum from amotivation to intrinsic motivation with four external motivation regulators comprised in the middle (Deci & Ryan, 2008). Intrinsic motivation is thought to be the most desired state as it involves doing an activity for the enjoyment and

satisfaction of participating in the activity and not for any external reason. Extrinsically motivated behaviors are those that are accomplished to obtain a tangible reward or to avoid punishment (Deci & Ryan, 2008). The four types of external motivation, from least autonomous to most autonomous are: external regulation, introjected regulation, identified regulation, and integrated regulation (Deci & Ryan, 2008). External regulation is characterized by behaviors that are performed for extrinsic reasons such as fame, money, fear, or rewards. The next three regulations are considered to be internalized whereby the individual acknowledges and integrates the behavior into their sense of self (Deci & Ryan, 2008). The least effective regulation is introjection. Individuals in this state take in the external demand but they do not fully accept it as their own (Deci & Ryan, 2000). The individual tends to feel a lack of ownership to the demand and allows it to control and pressure them. Identification is the second type of external regulation and involves individuals accepting a behavior as their own (Deci & Ryan, 2008). This is an autonomous form of motivation, but because the behavior is motivated by personal outcomes, it is considered external (Hagger & Chatzisarantis, 2008). The third type of internalization is integration, whereby the individual has succeeded in accepting the behavior into their true self. This is the fullest type of internalization and is the means through which external motivations become self-determined (Deci & Ryan, 2008).

The third mini-theory, Causality Orientation Theory (COT) focuses on the relatively stable individual differences in people's motivational orientation. The three causality orientations are autonomous, controlled and impersonal (Weiss & Amorose, 2008). These three orientations are believed to be developed over time as a function of

one's interaction with the social world and exist in some degree in everyone (Weiss & Amorose, 2008). People who ascribe to the autonomous orientation are self-directed, seek activities that are challenging and take responsibility for their behavior. Other-directed behavior or self-prescribed pressures describe controlled orientations. People in this category focus on what others want for them instead of what they want, cherish rewards and have high ego involvement. External motivations are what drive these individuals. An impersonal orientation is a tendency to lack the intention to act, amotivation. These individuals have feelings of helplessness and incompetence (Weiss & Amorose, 2008).

The final mini-theory is Basic Needs Theory. The need for competence, autonomy and relatedness are assumed to be universal needs and the satisfaction of these needs relate to psychological functioning and well-being (Weiss & Amorose, 2008). How these needs are satisfied or unsatisfied will be different across all people, times, and places. The degree to which these needs are supported or thwarted will have important implications on motivation (Deci & Ryan, 2000).

The four mini-theories of SDT provide a motivational framework of human behavior. Motives that underlie an individual's actions, social-contextual and interpersonal events, the basic needs of autonomy, competence and relatedness all contribute to SDT in influencing motivation and well-being. Self-determination theory describes motivation from a multidimensional perspective making it an appealing theory to utilize in sport (Mallet & Hanrahan, 2004; Vlachopoulos et al., 2000; Vansteenkiste et al., 2004).

Research Utilizing Self-Determination Theory

Vansteenkiste et al. (2004) examined antecedents that promoted motivation, persistence and performance using SDT and Future Time Perspective Theory (FTPT). The goal of the study was to identify social factors that led to students' engagement in exercise. Participants were 501 female and male physical education students in 10th-12th grade. Students were taught a few exercises from an Asian sport, Tae-bo, during two separate PE classes. Participants were randomly placed in one of four groups: the future intrinsic goal condition, future extrinsic goal condition, future content-free goal condition or the no future-goal control group. Two factors, the type of goal-framing and the type of social context, were manipulated. At the end of the first class, participants filled out questionnaires that determined their degree of choice in this activity, their degree of self-determined motivation for participating and how much effort they expended during their class. After the second class, three to five days later, all participants were tested on the exercises. Findings suggest that PE teachers who frame benefits of exercise using future intrinsic conditions may promote students' motivation, performance and persistence whereas using future extrinsic may undermine student's persistence and performance. The research found that boys and girls did not differ from each other on any of the outcome variables. SDT has stated that social contexts that are autonomy-supported lead to enhanced performance as well as exercise persistence benefits. Although this study was brief in duration, positive effects of an autonomy-supportive context presented itself. This study showed that framing goals in a future intrinsic and autonomy-supportive

context, positive outcomes such as increases in exercise activity, performance and long-term persistence were achieved.

Standage, Sebire, and Loney (2008) examined motivation of moderate-intensity exercise behavior using the framework of SDT. Fifty-five male and female British university participants with an average age of 22 years participated in the study. Participants completed the Behavioral Regulation in Exercise Questionnaire (Mullan, Markland, & Ingledew, 1997), which assesses motivation for exercise. In addition anthropometric measurements were taken. Exercise behavior was recorded using the Actiheart (AHR) device, which collects heart rate and accelerometry data. Participants wore the AHR for eight days. Researchers were interested in participants' time spent during moderate-intensity exercise in more than 10 minutes, more than 20 minutes, and more than 30 minutes that contributed to meeting the American College of Sports Medicine/American Heart Association guidelines. Standage et al. (2008) sought to explore exercise behavior in a real world setting by objectively assessing energy expenditure. Information on participants' behavioral persistence, intensity and frequency of exercise were evaluated. Results showed that autonomous exercise motivation was positively related to all three bouts of moderate-intensity exercise. In addition, females were less likely to participate in exercise behavior that met ACSM/AHA guidelines than males. According to SDT, individuals who participate in exercise for autonomous reasons persist longer in the behavior than those who are motivated by extrinsic reasons.

Vlachopoulos et al. (2000) identified individuals who differed in their motives for participating in sports and examined how these motivation profiles related to positive and

negative motivation consequences using SDT. The authors sought to gain insight about which profile is associated with the most desirable consequences. Two groups were hypothesized to exist with regard to intrinsic and extrinsic motivation. The first group consisted of participants who scored high on self-determined forms of motivation and low on non self-determined motivation. The second group was distinguished by those who scored high on both self-determined and non-self-determined motivations. Sample 1 included 590 female and male participants from sports clubs, community centers and sports teams were included in the study. Ages ranged from 18 to 67 years. Participants' years of experience in their sport ranged from one to 50 years. A wide variety of sports were represented including track and field, triathlon, swimming and cycling. Sample 2 comprised 555 female and male participants ranging in age from 18 to 30 with experience in their sport from one to 57 years. Three inventories were used to assess participants motivation, the Sport Motivation Scale was used to evaluate seven forms of motivation based on SDT; the Intrinsic Motivation Inventory assessed the degree to which the participants enjoyed their sport participation; the Positive and Negative Affect Schedule was used to determine affective responses during training. Results showed that the two hypothesized groups did exist. Participants who were in the self-determined and non-self-determined cluster reported increased effort, enjoyment, stronger intentions to continue participation and greater satisfaction compared to the group characterized by self-determined motivation only. Results also show that motivation profiles were not associated with gender but with the level of sport involvement. Further research should examine motivation and the participants' level of sport.

These studies showed that athletes who participated in exercise for autonomous reasons and those who were characterized as both self-determined and non-self determined had stronger intentions to persist at their sport. The study by Vlachopoulos et al. (2000) was the only study that incorporated participants from triathlon. However, the relative newness of the sport of triathlon lends itself to few psychological inquiries.

Triathlon Participation

Research in this sport has concentrated on the physiological aspects of multisport (Galy et al., 2008; Neubauer, König, Kern, Nics, & Wagner, 2008; Park, Park, Kim, & Kwak, 2008). Three studies pertain specifically to the psychological aspect of triathlon. The first by Furst et al. (1993) discussed motivation of athletes with disabilities to compete in triathlons. Twenty-two wheelchair competitors ranging in age from 14 to 56 years for men and 26 to 45 years for women completed a questionnaire comprised of open and closed questions that was created by the authors to ascertain information on why they competed in the sport of triathlon. All participants had spinal cord injuries. Results from the study show that 91% were actively involved in sport before their injuries (Furst et al., 1993). Other people with disabilities, prior experience in sport and/or exercise, friends, doctors/therapists and health concerns were the main motivators as to what encouraged these athletes to get involved in exercise after their injury. Competitors recorded that fun, physical fitness/health, competition and socializing were the top reason for participation (Furst et al., 1993). Motives for participating in a triathlon are similar to cycling and running (LaChausse, 2006; Johnsgard, 1985a; Masters & Ogles, 1995).

Burke and Jin (1996) looked at predicting performance from a triathlon event. The researchers measured physiological, psychological and performance history information to try to predict total performance time in an Ironman triathlon. Participants were three females and 37 males who had been training for at least eight months prior to the study. Because of the small number of female participants, their data was included with the males. Participants were asked to estimate their finish time in each discipline of the Australian Ironman. The psychological protocol included the distribution of several inventories. These were the CSAI-2, STAI Form Y, Locus of Control, SSCI and TSCI. The psychological factors that predicted finishing time included performance history and self-efficacy. Psychological factors accounted for 80% of the performance variation while physiological factors accounted for 52% (Burke & Jin, 1996), suggesting that psychological factors play a large role in endurance events, specifically in the sport of triathlon.

Bell and Howe (1988) examined motivations to compete, mood disturbances and mood state profiles of 160 male and 89 female triathletes. The skill level of the athletes was not mentioned. Athletes completed two questionnaires, the Profile of Mood States (POMS) and a motivational rating scale (McNair, Lorr, & Droppleman, 1971). The 6-item motivational rating scale asked participants to rank their reasons for participating from highest to lowest on a continuum of 1-6. Reasons included to compete with oneself, compete with others, improve fitness and feelings of enjoyment (Bell & Howe, 1988). Athletes completed both questionnaires prior to the event. Twenty males and 20 females were then randomly selected and asked to complete the POMS two months later. Results

from the initial POMS questionnaire revealed no significant difference between genders. Results from the motivational rating scale determined the primary response for competing in triathlons for males was to compete with oneself, whereas the primary response for females was to improve fitness. Results from the POMS two months after the event showed that males were more tense and less depressed, angered and confused and females showed lower psychic vigor and higher confusion as compared to their first POMS questionnaire taken 24 hours after their competition. This would suggest that the athlete's triathlon experience influenced their mood. The difference in mood states post competition and two months after lend support to the notion that mood states may be temporarily altered (Bell & Howe, 1988). With regard to motivations, participants indicated that a desire to compete with oneself, improve fitness and experience enjoyment ranked highest (Bell & Howe, 1988).

There have been physiological studies on the sport of triathlon; however, few studies have looked at the psychological aspect of triathlon. Those that have focused on psychological aspects have explored why athletes participate in triathlon, their predictions of finishing times, and their mood states. Other endurance sports such as running and cycling have been around longer and may share common psychological motives with the endurance sport of triathlon.

Motivation of Endurance Athletes

LaChausse (2006) examined motives for participating in cycling between competitive cyclists and non-competitive cyclists. Participants included 944 male and 295 female adult cyclists. Athletes completed a modified version of the Motivations of

Marathoners Scales (MOMS; Masters, Ogles, & Jolton, 1993) as well as information indicating if they were competitive, non-competitive, or leisure cyclists. Results showed that males were more likely than females to support competition as a reason for involvement in the sport, whereas females endorsed weight concerns as their main priority for participating (LaChausse, 2006). In addition those athletes who self-reported being competitive were more likely than non-competitive cyclists to report goal achievement, competition, and recognition as motives for cycling.

Masters and Ogles (1995) examined the motivations of marathon runners with varying degrees of experience. Marathon runners, unlike less serious athletes, must endure challenging experiences during training and competing, thus providing examples of exercise motivation and perseverance. According to Masters and Ogles (1995), factors that motivate an individual to begin an activity may be different from factors that motivate them to continue in the activity. In addition, motivational factors may differ between athletes of varying levels of experience. Participants were 472 marathon runners (20% female) who were categorized as rookies (first marathon), mid-level (second or third marathon), or veterans (more than three marathons). The rookies ranged in age from 16 to 60 years and trained an average of 44 miles per week. The mid-level runners ranged in age from 18-61 years and trained an average of 45 miles per week. The third category, veteran marathon runners were aged 20-63 years with an average of 51 miles of running per week. Participants completed the Motivations for Marathoners Scale (MOMS). Results showed that marathoners of different experience levels have varying motives for participation. This study did not separate results by gender only by

experience levels. The veteran group embraced a marathon runner identity that included competitive and health reasons. These athletes were motivated more by social and competitive incentives than by personal achievements. The time and effort that is needed by these veteran athletes to train and compete is enhanced by and may require social support and reinforcement. This is evidenced in part by the number of other marathon runners that the veterans personally knew. The mid-level athletes were primarily motivated by achieving personal performances and psychological benefits and secondary by the social identity of marathon runner. The rookie marathoners did not associate with a marathon identity and seemed less concerned with performance improvement. Health, weight, and personal-goal attainment were motivators for first time marathon runners.

In contrast to Masters and Ogles (1995), Johnsgard (1985b) findings suggested that motivations to begin and continue running are similar. The Runner Motivation Test (RMT; Johnsgard, 1980) was taken by 574 males and 149 female long distance runners. Male and female participants' average ages were 38 and 34 years respectively. Average running miles for men were 40.6 and 33.6 miles for women. Years running for male and female runners were 5.6 and 3.6, respectively. Results from this paired-comparison instrument suggested that both sexes shared similar motives for running. These motives included physical fitness, self-concept, and mood control.

A follow-up study by Johnsgard (1985b) suggested that motivation may vary by experience. Older runners appeared less competitive while runners of other ages may begin running for any numbers of reasons, but discover additional rewards or motives as they continue to pursue their sport. Participants were 149 male and 31 female runners

with an average age of 56.3 and 52.5 years and 26 and 24 weekly running miles respectively. The Test of Endurance Athlete Motives, a modification of the RMT, was used. This instrument consisted of 10 motives and 45 forced choices that participants must select. In accordance with Johnsgard's previous research, some motives are more important than others and the relative strength of these motives is similar for both males and females. Both men and women initiated running for fitness and weight control. However, these initial reasons were related to current running motives that are situated around tension reduction, personal identity and physical fitness.

These studies showed that female and male amateur competitive athletes endorsed goal achievements, competition and recognition as motives to participate. Female and male athletes who had more experience in their sport are motivated by social and competitive reasons more so than athletes with less experience. Research examining motives to initiate an activity and motives to sustain an activity were inconclusive. If experience level plays a role in motivation to participate then elite athletes could be motivated by extrinsic determinants such as competition and social recognition.

Motivation of Elite Athletes

Mallett and Hanrahan (2004) interviewed 10 men and women elite track and field athletes between the ages of 22 and 34 who had been competing on the international stage for an average of 7.7 years. This study used SDT, the hierarchical model of motivation, and the achievement goal theory to discuss their findings. The three general themes that developed from this qualitative study were personal goals and achievement, strong self-belief and life revolving around track and field. Within the theme of personal

goals and achievement, the athletes were motivated by both task and ego goals, were both intrinsically and extrinsically motivated, had high perceptions of competence and wanted to be socially recognized (Mallett & Hanrahan, 2004). It is interesting to note that extrinsic rewards such as trophies and money were “not perceived to be controlling, but as influencing motivation through its impact on perceptions of competence” (Mallett & Hanrahan, 2004, p. 192). The theme of strong self-belief, where athletes work to “master” their environment, was consistent with all three theories, (Mallett & Hanrahan, 2004, p. 196). The third theme “life revolves around track and field” takes note of the fact that other alternatives were not as important as training and competing for the athletes’ specific events. The researchers concluded that the accomplishment of goals enhances the perception of competence, which positively influences self-determined motivation. These general themes are consistent with other research in motivations of elite athletes (Durand-Bush & Salmela, 2002; LaChausse, 2006; Legg et al., 2005). The researchers did not discuss whether there were differences with regard to gender.

Durand-Bush and Salmela (2002) employed qualitative research methods to analyze factors that contributed to the development and maintenance of elite team and individual sport athletes. Four male and six female participants ranged in age from 19 through 36. Results, which did not discuss if there were gender differences, showed that athletes went through four stages during their athletic career: sampling, specializing, investment and maintenance. Although this study looked at the phases of athletic progress during the span of time the athlete competed, future research should delve

deeper into how elite athletes maintain their intense training and competition schedules (Durand-Bush & Salmela, 2002).

Other studies have looked at the characteristics of elite athletes (Legg et al., 2005). This study looked at characteristics of 12 New Zealand Olympic and World Champion sailors. The sailors' gender was not mentioned. Ten themes were formed from a focus group discussion to include information on background, breakthrough experiences, personality, motivation, teamwork, support, preparation, cognitive style, sportsmanship, and coping behavior. With regard to motivation, most of the sailors had a high level of intrinsic motivation. It was the opinion of the researchers that these sailors also had a high level of extrinsic motivation as winning and beating others were also mentioned.

Chantal et al. (1996) investigated sport motivation in relation to sport performance with 35 female and 63 male Bulgarian elite athletes. The average ages of athletes were 19 and 20 years, respectively. Sport disciplines included canoe, biathlon, figure-skating, boxing, tennis and skiing. Participants completed the Bulgarian version of the Sport Motivation Scale (Pelletier et al., 1995) which is based on the principles of SDT. It was hypothesized that the best performing athletes would show lower levels of intrinsic motivation and higher levels of non self-determined extrinsic motivation and amotivation than less successful athletes. Results showed that in comparison with less successful athletes, the top performing athletes exhibited increased levels of non-self determined forms of motivation (Chantal et al., 1996). Another purpose of the investigation was to determine if there were gender differences in elite athletes'

motivation. Results indicated that women exhibited increased levels of intrinsic motivation than the men in this study. However, there were no significant gender differences found for self-determined extrinsic motivation.

Beaudoin (2006) examined the competitive orientations and sport motivation of 118 women professional football players. The athletes represented teams from the National Women's Football Association, Women's Professional Football League, and the Independent Women's Football League. Participants ranged in age from 18 to 45. Research was conducted via an Internet survey. Participants completed the Sport Orientation Questionnaire (Gill & Deeter, 1988) and the Sport Motivation Scale (Pelletier et al., 1995). Athletes in this study scored high on competitiveness, which most differentiates athletes from non-athletes. Scores on the Sport Motivation Scale were greater for intrinsic motivation than extrinsic motivation. In addition, competitiveness was positively related to intrinsic motivation. There was a significant negative association between extrinsic motivation-identification and age. In this study, athletes who were older had more difficulty identifying with their sport; however they were nonetheless intrinsically motivated.

The reviewed psychological studies showed that elite athletes were both intrinsically and extrinsically motivated. Compared to amateur athletes, elites had an increased perception of competence and strived to master their environment. It is interesting to note that both amateur and elite athletes wanted to be socially recognized. Feelings of competence and relatedness were components in the Basic Needs Theory of SDT. Both of these factors were important regardless of experience level. According to

SDT (Deci & Ryan, 2008) satisfaction of the three basic needs of autonomy, relatedness, and competence will have an effect on intrinsic motivation, psychological well-being, and greater persistence.

Perseverance and Athlete Engagement

According to Lonsdale, Hodge, and Raedeke (2007) athlete engagement could be relevant to elite athletes who invest a tremendous amount of effort and time in order to achieve success at the highest levels of sport. The researchers employed a qualitative design to inquire whether or not elite athletes experience engagement and if so, to identify core dimensions of athlete engagement. Fifteen athletes from the New Zealand Academy of Sport volunteered. Eight females and seven males aged 18 to 45 who competed in team and individual sports such as cycling, track and field, and triathlon participated in the study.

The concept of athlete engagement is described as “a positive, fulfilling, sport related state of mind. Rather than a specific momentary feeling, engagement refers to a more persistent period of time” (Lonsdale et al., 2007, p. 457). During the interview procedure, each athlete was asked to recall an engagement experience and to describe the thoughts, feelings and emotions that they experienced as well as how long the engagement period lasted. Duration of athlete engagement ranged from three weeks to 36 months. The majority of athletes identified three key aspects: confidence, dedication and vigor. Confidence was defined as a “belief in one’s ability to attain a high level of performance and achieve desired goal” (Lonsdale et al., 2007, p. 464). Dedication was defined as “a desire to invest effort and time towards achieving goals one views as

important” (Lonsdale et al., 2007, p. 465). Vigor was characterized as “physical, mental and emotional energy or liveliness” (Lonsdale et al., 2007, p. 465). The researcher’s definition of athlete engagement as it refers to elite athletes is “a persistent, positive, cognitive-affective experience in sport that is characterized by confidence, dedication and vigor” (Lonsdale et al., 2007, p. 464).

Research by Tenenbaum, Lidor, Lavyan, Morrow, Tonnel, and Gershgoren (2005) investigated the major determinants of perseverance. Goal orientation and self-efficacy in addition to task-specific psychological components such as readiness to expend effort, determination, and commitment were central elements of perseverance that made demands on the athlete (Tenenbaum et al., 2005). Tenenbaum et al., (2005) hypothesized that task orientation, more than ego orientation, would be correlated with physical effort and perseverance in conditions of self-accomplishment. In addition, ego orientation would be present during competitive circumstances.

The task-specific components of commitment and determination were defined as the individual’s want and dedication to persist in a task while experiencing effort related pain and discomfort. The researchers conducted three studies that examined the effects of achievement goal orientation, ability perception and situational task-specific motivational components on perseverance in difficult running conditions. Two similar laboratory studies using participants of similar age from two different cultures were carried out as well as a third study to investigate if similar results would be present under real life situations. The two laboratory studies used VO_{2max} as the standard for physical effort expenditure. The third study did not utilize the VO_{2max} test.

Fifteen Australian men aged 18 to 35 participated in study one. These men ran fewer than three times per week (2-10 km/run) and were all above moderate levels of aerobic capacity. Participants completed the Physical Activity Readiness Questionnaire, the General Health and Life Style Questionnaire, the Task and Ego Orientation in Sport Questionnaire and the Physical Self-Efficacy Scale. After the initial VO_{2max} test, the volunteers were requested to run at 90% of their VO_{2max} for as long as they could once per week for four weeks. Prior to each run, athletes indicated their responses for the following confidence questions, “how confident are you in running as much as you can and adhering to this task without giving up at an earlier point?” (Tenenbaum et al., 2005, p. 144). This question was meant to examine the extent to which the participant would persevere in running. Responses ranged from zero (not at all confident) to 100 (very, very confident). Results of this first study suggested that the strongest predictors of running endurance perseverance were perceptions of confidence and readiness to invest effort. Commitment, determinations, perceived ability and competence were also important in perseverance.

Study two was comprised of 15 Israeli men aged 18 to 25 years who were active but not competitive in recreational running, swimming, and yoga. Their VO_{2max} scores showed they had good aerobic power. The same questionnaires were administered to this group as well as the same procedures. Similar to study one, the task-specific variables of perceived confidence and readiness to invest effort were the strongest characteristics. Commitment, determination, perceived ability and competence were also significant.

Study three included 25 Israeli university students aged 20 to 26 years. Participants were active individuals who took part in a variety of group and solo recreational activities 1-3 times per week. Their VO_{2max} was not taken. The same questionnaires were completed, however adjustments were made to the task-specific questions during the field run. Baseline information was gathered during three 2.2 km field runs. During the next eight weeks, athletes would run the same course, once per week, under varying conditions: four times against a partner of similar baseline times and four times alone. Tenenbaum et al. (2005) believed that ego-orientation would be higher during the competitive runs. Results show that neither task nor ego orientation were significant single predictors of running performance. Similar to the laboratory studies, perception of confidence, perceived ability, and competence were the strongest indicators of running performance. All three studies supported the notion that one's own perceived physical ability as well as task-specific psychological components were strong indicators of motivation during demanding physical effort perseverance.

Summary of Literature Review

The review of literature suggested that autonomy-supported social contexts lead to exercise motivation and persistence. Satisfaction of the three basic needs of autonomy, relatedness, and competence foster intrinsic motivation and adherence. For athletes varying in skill level, the initial motives to participate include fun, physical fitness/health and competition with oneself. However, motives may have a tendency to shift the longer the athlete has been participating. The motives for participation given by males and females are similar. Two studies found that intrinsic motivation were more prevalent in

females than males; however, there was no difference in extrinsic motivation. Amateur athletes tended to be intrinsically motivated whereas elite athletes encompassed both intrinsic and extrinsic motivation. Persistence in sport was characterized by intrinsic motives from both amateur and elite athletes. According to Butt (1985) once a certain skill level has been achieved, the greatest challenge is to maintain that level. In addition, amateur and elite athletes want to be socially recognized in their efforts towards relatedness. In arduous running tasks it was found that confidence and readiness to invest effort were the main determinants of physical effort persistence.

According to Mallett and Hanrahan (2004) few studies have examined the “motivational processes of elite athletes” (p. 188) and those that have, have looked at recreational, sub-elite, and youth athletes. It is clear that factors associated with the maintenance of sport and motivation should be examined further. Information gathered on this subject will help athletes, coaches, trainers and others who work with individuals who are inquiring about how to sustain motivation in athletic endeavors.

Research has used questionnaires for assessing motivation in youth (Gould et al., 1985; Klint & Weiss, 1987) and recreational athletes (LaChausse, 2006; Mallett & Hanrahan, 2004) however, capturing the in-depth and rich detail that can be ascertained through interviews is lacking (Mallett & Hanrahan, 2004). In addition, these studies have only looked at one competitive season (Weiss & Weiss, 2006) not numerous years of continuous training and competition. In terms of motivation, there has been little research conducted with elite athletes (Mallett & Hanrahan, 2004), females in particular, or their sustained determination to train and compete over many years (Durand-Bush &

Salmela, 2002; Young, Medic, & McFadden, 2008). Few qualitative studies have looked into what motivates the Olympic athlete (Durand-Bush & Salmela, 2002; Legg et al., 2005; Mallett & Hanrahan, 2004). There was a need for rich, in-depth information on elite women triathletes and the factors associated with sustaining continuous and rigorous training and competition. This review of literature summarized information pertaining to SDT, current triathlon research, and motivation research. There is clearly a need for a more involved inquiry into elite female athletes' factors of sustained motivation.

Methods

The purpose of this study was to qualitatively examine the motivational factors of elite female triathletes in order to better understand the longevity of their intense training and competition. Self-Determination Theory, a multidimensional approach to motivation, was utilized. The previous chapter reviewed the current literature on motivation. This chapter will provide information on participants, research design, instrumentation, data analysis, and trustworthiness.

Participants

Participants were eight elite female triathletes who had competed in Olympic Distance, Half-Ironman/70.3, or Ironman triathlons for a minimum of eight years (Durand-Bush & Salmela, 2002; Mallett & Hanrahan, 2004). These criteria were used to define "elite" as it pertains to this study. The Olympic distance triathlon consists of a 1.5k swim, 40k bike and 10k run (.9 mile, 24.8 mile, 6.2 miles); the Half-Ironman is comprised of a 1.2 mile swim, 56 mile bike and 13.1 mile run (1.9k, 90k, 21.1k); and the Ironman distance is a 3.86k swim, 180.2k bike and 42.2k run (2.4 mile, 112 mile, 26.2

mile). The reason behind this decision was based on athletes competing in all distances of races throughout ones career. The researcher contacted the athletes through the use of snowball sampling technique (Allison & Meyer, 1988). The researcher competed in the professional circuit, so athletes who fit the inclusion criteria were contacted for possible participation. Participants were e-mailed a formal letter of information about the study. They were informed of the purpose of the study, confidentiality of their responses and details pertaining to their voluntary involvement and that they could withdraw at any time without disapproval.

Research Design

Few studies have examined the motivational profiles of elite athletes and even fewer studies have used qualitative methods (Mallett & Hanrahan, 2004). Therefore, semi-structured, in-depth, open-ended interviews were utilized in the current study (Connaughton, Wadey, Hanton, & Jones, 2008; Durand-Bush & Salmela, 2002; Mallett & Hanrahan, 2004; Weekes & Woods, 2005). Each participant was interviewed via telephone at a time and date agreed upon by the researcher and the participant. A qualitative methodology was employed for two reasons. First, it was thought that answers from the interviews would provide an in-depth understanding of these athletes' experiences, perceptions, and feelings without the constraints of a questionnaire (Mallett & Hanrahan, 2004). Second, information on what motivates these women may not have been identified with questionnaires (Mallett & Hanrahan, 2004). Email interviews were considered. Email communication has been found to be an efficient, convenient and cost effective method of gathering data from a small network of geographically dispersed

individuals (Worth, 2008). Email interviews have been used successfully by numerous researchers (Browne, 2005; Mahtini, 2004; McCoyd & Schwaber Kerson, 2006).

Instrumentation

A semi-structured interview guide was developed by the researcher and used for each athlete but remained open for additional questions that arose. Questions included background athletic information, social support, coaching, motivation, and maintenance of training and competition. Interviews were audio taped and hand-written notes were taken. To protect participant identity, pseudonyms and identification numbers were assigned and were used in data analysis. A bracketing interview was conducted by an expert in the field of qualitative inquiry to learn and understand any personal biases the researcher had as well as note any additions or subtractions of questions that were needed prior to participant interviews.

Data Analysis

Qualitative data was transcribed verbatim from audiotapes, notes, and researchers' reflexive journal. Once transcribed, participants were given a copy to check for accuracy and make changes where necessary. As stated by Durand-Bush & Salmela (2002), "this process of member checking was an important step for establishing credibility" (p. 157). Data was coded using "meaning units" which were then sorted into specific self-determination categories (Côté, Salmela, Baria, & Russell, 1993; Weekes & Woods, 2005). Analysis continued until data became saturated and no new themes arose (Amis, 2005).

Trustworthiness

Academic rigor was established in multiple ways. First, the researcher was involved in a bracketing interview, which served to uncover personal biases as well as check to see if questions were appropriate, needed to be eliminated, or supplemented. Second, rich and detailed descriptions were utilized to provide a greater understanding of participants' motives, environment, and situations (Mallett & Hanrahan, 2004). Third, peer reviews and debriefing were conducted with an expert in qualitative research (Palmer et al., 1999; Sparkes, 1998). Fourth, transcripts were sent to participants so that they could review, certify, and/or make alterations that accurately described their thoughts, feelings, emotions, and situations. The process of member checking has been identified as an important step for establishing the credibility of a study (Amis, 2005; Durand-Bush & Salmela, 2002; Gratton & Jones, 2004). Finally, because the researcher has been involved in the sport of triathlon for more than 14 years, an understanding of the culture of triathlon and what is involved in competing as an elite athlete gives credibility to this inquiry. Notes as well as a reflexive journal were instrumental in checking and rechecking pertinent and credible information (Palmer et al., 1999).

Summary of Methods

Despite the fact that there are numerous research studies on motivation, research on motivation specifically related to the sport of triathlon and elite female athletes had yet to be examined. Utilizing the qualitative methods described gave a voice to these elite female triathletes and shed light on a relatively unknown area of motivation and triathlon. The methods described have been used in other research and were found to be valid and

trustworthy (Durand-Bush & Salmela, 2002; Mallett & Hanrahan, 2004; Weekes & Woods, 2005). The use of qualitative inquiry to delve into the phenomena of how elite female triathletes continue to pursue intense training and competition over numerous years added insight to motivational research, female athletes, and the qualitative research process (Mallett & Hanrahan, 2004).

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APPENDIX A: HUMAN SUBJECTS-INSTITUTIONAL REVIEW BOARD

APPROVAL



**SAN JOSÉ STATE
UNIVERSITY**

To: Alexis Waddel-Smith

From: Pamela Stacks, Ph.D.
Associate Vice President
Graduate Studies and Research

Office of the Provost
Associate Vice President
Graduate Studies & Research
One Washington Square
San José, California 95192-0025
Voice: 408-924-2427
Fax: 408-924-2612
gradestudies@sjsu.edu
www.sjsu.edu

Date: November 16, 2009

The Human Subjects-Institutional Review Board has approved your request to use human subjects in the study entitled:

“A Qualitative Analysis of Motivation of Elite Female Triathletes”

This approval is contingent upon the subjects participating in your research project being appropriately protected from risk. This includes the protection of the anonymity of the subjects' identity when they participate in your research project, and with regard to all data that may be collected from the subjects. The approval includes continued monitoring of your research by the Board to assure that the subjects are being adequately and properly protected from such risks. If at any time a subject becomes injured or complains of injury, you must notify Dr. Pamela Stacks, Ph.D. immediately. Injury includes but is not limited to bodily harm, psychological trauma, and release of potentially damaging personal information. This approval for the human subject's portion of your project is in effect for one year, and data collection beyond November 16, 2010 requires an extension request.

Please also be advised that all subjects need to be fully informed and aware that their participation in your research project is voluntary, and that he or she may withdraw from the project at any time. Further, a subject's participation, refusal to participate, or withdrawal will not affect any services that the subject is receiving or will receive at the institution in which the research is being conducted.

If you have any questions, please contact me at (408) 924-2427.

Protocol #S0904132

cc: Tamar Semerjian 0054

The California State University:
Chancellor's Office
Bakersfield, Channel Islands, Chico, Dominguez Hills,
East Bay, Fresno, Fullerton, Humboldt, Long Beach, Los
Angeles, Maritime Academy, Monterey Bay, North-
ridge, Pomona, Sacramento, San Bernardino,
San Diego, San Francisco, San José, San Leo Obispo,
San Marcos, Sonoma, Stanislaus

APPENDIX B: AGREEMENT TO PARTICIPATE IN RESEARCH

Responsible Researcher: Alexis Waddel-Smith, M.A Candidate, Department of Kinesiology, San José State University

Title of Protocol: A Qualitative Analysis of Motivation of Elite Female Triathletes

1. You have been asked to participate in a research study investigating what factors are involved in the motivation of elite female triathletes to persist in this sport.
2. You will be asked to answer semi-structured open-ended questions and to describe what motivates you to continuing competing. Interviews will take place in person, via telephone or by email. The location will be decided between researcher and participant.
3. Potential risks associated with this study may include some psychological discomfort as the participants reflect on their experiences in the sport.
4. Potential benefits of participating in this study may include an enjoyment in sharing motivational experiences of the athlete's triathlon career, personally reflecting on their motivations and discovering new insights about themselves that they had not realized prior to discussing their motivations.
5. Although the results of this study may be published, no information that could identify you will be included. You will be referred to only by a pseudonym of your choice.
6. There is no compensation for participating in this study.
7. Questions about this research may be addressed to Alexis Waddel-Smith at (831) 869-5848 or Dr. Tamar Semerjian, Thesis Chair at (408) 924-3069. Complaints about the research may be presented to Dr. Shirley Reekie, Chair of the Department of Kinesiology, at (408) 924-3020. Questions about a research subjects' rights, or research-related injury may be presented to Pamela Stacks, Ph.D., Associate Vice President, Graduate Studies and Research, at (408) 924-2427.
8. No service of any kind, to which you are otherwise entitled, will be lost or jeopardized if you choose not to participate in the study.
9. Your consent is being given voluntarily. You may refuse to participate in the entire study or in any part of the study. You have the right to not answer questions you do not wish to answer. If you decide to participate in the study, you are free to withdraw at any time without any negative effect on your relations with San José State University.
10. At the time that you sign this consent form, you will receive a copy of it for your records, signed and dated by the researcher.

(continued)

APPENDIX C: EXAMPLE OF INTERVIEW GUIDE

1. Where are you from and where do you currently live?
2. How old are you?
3. Are you married?
4. Do you have kids?
5. Will you name any titles that you have won, races that were significant for you, awards, accolades, etc?
6. Will you be competing this year as a professional or are you retired from racing professionally?
7. How did you get involved in triathlon?
8. How old were you when you began competing in triathlon?
9. What motivated you to start competing in triathlons?
10. Describe your level of interest in triathlon when you first began competing in triathlon?
11. How many years have you been competing in the sport? How many years have you competed as a professional?
12. What is your preferred triathlon distance?
13. Have you competed in both ITU Olympic distance and Ironman distance races? Please explain their similarities/differences. Is there a psychological difference to your motivation to train and compete for each distance? Please explain.
14. How did you know that you were competent in the sport? As an amateur? As a professional? (Competent)
15. How do you define success in triathlon? What has given you the confidence to be successful in triathlon? Where did you get the pieces of information to tell you that you were good? (Competent)
16. Since the beginning of your professional career, has your level of motivation changed?

(continued)

17. Have you felt pressure to continue training/racing? Can you provide an example?
(Autonomy)
18. Do/did you have a say in your training & racing schedule? Please explain.
(Autonomy)
19. Describe your experience with other athletes (camaraderie) during training/racing?
Did you get along with the other women you raced against? Why/why not?
(Relatedness)
20. Did/do you feel connected to the people you race/train with? Why? Would you
provide an example? (Relatedness)
21. Do you believe that having a bond with other athletes motivated you to continue in
the sport? Do you believe that having friendships within the sport increased your
motivation to continue racing at the elite level? Please explain and provide examples?
(Relatedness)
22. When things weren't going your way, did you ever question why you compete at the
elite level? Please explain why you chose to persist?
23. Has there ever been a time when you felt like quitting the sport? Moving on to
something new? Would you explain how you were motivated to continue with the sport?
24. To what/whom do you attribute your longevity in the sport? Will you explain and
provide examples?
25. Have you had any barriers that you had to over-come (physically, mentally,
emotionally, etc.)? If so, how did you overcome these barriers?
26. Describe your social support. Who are the people you have been supporting you in
your triathlon career? Would you describe in what way(s) they support you?
Emotionally, financially, etc?
27. What involvement do you think you will have in triathlon in the next 10 years?
(Relatedness)
28. Is there anything you would like to add? Anything you wish I would have asked in
regard to motivation and triathlon?