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# Dynamics of self-determined motivation, passion, and athlete satisfaction over one competitive season in intercollegiate athletics

Roy Kaipō McGuire

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UNIVERSITY OF NORTHERN COLORADO

Greeley, CO

The Graduate School

THE DYNAMICS OF SELF-DETERMINED MOTIVATION, PASSION, AND  
ATHLETE SATISFACTION OVER ONE COMPETITIVE SEASON IN  
INTERCOLLEGIATE ATHLETES

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

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College of Natural and Health Sciences  
School of Sport and Exercise Science  
Social Psychology of Sport and  
Physical Activity

June 2013

This Dissertation by: Roy Kaipo McGuire

Entitled: *The Dynamics of Self-Determined Motivation, Passion, and Athlete Satisfaction Over One Competitive Season in Intercollegiate Athletes*

has been approved as meeting the requirement for the Degree of Doctor of Philosophy in College of Natural and health Sciences in School of Sport and Exercise Science, Program of Social Psychology of Sport and Physical Activity.

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## ABSTRACT

McGuire, Roy. *The Dynamics of Self-Determined Motivation, Passion, and Athlete Satisfaction Over One Competitive Season in Intercollegiate Athletes*. Published Doctor of Philosophy dissertation, University of Northern Colorado, 2013.

The purpose of this study was to investigate the patterns of relationships among motivation, passion, and satisfaction over one competitive season in Division I athletes. Self-determination theory was the theoretical framework for this study. A mixed-methods approach was used to capture the athletes' sport experience. A questionnaire was completed by athletes from a Division I women's soccer team (31 females) and men's football team (87 males) three times over the course of their competitive seasons. Two athletes from each team were selected for follow-up interviews based on their responses to gather additional information not obtained from the questionnaire data. A RM ANOVA was used to assess change over time in the motivation variables. Amotivation was found to increase over time for the women's soccer team,  $F(2, 20) = 4.09, p = .03$ , partial eta squared = .29, and extrinsic motivation was also found to increase for the men's football team,  $F(2, 63) = 8.93, p < .0001$ , partial eta squared = .22. Correlational analyses were used to investigate the relationships among the variables of interest. For both samples, higher levels of satisfaction were present when higher levels of harmonious passion (HP) and intrinsic motivation were present coupled with lower levels of amotivation. Hierarchical cluster analysis was employed to identify motivational profiles that emerged. Four distinct profiles emerged with the women's

soccer team: A *Highly Motivated* cluster characterized by high levels of intrinsic motivation and low levels of amotivation; a *Low Motivation* cluster characterized with low levels of extrinsic motivation and intrinsic motivation; an *Unmotivated* cluster characterized by high levels of amotivation; and an *Extrinsically Motivated/Obsessive* cluster characterized by high levels of extrinsic motivation and obsessive passion (OP). The football sample was classified into three different profiles (top quartile, middle two quartiles, bottom quartile) based solely on their satisfaction levels. The top quartile group was characterized by high harmonious passion and intrinsic motivation and low amotivation. The middle quartiles group was characterized by close to the mean values for all variables. The bottom quartile had the lowest values for harmonious passion and intrinsic motivation and the highest amotivation.

The views expressed in this dissertation are those of the author and do not reflect the official policy or position of the United States Air Force, Department of Defense, or the U.S. Government

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## **CHAPTER I**

### **INTRODUCTION**

Understanding how motivation affects and influences sport participation and persistence in sport is a complex process. The study of motivation is extremely complex in sport because many unique factors exist that influence athletes and situations differently. Social, contextual, and psychological influences all play roles in the motivational process. Motivational characteristics of the Division I athlete population are particularly interesting and important to study because these individuals have dual roles as students and athletes.

Self-determination theory (SDT; Deci & Ryan, 1985; Ryan & Deci, 2000) is a theory of motivation that has been at the forefront in the study of motivational processes in achievement areas such as education (Niemiec & Ryan, 2009), organizational behavior (Gagné, & Deci, 2005), and sport (Gillet, Vallerand, Amoura, & Baldes, 2010; Kimball, 2007; Medic, Mack, Wilson, & Starkes, 2007). Self-determination theory is a theoretical framework for the study of human motivation that focuses on the degree to which an individual's behavior is self-motivated and self-determined. Self-determination theory is different from other theories in that it does not focus just on the amount but on the type of motivation as well. There are three types of motivation identified in SDT: intrinsic motivation, extrinsic motivation, and amotivation. Intrinsic motivation is the key component of SDT and “remains an important construct, reflecting the natural human

propensity to learn and assimilate” (Ryan & Deci, 2000, p. 54). Deci and Ryan proposed that autonomy, competence, and relatedness foster intrinsic motivation, which may lead to persistence, enhanced performance, and creativity. Autonomy is the perception that one has choice and that one is the originator of his or her action. Competence refers to the perception that one has the ability necessary to meet the demands of the situation. Relatedness refers to feeling connected to others (Deci & Ryan, 1985; Ryan & Deci, 2000).

While Deci and Ryan identified the various types of motivation, the construct of passion may be seen as representing “the energy underlying such persistent involvement” (Vallerand et al., 2003, p. 506). Vallerand and colleagues (2003) defined passion as “a strong inclination toward an activity that people like, that they find important, and in which they invest time and energy” (p. 757). Additionally, they suggested two types of passion: Harmonious Passion (HP) and Obsessive Passion (OP). Harmonious passion and OP are distinguished by how the valued activity is internalized into the individual’s identification. Passion has also been considered to represent “high-priority goals with emotionally important outcomes” (Frijda, Mesquita, Sonnemans, & Van Goozen, 1991, p. 218), however, Vallerand and Miquelon (2007) argued that the motivational aspect has been underestimated in this definition of passion. Most of the early works on passion focused on romantic passion as opposed to passion toward achievement activities. Passion in the sport context has not been researched until relatively recently. In the sport context, some research exists with similar constructs such as running addiction (Sachs, 1981), exercise dependence and obligatory running (Hausenblas & Symons Downs, 2002), as well as positive and negative addiction (Glasser, 1976). These constructs,

however, are different from passion. Vallerand et al. (2006) stated that it was possible to be highly involved in sport and in a healthy fashion in the absence of addiction and negative affect.

Athlete satisfaction is also important within the sport experience. Athlete satisfaction has been defined as a “positive affective state resulting from a complex evaluation of the structures, processes, and outcomes associated with the athletic experience” (Chelladurai & Riemer, 1997, p. 135). Riemer and Chelladurai (1998) proposed that an individual’s perception of satisfaction in sport was important for a number of reasons. The first reason was because satisfaction and performance should be naturally linked. Second, athlete satisfaction has been of particular importance for athletes who balance competing demands. Additionally, it was suggested that athlete satisfaction was related to other important factors such as motivation. Finally, athlete satisfaction has been proposed to be affected by specific coaching behaviors.

The Division I athlete population is unique in that these individuals are both full-time athletes and full-time students. Although these athletes do not receive wages and, thus, are not considered professionals, many do receive scholarships which may be viewed as compensation leading to a *virtual employee* status (Riemer & Chelladurai, 1998). The structure and rules of Division I collegiate athletics create an environment where athletes’ autonomy may be affected by external factors such as expectations, coaching behaviors, and even commercialism (Kimball, 2007).

### **Background of the Study**

Self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2000) has been an important recent motivational theory in sport and other achievement contexts. Self-

determination theory has its roots in the seminal works of Harlow (1950), White (1959), and deCharms (1968), who first investigated intrinsic motivation. Ryan and Deci (2007) identified Harlow (1950) as the first person to systematically study intrinsic motivation and White (1959) continued in this line of research by linking intrinsic motivation to what he termed *effectance motivation*, or the innate desire to develop competence. The theoretical foundations of SDT are built on these seminal pieces and intrinsic motivation is viewed as the cornerstone. The interplay between external and internal, or extrinsic and intrinsic motivational factors, are the basis of motivation according to the tenets of SDT.

The foundation for SDT is the belief that humans have an inherent desire to develop skills, meet challenges, and take on activities without the necessity of external rewards. Ryan and Deci (2007) credited Harlow (1950) as the first researcher to study intrinsic motivation through his research on chimpanzees. Harlow recognized that the behavior of these animals was not dependent upon external rewards that may have otherwise motivated their behavior. Later, White (1959) continued this line of research with a focus on *effectance motivation*. Intrinsic motivation as an area of study was defined in part in opposition to ideas of Skinner (1953) who believed that behavior was always under the control of reinforcement from the environment and was always motivated by reinforcement directly related to primary drives. deCharms (1968) later added that being the creator, or originator of one's own actions, was key to intrinsic motivation and Deci and Ryan (1985; Ryan & Deci, 2000) subsequently included autonomy as a component of self-determination.



Self-determination theory is actually a meta-theory comprised of five mini-theories that characterize intrinsic and extrinsic motivation. The focus of SDT is on how social and cultural factors influence initiative, choice, performance, and well-being. The psychological needs for autonomy, competence, and relatedness are considered to foster motivation, stimulate initial engagement in activities, enhance performance, increase persistence in the activity, and have effects upon creativity (Gagné & Blanchard, 2007; Mallett, 2005; Treasure, Lemyre, Kuczka, & Standage, 2007; Vlachopoulos, Costas, & Terry, 2000). Deci and Ryan (1985; Ryan & Deci, 2000) also posited that the healthy functioning and development of individuals were dependent on the extent to which the basic psychological needs of autonomy, competence, and relatedness were met. If these three needs are thwarted, the result may be detrimental to the wellness of the individual. Individuals are viewed as active organisms with highly evolved tendencies towards mastering challenges and achieving personal growth but only when there is a supporting social context. This dialectic, the active organism interacting with the social factors from particular contexts, forms the basis for SDT's predictions about behavior and development.

The first mini-theory within SDT is Cognitive Evaluation Theory (CET). The tenets of CET address how factors such as social contexts and rewards impact intrinsic motivation. Organismic Integration Theory (OIT) is the second mini-theory and addresses extrinsic motivation. Extrinsic motivation may be viewed as instrumental or “refers to doing something because it leads to a separable outcome” (Ryan & Deci, 2000, p. 55). In SDT, Deci and Ryan proposed four forms of extrinsic motivation: external regulation, introjected regulation, identified regulation, and integrated regulation. These

dimensions are seen as being on a continuum of internalization of the activity into one's self where the more internalized the activity the more autonomous the behavior.

Causality Orientations Theory (COT) is the third mini-theory which addresses the individual differences in motivational orientations that refer to the way individuals orient to an environment and regulate their behavior. The fourth sub-theory is Basic Psychological Needs Theory (BPNT). Deci and Ryan posited that psychological needs and their relationship to psychological health and well-being are predicated on autonomy, competence, and relatedness. The last mini-theory is Goal Contents Theory (GCT) which addresses the distinction between intrinsic and extrinsic goals and their influence on one's motivation and well-being.

While SDT addresses motivation in human behavior, passion may be viewed as the underlying energy for persistent motivation (Vallerand et al., 2003). Passion is a relatively new variable in the sport motivation research. Vallerand et al. (2003) defined passion as "a strong inclination toward an activity that people like, that they find important, and in which they invest time and energy" (p. 757). It has been suggested that passion may also lead to not only a "liking" of an activity but a "love" of the activity (Lafrenière, Jowett, Vallerand, Donahue, & Lorimer, 2008). Vallerand and colleagues (2003) also suggested that two types of passion existed, harmonious passion (HP) and obsessive passion (OP). Harmonious passion and OP are distinguished by how the valued activity is internalized into the individual's identification.

Vallerand and Miquelon (2007) defined HP as "a motivational force that leads a person to engage in the activity willingly and engenders a sense of volition and personal endorsement about pursuing the activity" (p. 251). Individuals do not feel compelled to

engage in the activity but choose to engage in the activity and in this circumstance the activity is in harmony with other aspects of the individual's life. Obsessive passion is defined as "a motivational force that pushes a person toward an activity" (Vallerand & Miquelon, 2007, p. 251). Individuals with OP feel compelled to engage in the activity and it often is not in harmony with other aspects of life.

Passion is highly related to intrinsic and extrinsic motivation which are two main components of SDT (Vallerand & Miquelon, 2007). Intrinsic motivation is related to passion by the fact that an activity is engaged in out of pleasure and enjoyment, thus both share the aspect of liking the activity. An individual may be interested in the activity but may not, by definition, be passionate about the activity. For an activity to be considered a passion, it needs to be part of the person's identity and interesting to the individual (Vallerand & Miquelon, 2007).

Satisfaction in any context may be considered to be very important for positive affect. Riemer and Chelladurai (1998) argued that an athlete's perception of satisfaction in his or her sport is important because satisfaction should influence motivation and well-being. From an organizational perspective, a successful organization is one that meets the needs of its primary stakeholders and the same is applied to sport. Regardless of personal views, athletes are at the center of athletic departments and their satisfaction bears attention both theoretically and practically (Riemer & Chelladurai, 1998). Riemer and Chelladurai (1998) stated that it is generally accepted that when the job, or in this case the athletic experience of the athlete, satisfies the needs of the athlete, athlete satisfaction will occur. If the needs of the athlete are not met, dissatisfaction will occur.

It has been suggested through seven studies by Vallerand et al. (2003, 2006) that HP is associated with positive affect and OP is associated with negative affect. Meeting the needs of autonomy may lead to HP which, in turn, has been shown to be associated with subjective well-being (SWB). It was also suggested that the presence of HP in athletes leads to positive psychological outcomes. In other words, meeting the autonomy need and having more self-determined forms of motivation influences the balance of HP and OP which, in turn, may influence athlete satisfaction. It must be considered that there are many factors that influence the perception that athletes' need for autonomy is met. According to Jowett (2005), the coach-athlete relationship was highly influential in this process.

### **Statement of the Problem**

The relationship among self-determined motivation, passion, and athlete satisfaction has not received extensive study in sport. Specifically, there are no studies that have addressed the patterns of relationships among these variables in Division I athletes longitudinally, specifically over the course of one competitive season.

### **Purpose of the Study**

The purpose of this study was to investigate the patterns of relationships among self-determined motivation, passion, and athlete-satisfaction over time, specifically over one competitive season, in Division I athletes. Understanding how and why changes occur longitudinally may help in facilitating athlete satisfaction in collegiate sport.

### **Research Questions**

The purpose of this study was to investigate the relationships among motivation (intrinsic motivation, extrinsic motivation, and amotivation), harmonious passion and

obsessive passion, and levels of college athlete satisfaction over the course of one competitive season. Specifically the study explored the following issues:

- Q1 What are the motivational characteristics of college athletes and how dynamic are the motivational profiles throughout a season?
- Q2 What were the relationships among motivation, passion, and satisfaction throughout a season?

### **Importance of the Study**

Understanding the patterns of relationships among self-determined motivation, passion, and athlete satisfaction over a season can add important knowledge to the field. Gaining knowledge about the relationship between passion and motivation may help with developing intrinsic and more autonomous forms of motivation as well as harmonious passion in athletes. This knowledge may be useful and beneficial for modifying coaching behavior and in the design of intervention programs with athletes.

### **Limitations of the Study**

This study examined the motivational and passion profiles of Division I athletes at one university located in the Rocky Mountain region throughout a season. It cannot be assumed that the results would apply to athletes participating at other Division I institutions. Additionally, the results may not necessarily apply to the athletes participating in other sports or other levels of sport. Furthermore, the athletes that participated in the interview portion may not necessarily represent other athletes from their teams.

### **Definitions of Terms**

*Amotivation*: Lacking any motivation at all (Deci & Ryan, 1985; Ryan & Deci, 2000).

*Autonomy:* An individual's perception that his or her thoughts and beliefs are freely chosen and that he or she is the originator of his or her own actions (Deci & Ryan, 1985; Ryan & Deci, 2000).

*Competence:* An individual's perception that his or her behavior and interaction with the social environment is effective (Deci & Ryan, 1985; Ryan & Deci, 2000).

*Extrinsic Motivation:* Doing something because it leads to a separable outcome beyond the enjoyment received from the act itself or from external sources (Deci & Ryan, 1985; Ryan & Deci, 2000).

*Harmonious Passion (HP):* A type of passion where the activity is autonomously internalized into the individual's identification. The person has made a free, conscious, contingency-free choice to engage in the activity and does not feel compelled to do the activity. The person is at harmony with the activity and other aspects of their lives and the activity is viewed as an important part of the person but it does not control him or her (Vallerand et al., 2003).

*Intrinsic Motivation:* Motivation based on the satisfaction of behaving "for its own sake" or engaging in an activity because it is inherently enjoyable and without the need for external rewards (Deci & Ryan, 1985, Ryan & Deci, 2000).

*Motivation:* To be moved to do something (Deci & Ryan, 1985; Ryan & Deci, 2000).

*Obsessive Passion (OP):* A type of passion where the activity is not internalized into the individual's identification or a controlled internalization of the activity into their identification exists. OP normally occurs due to interpersonal and/or intrapersonal pressure perceived by the person due to contingencies, such as self-esteem and social

acceptance, attached with the activity. This pressure may lead to the person feeling compelled to participate, regardless of the situation, thus leading to conflict with other areas of the person's life (Vallerand et al., 2003).

*Passion:* An activity that an individual has a strong desire to engage in, that they value and find important, and that they invest their time and energy towards (Vallerand et al., 2003).

*Relatedness:* An individual's perception that he or she is connected to others around them and belongs to valued social groups (Deci & Ryan, 1985; Ryan & Deci, 2000).

## **CHAPTER II**

### **REVIEW OF LITERATURE**

As with any area of research study, the essential variables in the area of study need to be clearly defined to avoid any misconceptions about the constructs being investigated. Conceptually, motivation simply refers “to be moved to do something” (Ryan & Deci, 2000, p. 54). From a theoretical perspective, the study of motivation involves the identification of cognitive, affective, and social variables that influence one’s actions. While there are several motivational paradigms that have been proposed in sport such as Competence Motivation Theory (Harter, 1978), Expectancy-Value Theory (Eccles et al., 1983), and Achievement Goal Theory (AGT; Dweck, 1986; Nicholls, 1984), SDT has recently been used. Within Ryan and Deci’s theory, motivation was viewed as multi-dimensional in that individuals possess not only different amounts of motivation but also different types of motivation. These different types or orientations are viewed as the “why of actions” and reflect the person’s underlying motivational goals.

#### **Origins and Evolution**

Self-determination theory has its roots in the seminal works of Harlow (1950), White (1959), and deCharms (1968) who were some of the earliest researchers to systematically study intrinsic motivation. According to Ryan and Deci (2007), Harlow (1950) was the first to acknowledge intrinsic motivation and White (1959) later linked intrinsic motivation to



what he termed *effectance motivation* or the innate tendency or desire to develop competence. The theoretical foundations of SDT are built on these seminal pieces and intrinsic motivation is viewed as a common cornerstone of the work of these individuals. Ryan and Deci (2000) have since defined intrinsic motivation as “the doing of an activity for its inherent satisfactions rather than for some separable consequence” (p. 56).

The importance of intrinsic motivation was first identified in experimental studies on animal behavior. It was observed that the behaviors engaged in by many animals were considered exploratory, playful, and curiosity-driven and occurred in the absence of any type of reward or reinforcement. These behaviors were considered to be engaged in for no instrumental reasons other than for the positive experiences derived from the act itself. Although there were different definitions of intrinsic motivation at the time, what was consistent was that the importance of intrinsic motivation stood in contrast with Operant Theory (Skinner, 1953) and Learning Theory (Hull, 1943). Skinner had postulated that all behaviors were motivated by rewards and Hull asserted that all behaviors were motivated by physiological drives as these perspectives were dominant in psychology from the 1940s to the 1960s. However, White (1959) held a contrary perspective and postulated that it was not biological but psychological needs that were the impetus for motivation, specifically the psychological need to feel competence that was essential to motivation. deCharms (1968) later added that it was important for individuals to perceive that they were the originator of their actions. From this perspective, perceptions of autonomy became important to the study of motivation.

From the perspective of both Operant theory (Skinner, 1953) and Learning Theory (Hull, 1943), behaviors were considered to be motivated by rewards and

physiological drives to satisfy basic needs. This belief has led to research that has attempted to identify what basic needs were satisfied by intrinsically motivated behaviors. From a similar perspective, Deci and Ryan (1985; Ryan & Deci, 2000) have argued that essential psychological needs were fulfilled when people felt autonomous, competent, and related to others and the satisfaction of these basic needs was the focus of SDT. Ryan and Deci (2000) defined needs as nutriments essential to growth, integrity, and well-being. Autonomy refers to individuals' need to feel that they are the origin of their actions. Competence is the need to feel effective in these actions and relatedness is the need to be associated with and belong to groups of others

In the early studies (e.g., deCharms, 1968), intrinsic and extrinsic motivation were viewed as bipolar opposites and a person was believed to be entirely intrinsically or entirely extrinsically motivated. Deci (1971) later defined extrinsic motivation as behavior that was motivated by contingent outcomes outside the activity itself. In Self-determination theory, Deci and Ryan (1985; Ryan & Deci, 2000) have extended the concept of extrinsic motivation to include varied types of motivation that were dependent on autonomy. In addition, motivation was viewed along a continuum rather than from the same bipolar perspective of deCharms (1968).

### **Motivational Perspectives Applied to Sport**

Before explaining SDT in detail, a few other motivational theories must be briefly discussed to provide a framework for understanding motivational perspectives in sport. The first theory to discuss is Competence Motivation Theory (Harter, 1978). Harter posited that individuals who were intrinsically oriented were motivated to develop and/or demonstrate their competencies in certain achievement domains which led the individual

to try to master a task or activity or to engage in mastery attempts. From this perspective, optimally challenging tasks were preferred by the individual to satisfy their curiosity and interests. If the individual perceived that they were successful, the result would be an increase in their perceptions of competence, positive affect, and an increased motivation to continue displaying their competence.

Achievement Goal Theory (AGT; Dweck, 1986; Nicholls, 1984) was a second motivational theory which has garnered popularity, especially in the past 30 years. The first principle of AGT was that individuals have a need to feel competent on the tasks that they encounter. Secondly, individuals sought to be successful and sought to avoid being unsuccessful on the tasks they encounter. Third, individuals defined success differently depending on their goal or goal orientations. Within achievement goal theory, there were two distinct goal orientations labeled task orientation and ego orientation. An individual with a task orientation, or mastery orientation, defined success in terms of self-improvement and task mastery. Conversely, a person with an ego orientation, or performance orientation, defined success as simply doing better than others.

### **Self-Determination Theory**

Over the past three decades, SDT (Deci & Ryan, 1985; Ryan & Deci, 2000) has been at the forefront in terms of explaining motivation in various contexts, including sport. Self-determination theory was unique in that it had a focus on three types of motivation: intrinsic motivation, extrinsic motivation, and amotivation.

Self-determination or autonomy in reference to motivation referred to an individual's perception that their behavior and thoughts were freely chosen and that they were the originators of their own actions. According to Deci and Ryan (1985; Ryan &

Deci, 2000), motivation consisted of different levels and even different orientations. Different orientations, according to Deci and Ryan (1985; Ryan & Deci, 2000), were the underlying attitudes and goals which gave rise to action. The three different types of motivation (intrinsic, extrinsic, and amotivation) were all based on the nature of the reason and goals for the action. The first type of motivation was intrinsic motivation which referred to “doing something because it is inherently enjoyable” (Ryan & Deci, 2000, p. 55). Extrinsic motivation was the second type because it was instrumental and the behavior was engaged in for reasons other than the enjoyment of the behavior itself. There were actually four different types of extrinsic motivation according to Deci and Ryan (1985; Ryan & Deci, 2000). The final type was amotivation which reflected a lack of any motivation including intrinsic and extrinsic motivation. These three categories of motivation were seen as lying on a continuum with amotivation at one pole, intrinsic motivation on the other, and extrinsic motivation in between. Level of autonomy dictated where each type of motivation laid on the continuum. Intrinsic motivation was the most desirable motivational orientation because the behavior was self-determined and autonomous. According to Deci and Ryan (1985; Ryan & Deci, 2000), appealing to one’s self in reference to the reasons we took action fostered our basic human psychological need to feel autonomous, competent, and related to others. Conversely, when we were driven by extrinsic motivation, little self-determination and autonomy was experienced and these basic needs were not satisfied.

### **Intrinsic Motivation**

Simply put, the interest and enjoyment from doing the act in itself reflects intrinsic motivation. From a historical standpoint, CET (Deci, 1975, Deci & Ryan, 1985;

Ryan & Deci, 2000) was first developed to account for the three social factors of autonomy, competence, and relatedness. Cognitive evaluation theory eventually was incorporated into SDT as a sub-theory. Deci (1975) and Deci and Ryan (1985; Ryan & Deci, 2000) argued that interpersonal events and structures, such as rewards and communication which foster competence in an individual, may increase intrinsic motivation because they appealed to the basic need for competence. However, intrinsic motivation will not occur unless autonomy, or a sense of internal locus of control, was also perceived by the individual. Thus, individuals must not only experience perceived competence but also perceive their behavior to be self-determined if intrinsic motivation was to be maintained or enhanced in a situation. Deci and Ryan (1985; Ryan & Deci, 2000) also posited that psychological well-being and optimal functioning was predicated on autonomy, competence, and relatedness. This sub-theory of SDT, also known as BPNT, was developed to account for these beliefs.

Vallerand (1997) was a researcher who has utilized SDT for the purpose of understanding motivation in sport and proposed that there were different levels of motivation. The different levels were situational level-based motivation, contextual level-based motivation, and global level-based motivation, and all were viewed as being influenced by numerous factors. Vallerand (1997) developed his Hierarchical Model of Intrinsic and Extrinsic Motivation (HMIEM) to explain the different levels of motivation and their interactions. Vallerand's HMIEM was highly influenced by the SDT framework. The basic principles of HMIEM were that intrinsic, extrinsic, and amotivation must be addressed for a complete analysis of motivation. It was posited that intrinsic and extrinsic motivation existed at the global, contextual, and situational levels.

Social factors determined motivation and top-down effects from motivation at higher levels of the hierarchy exist. Additionally, recursive bottom-up relationships of motivation at the next higher level in the hierarchy also existed and motivation led to important consequences. Within HMIEM, there existed three forms of intrinsic motivation: intrinsic motivation to know (e.g., *the pleasure I get for learning more about the sport*); intrinsic motivation to accomplish (e.g., *the satisfaction I get mastering optimal, difficult training techniques*); and intrinsic motivation to experience stimulation (e.g., *the pleasure I get from exciting experiences*). Vallerand (1997) also proposed that social and environmental factors facilitated or undermined intrinsic motivation.

### **Extrinsic Motivation**

Extrinsic motivation refers to engaging in an activity as a means to an end and not for its own sake. Motivation occurs not because of the inherent *enjoy-ability* of engaging in the activity but because of the instrumental value that the individual perceives will result from engaging in the activity. Extrinsic motivation is characterized by an internalization and integration of values and regulations that reflect external forms of influence (Deci & Ryan, 1985). According to Ryan and Deci (2000), internalization was “the process of taking in a value or regulation, and integration is the process by which individuals more fully transform the regulation into their own so that it will emulate from their sense of self” (p. 60). Organismic Integration Theory (OIT; Deci & Ryan, 1985; Ryan & Deci, 2000), another sub-theory of SDT, included four different forms of extrinsic motivation and the factors which promoted or undermined internalization and integration.

The first form of extrinsic motivation, in which the individual demonstrated the least amount of autonomy and self-determination, was external regulation. Behavior by the individual was performed to obtain an external reward or to satisfy an external demand. Individuals experienced these behaviors but felt alienated or controlled. In the case of external regulation, an external perceived locus of causality existed. In other words, the individual did not perceive their behavior and/or thoughts to be freely chosen nor did they perceive that they were the originator of their actions. An example of external regulation would be when an individual was motivated to participate in a race simply to receive the medal or an individual was motivated to perform a particular drill by avoidance of running extra (punishment) intervals.

The second form of extrinsic motivation was introjected regulation. Introjected regulation was still very controlling because individuals performed and engaged in actions with feelings of pressure to avoid guilt, anxiety, or to attain ego-enhancements or pride. Introjected regulation was dependent upon the person's contingent self-esteem. The individual's actions were motivated by the enhancement or maintenance of self-esteem and/or feelings of worth. Introjected regulation behaviors were not fully part of the self and had an external locus of causality. Although introjected regulation was still a very controlling form of extrinsic motivation, it was more autonomous and internalized than external regulation. An example of introjected regulation would be when an individual was motivated to perform well because he or she did not want to disappoint his or herself.

The third category of extrinsic motivation within SDT was identified regulation. Identified regulation was a more autonomous and self-determined form of extrinsic

motivation because the individual had identified with the behavior and had accepted its regulation as his or her own. The individual had a somewhat internal locus of causality, valued the activity, and had self-endorsement of goals. Identified regulation represented behavior by the individual in which they were involved by choice because the individual perceived that he or she would gain benefits from the activity or values the activity. An example of identified regulation would be when an individual was motivated to study biology because it would make him or her a better doctor in the future which he or she valued as a life goal.

The final and most autonomous form of extrinsic motivation was integrated regulation. This form of motivation occurred when regulations had been fully assimilated by the individual and would take place when there was congruence with one's values and needs. In other words, the activity was perceived as fully in concert with the individual's values and needs. Integrated motivated behavior was more self-determined than the other forms of extrinsic motivation because the reasons for the behavior were internalized by the individual and assimilated to the self. This type of motivation was highly related to intrinsic motivation and even had an internal locus of causality. However, it was still considered an extrinsic form of motivation because the behavior was done for the instrumental value of the outcome and not solely for the enjoyment of the activity. An example of integrated regulation would be when an individual was motivated to work out purely for the inherent pleasure he/she experienced while engaged in the activity but still expected an outcome of health benefits. The expectation of a health benefit outcome was what made the motivation for working out a form of extrinsic motivation or specifically identified regulation.



## **Amotivation**

A third type of motivation according to SDT was amotivation. Amotivation was “the state of lacking an intention to act” (Ryan & Deci, 2000, p. 61). Amotivation was characterized by a lack of intention and personal causation, not valuing an activity, feelings of incompetency, and/or believing that the behavior would not result in a desired outcome (Ryan & Deci, 2000). Amotivation existed when an individual lacked any motivation at all for an activity.

## **Self-Determination Theory Research**

There has been a substantial amount of research in the realm of sport and exercise psychology conducted from a SDT framework. In the sport context, SDT has been investigated in relation to burnout (Lonsdale, Hodge, & Rose, 2009), self-esteem and well-being (Gagné & Blanchard, 2007), enjoyment (Treasure et al., 2007), coaching effectiveness (Gagné, Ryan, & Bargmann, 2003), and motivational climate (Newton, Duda, & Yin, 2000) among other areas of study. In the context of exercise, there has been research conducted in relation to autonomy support (Wilson & Rodgers, 2004; Wilson, Rodgers, Fraser, & Murray, 2004), and basic psychological needs (Hagger, Chatzisarantis, Culverhouse, & Biddle, 2003). In the Physical Education (PE) context, SDT has been investigated with regards to autonomy-supportive environments and self-determined forms of motivation (Hagger, Chatzisarantis, Barkoukis, Wang, & Baranowski, 2005). Although this is in no way an exhaustive list, many questions have been examined from a SDT framework. The following review sought to facilitate an understanding of SDT in the sport context as it pertained specifically to autonomy

supportive environments, the coach-athlete relationship, psychological and subjective well-being, and the influences of external factors.

Kimball (2007) conducted a study with the purpose of developing an understanding of athletes' perceptions of autonomy relative to their participation in athletics at the National Collegiate Athletic Association (NCAA) Division I level from a SDT (Deci & Ryan, 1985; Ryan & Deci, 2000) perspective. Specifically, this study attempted to investigate how and why athletes choose to reside in an environment and continue participation in sport when their autonomy was undermined by external factors such as expectations, coaching behaviors, and commercialism. The sample consisted of seven male and five female NCAA Division I athletes representing the sports of basketball, football, track and field, and golf. A qualitative approach was selected to provide greater depth of understanding and higher quality data. Open-ended questions and probes were used in the interviews which allowed both the athletes and the researchers to elaborate on questions, to seek clarification based on responses, and to facilitate the course of the interview. Three major themes were identified in the areas of personal autonomy, relational autonomy, and lack of autonomy. Personal autonomy was defined as the degree of choice and control that athletes perceived in their sport involvement. Although there were situations that were perceived as externally controlling, the athletes still ultimately believed they had "the final choice." Relational autonomy, which reflected choices by the athletes based on relationships with teammates and coaches, was expressed by athletes referring to other athletes and coaches even though they possessed a strong sense of identity in the decision-making process. These athletes reported that they possessed a stronger desire to do things and make choices for

their teammates and/or coaches when the relationship had a reciprocal sense of care, respect, and trust. Conversely, a lack of autonomy was perceived as being due to some limitations from the very structure of Division I athletics (Kimball, 2007). Some of the issues mentioned by the athletes were feelings of pressure, obligation, compliance and control by the coach, as well as by academic restrictions, having to wear a certain brand of clothing, not being recognized as an individual, and power dynamics. In reference to coaches, interview data suggested that, if the athletes felt that the coach listened to their input, set a good example to follow, and/or felt the coach had their best interest in mind, they felt more autonomous. The athletes explained that they gave up a certain degree of autonomy when they “signed the line.” The athletes directed their focus on potential benefits such as preparation for the future and life after sports. Kimball (2007) summarized this situation by stating that “when the need to be in control of one’s choices is hindered by the culture of college sport, athletes prioritize relationships and configure their identity so connections with others are more important than making choices” (p. 832). Perceptions of autonomy in the environment revolved around relationships with other individuals. Deci and Ryan (1985; Ryan & Deci, 2000) posited that individuals behaved in a certain way to feel a sense of connectedness, or relatedness, to others. It was then also likely that individuals choose behaviors because of their connections, or relatedness, to others as well.

Athlete motivation was also affected by their coaches. Gillet and colleagues (2010) conducted a study to evaluate athletes’ perceptions of coach behaviors, motivation, and their subsequent sport performance. The researchers took a HMIEM approach (Vallerand, 1997) which was based on the theoretical framework of SDT. The

sample consisted of 101 French judokas consisting of 32 females and 69 males competing in a national tournament. Three instruments were used: a French adaptation of the Perceived Autonomy Support Scale for Exercise Settings to measure perceived autonomy support (Hagger et al., 2007); the Sport Motivation Scale (SMS; Brière, Vallerand, Blais, & Pelletier, 1995) to measure contextual motivation; and the Situational Motivation Scale (Guay, Vallerand, & Blanchard, 2000) to measure situational motivation. The official ranking from the tournament results were used as the measure of sport performance. All questionnaires were completed one to two hours before their competition. The results of the study suggested that pre-competition levels of self-determined motivation positively predicted athletes' performance during the competition. Also, coaches' support of their athletes' autonomy was positively related to the athletes' self-determined motivation and sport performance, providing support for the SDT postulate that self-determined motivation may predict positive consequences in the sport context.

Amorose and Anderson-Butcher (2007) conducted a study using a SDT framework to investigate the role of coaches in affecting motivation of their athletes. The purpose of this study was to determine whether the relationship between perceived autonomy support and athletes' motivational orientation was mediated by the three needs of competence, autonomy, and relatedness. The participants in the study were 263 males and 318 females from both team and individual sports. Both high school and collegiate athletes from the Midwestern region of the U.S. were represented. Each athlete completed the instrument after a regular-scheduled practice. Autonomy-supportive coaching behavior was measured by the short version of the Sport Climate Questionnaire

which was based on the Work Climate Questionnaire (Baard, Deci, & Ryan, 2004). Fundamental human needs were measured by using a sport-oriented version of Richer and Vallerand's (1998) Feelings of Relatedness Scale and motivational orientation was measured using the SMS (Brière et al., 1995). The results of the study suggested that perceived autonomy support was most strongly related to the athletes' feelings of autonomy and all three of the needs were positive predictors of the athletes' motivational characteristics. The results of this study also indicated that when athletes feel competent, autonomous, and had positive social relationships, they had greater self-determined motivation. The degree to which athletes perceived their coaches as being autonomy-supportive was positively and significantly related to their levels of competence, autonomy, and relatedness which, in turn, had a positive effect on motivation. Additional findings were that high school athletes, as compared to collegiate athletes, were more likely to perceive their coaches as autonomy supportive and the patterns of relationships between perceived autonomy and the athletes' perceptions of competence, autonomy, relatedness, and motivation were similar for both high school and collegiate athletes. Finally, the findings of the study suggested that coaches who fostered autonomy in their athletes would have a positive influence on their athletes' perceptions of competence, sense of autonomy, and feelings of relatedness which would then positively influence athletes' intrinsic motivation.

Pelletier, Fortier, Vallerand, and Brière (2001) conducted a study in which the purpose was to assess athletes' perceptions of coaches' autonomy support versus control, the athletes motivational style (intrinsic motivation, identified regulation, introjected regulation, external regulation, and amotivation), and athlete persistence. Specifically,

this study investigated the influence of athletes' perceptions of coaches' interpersonal behaviors on the different forms of regulation for competitive swimming. The researchers also attempted to explain the combined impact of the perception of coaches' interpersonal behaviors and the distinct types of regulation on persistence in swimming after two seasons. The sample was comprised of 174 male and 195 female competitive Canadian swimmers from the ages of 13-22. The first questionnaire (Time 1) was completed at the beginning of the competitive season in October. Swimmers completed the questionnaire before a workout and another group of swimmers did so during a weekend swim meet. The questionnaires were also completed in August of the following year (Time 2) and in the subsequent August (Time 3) as well. The athletes' perceptions of their coach's interpersonal behaviors were assessed with a scale adapted from Pelletier, Tuson, and Haddad (1997). The SMS (Pelletier et al., 1995) was used to assess motivational orientation of the athletes. For the measurement of persistence, there were two measures, one for each season assessed at Time 1, Time 2, and Time 3. The researchers found that controlling relationships fostered more non-self-determined forms of regulation, such as external regulation and amotivation. More self-determined motivation was present in relationships which were considered more autonomy supportive. Those athletes who showed self-determined types of regulation at the beginning of the season also exhibited more persistence at subsequent points of the season. Those athletes who demonstrated amotivation at the first measurement were found to have the highest attrition on subsequent assessments. An athlete with an introjected regulated profile at Time 1 significantly predicted persistence at the second measurement, however, was non-significant at the last measurement. Additionally,

persistence was not positively predicted at the second measurement by an externally regulated profile but was negatively associated persistence at the last measurement. The results of the study also suggested that when the social context was autonomy supportive, athletes were more apt to internalize the regulation of important activities. Conversely, when the social context was controlling, self-determined motivation was undermined.

Gagné and colleagues (2003) used a SDT framework to examine the effects of young female American gymnasts' perceptions of autonomy support from their coaches and parents in reference to need satisfaction, motivation, and well-being. Well-being was characterized by positive experiences and by an integrated sense of self (Ryan & Deci, 2000). Specifically, this study characterized well-being as the stability of an individual's self-concept, vitality, and being proactive and approach-oriented. It was hypothesized that the gymnasts' perceptions of autonomy support as well as favorable forms of involvement by both coaches and parents would be related to more autonomous forms of motivation and need satisfaction in their sport participation. Autonomous motivation and need satisfaction were then expected to have positive effects on positive affect, self-esteem and vitality, and to reduce negative affect. The sample consisted of 45 female gymnasts, 7-18 years of age from a northeastern U.S. competition team. The initial instrument completed by the gymnasts consisted of three measures. The first measure assessed self-regulation for gymnastics through a scale that assessed five different motivational regulations for sport participation (Ryan & Connell, 1989). The gymnasts' perception of parental autonomy support was measured with a scale adapted from Grolnick, Ryan, and Deci (1991) and attendance was measured by attended practices and was used as an indicator for behavioral engagement. Of the 45 initial gymnasts who

participated in the study, 33 participated in the daily diary portion which was completed each day before practice. For the daily diary, the following scales were included: motivation for gymnastics was measured with 6 adapted items from the initial questionnaire, the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) to measure positive and negative affect, self-esteem was measured by a 10-item scale assessing the gymnasts' attitudes towards themselves, and a subjective vitality scale was also completed. At the end of each practice, the gymnasts also completed a second form containing the PANAS, a self-esteem scale, a subjective vitality scale, and a need-satisfaction scale which assessed the extent to which gymnasts felt that their needs for autonomy, competence, and relatedness were met during practice. The results of the study indicated that daily motivation was a predictor of pre-practice well-being. However, daily motivation only influenced well-being reported before practice. Need satisfaction during practice had an overriding effect on the change in well-being from pre- to post-practice but not on motivation. Furthermore, the more athletes perceived their coaches and parents to be autonomy supportive, the more self-determined motivation they had. Also, the changes in well-being from pre- to post-practice varied with the need satisfaction of the athletes during practice. The researchers concluded that an autonomy-supportive coaching style may positively influence how athletes felt in terms of competence, autonomy, the training climate, and how athletes interacted with each other. Also, the researchers concluded that when athletes trained for autonomous reasons and had their needs supported by their parents and coaches, training may be less likely to result in burnout and injury.



Solberg and Halvari (2009) also used a SDT framework to conduct a study about the goals and the positive well-being of elite athletes. It was hypothesized by the researchers that having autonomous motives for goals would prove to be a mediator for the relationship between perceived autonomy support and intrinsic goal content with positive emotional SWB. Additionally, it was hypothesized that controlled reasons for goals would mediate the association between extrinsic goal content and subjective negative emotional well-being. The sample consisted of 95 elite athletes representing their countries in Olympic or World Championships in Track and Field, Greco-Roman Wrestling, Taekwondo, and Power Lifting. The questionnaires were completed by the participants at the Norwegian Olympic Centre during the spring and autumn of 2004. Personal goals were assessed for each athlete by having them write down the four most important goals they were striving for in their particular sport. Reasons for goals were assessed by rating why they pursued their goals using the self-determination continuum. The content of goals were assessed with questions estimating how much each of the goals mentioned would help to bring about six possible future circumstances where three possible futures represented intrinsic content values and the other three represented extrinsic content values. Perceived coach-autonomy support was assessed using a short version of the autonomy support scale from Williams, Grow, Freedman, Ryan, and Deci (1996). Athletes' subjective emotional well-being was assessed using the PANAS (Watson et al., 1988). The results of the study suggested that autonomous reasons for athletes' personal goals mediated the relationship between perceived autonomy support from their coaches and their individual positive emotional well-being and intrinsic goal content. The reasons these athletes gave for their goals predicted their emotional well-

being. The pursuit of autonomous goals in everyday training indicated was related to positive emotional well-being.

Hodge, Lonsdale, and Jackson (2009) conducted a study to investigate the relationships among basic need satisfaction and athlete engagement (AE) with flow. The researchers took a positive psychology (e.g., Gould, 2002) framework focusing not only on psychological weaknesses but also strengths, specifically AE. Athlete engagement was seen as an enduring, relatively stable sport experience with generalized positive affect, and favorable cognitions about one's sport as a whole (Lonsdale, Hodge, & Jackson, 2007; Lonsdale, Hodge, & Raedeke, 2007). Flow was considered to be as an intrinsically rewarding experience characterized with total immersion into the activity (Csikszentmihalyi, 1990). The purpose of this study was to examine the basic needs (autonomy, competence, and relatedness) and AE relationship (antecedents) and the AE and flow relationship (consequences) in elite sport. The second purpose of the study was to investigate the extent to which AE mediated the basic needs and flow relationship. The researchers hypothesized that need satisfaction would be positively associated with AE; that needs satisfaction would be positively associated with flow; that AE would be positively associated with flow; and that AE would mediate the relationship between needs satisfaction and flow. The sample consisted of 201 elite Canadian athletes between the ages of 14-61 representing 51 different sports. To measure basic needs satisfaction, 12 items adapted from measures of autonomy, competence, and relatedness at work (Deci et al., 2001) and competence in sport (McAuley, Duncan, & Tammen, 1989) were used. Athlete engagement was measured using the Athlete Engagement Questionnaire (Lonsdale, Hodge, & Jackson, 2007) and the Dispositional Flow Scale-2 (DFS-2; Jackson

& Eklund, 2002) was used to measure dispositional flow. The results of the study suggested that needs satisfaction of the athletes (autonomy, competence, and relatedness) was positively associated with both AE and flow and AE was positively associated with flow. In reference to AE as a mediator for the needs satisfaction and flow relationship, this expectation was only partially supported.

Almagro, Sáenz-López, and Moreno (2010) conducted a study investigating motivation in the coach-athlete relationship from both a SDT (Deci & Ryan, 1985; Ryan & Deci, 2000) and HMIEM (Vallerand, 1997) perspective. The purpose of the study was to investigate the importance of an autonomy-supportive climate created by the coach on motivation and adherence to sport. The researchers examined the coaches' support for athlete's input, praise for autonomous behavior, perceived autonomy, intrinsic motivation, and the intention to be physically active. The researchers hypothesized that encouragement of athlete autonomy by the coach in training sessions, characterized by either interest in the athletes' input or by praise for the athletes' autonomous behavior, would positively predict meeting the need for autonomy in the athletes. Furthermore, it was predicted that the satisfaction of the need for autonomy would be positively related to intrinsic motivation which, in turn, would also be positively related to intentions for being physically active in the future. The participants were 608 competitive Spanish athletes, 109 girls and 499 boys between the ages of 12-17 representing 9 sports. The questionnaire included the Spanish version of the Autonomy-Supportive Coaching Questionnaire (ASCQ) originally developed by Conroy and Coatsworth (2007); the autonomy scale from the Spanish version (Sánchez & Núñez, 2007) of the Basic Psychological Needs in Exercise Scale (BPNES; Vlachopoulos & Michailidou, 2006);

three scales that measured intrinsic motivation from the Spanish version (Núñez, Martín-Albo, Navarro, & González, 2006) of the SMS (Brière et al., 1995); and an adapted and translated version in Spanish (Moreno, Cervelló, & González-Cutre, 2007) of the Intention to be Physically Active Scale (IPAS; Hein, Müür, & Koka, 2004). In the correlational analysis, coaches' interest in athletes' input was positively and significantly correlated with praise for autonomous behavior and athletes' desire for autonomy. Coaches' praise for autonomous behavior was correlated positively and significantly with interest in athletes' input, perceived autonomy, intrinsic motivation, and the intention to be physically active. Athlete intent to be physically active was correlated positively and significantly with all variables except with coaches' interest in athletes' input. The results of the study suggested that coach interest in athletes' input and praise for autonomous behavior were both positive predictors of athlete desire for autonomy. Autonomy and intrinsic motivation were also found to be positively and significantly correlated and intrinsic motivation predicted intent to be physically active.

Mouratidis, Lens, and Vansteenkiste (2010) conducted a study investigating autonomy-supportive corrective feedback by coaches in reference to motivation and well-being. Autonomy-supportive corrective feedback was defined as feedback after poor performance outcomes and/or mistakes and well-being was defined as positive affect and vitality. A SDT (Deci & Ryan, 1985; Ryan & Deci, 2000) theoretical framework was used. The purpose of the study was to investigate the extent to which autonomy-supporting corrective feedback was associated with athletes' self-determined motivation and well-being. The researchers hypothesized that autonomy-supporting corrective feedback would be positively related to the degree to which the athletes perceived the

feedback as legitimate. The legitimacy of the feedback would, in turn, be related to the athletes' intentions to persist and their well-being. The sample was comprised of 337 Greek adolescent athletes representing 12 sports competing at different competitive levels from the regional to the national level. To assess self-regulation, the Behavioral Regulation in Sport Questionnaire (BRSQ; Lonsdale, Hodge, & Rose, 2008) was adjusted to assess both autonomous and controlling reasons for participation in sport. Corrective feedback was assessed with a new scale created by the researchers. The scale measured the experienced amount of corrective feedback, perceived communication style, and perceived legitimacy of the corrective feedback. Athletes' perceptions of coach behaviors were also assessed with 9 of the 12 items from the Coaching Feedback Questionnaire (CFQ) based on the Coaching Behavior Assessment Questionnaire (CBAS; Smith, Smoll, & Hunt, 1977). Subjective vitality was assessed using a scale from Ryan and Frederick (1997) and positive and negative affect was measured by the PANAS (Watson et al., 1988). Depression, defined as depressive feelings during the last few weeks, was assessed by using an adjusted Center for Epidemiological Studies-Depression Scale (CES-D; Radloff, 1977). The final measure assessed free-choice behavioral intentions. This variable was assessed by two questions that assessed the extent to which the athletes aimed to remain involved in their sport activity and to train at the same level during the upcoming season. The results of the study suggested that an autonomy-supporting style by the coach was positively related to the athletes' future intentions to persist in athletics as well as their well-being. This autonomy-supportive style was also negatively related to ill-being. The perception of legitimacy of the corrective feedback was a mediator between an autonomy-supporting communication

style and self-determined motivation and external regulation, intentions to persist, well-being, and ill-being. The athletes' perceptions of autonomy support by their coaches were positively associated with their autonomous motivation, intentions to persist, and their well-being. Based on these results, the researchers suggested that coaches should not only provide corrective feedback in an autonomously supportive way, but they should also make sure the athletes perceive the feedback as legitimate.

Vlachopoulos and colleagues (2000) conducted a study investigating motivational profiles for sport participation. The purpose of the study was to investigate and identify subgroups that may differ in reasons for participating in sport and how these groups may differ in positive and negative motivational consequences. The researchers examined the influence of motivation on enjoyment, effort, positive affect, negative affect, attitude toward sport, intention to continue participation, satisfaction, and frequency of attendance. The researchers hypothesized that groups of athletes would consist of athletes with high scores on self-determined motivation and low scores on non-self-determined motivation; and high scores on both types of motivation. The study was comprised of two independent samples. Sample one consisted of 353 male and 236 female participants from sports clubs, community centers, and members of sports teams from two universities in England. Of these athletes, 37 competed at the recreational level, 220 at the club level, 33 at the district level, 99 at the county level, 71 at a regional level, 70 at the national level, and 57 at the international level. The sample represented 24 different sports. Sample two was very similar to the first sample in make-up with 305 males and 250 females from various competitive levels and sports. The SMS (Pelletier et al., 1995) was used to assess motivation in sport. Enjoyment-intrinsic interest was

defined as the degree to which the athletes enjoyed their sport participation and was measured using the Intrinsic Motivation Inventory (IMI; McAuley et al., 1989). Effort-importance, defined as the degree to which athletes exerted effort and the importance of doing well in training sessions, was measured by the effort-importance subscale of the IMI (McAuley et al., 1989). Positive and negative affect was assessed using the PANAS (Watson et al., 1988). The results of the study indicated that there were two distinct profiles that characterized athlete motivational patterns. The first profile included both strong non-self-determined and strong self-determined motivation. The second profile was the traditional self-determined model which was low non-self-determined motivation and high self-determined motivation. The first group reported greater enjoyment, effort, positive and negative affect, stronger positive attitude towards sport participation, stronger and more self-determined intentions to continue sport long term, and greater satisfaction compared to the group characterized by self-determined motivation only. These results were not consistent with previous research in SDT, however, Vlachopoulos and colleagues stated that this was due to the first group having stronger levels of self-determination than the second group. Stronger self-determined motivation may have off-set the strong non-self-determined motivation present in the first group.

Mallett (2005) conducted a study where an autonomy-supportive approach to coaching was applied for the Australian Olympic 2004 men's relay teams. This study was unique in that Mallett coached the teams in addition to conducting the study. Mallett combined knowledge and understanding from SDT into developing the motivational climate for the athletes and incorporated it into their training. In his autonomy-supportive

approach, such considerations as having meetings with athletes and personal coaches where athletes had “choice” and “say” in training content, training times, and uniforms were implemented. For example, athletes had the opportunity to determine the running order (4 X 400 relay) and the athletes’ personal coaches and athletes themselves were involved in developing the training schedule leading up to the Olympics. The opportunity to have a “say” shifted responsibility to the athletes by facilitating choice. The relay teams surpassed expectations. Although cause-effect cannot be established, the benefits of an autonomy-supportive coaching climate were supported in this study.

Reinboth, Duda, and Ntoumanis (2004) conducted a study to examine the relationships among coaching behavior with intrinsic need satisfaction and indices of psychological and physical well-being in athletes from a SDT framework. Specifically, the purpose of the study was to investigate the relationships among autonomy support, mastery focus, and social support to need satisfaction and indices of psychological and physical well-being in the athletes. The researchers hypothesized that autonomy support from the coach would predict perceptions of athlete autonomy; that mastery focus would predict perceived competence; and that perceived social support from the coach would predict perceptions of athlete relatedness. Finally, it was predicted that athlete fulfillment of psychological needs would predict well-being and be negatively related to ill-being. The sample was comprised of 265 male British adolescent soccer and cricket players. For measurement of the athletes’ perceptions of coach-autonomy support, seven items from the Health-Care Climate Questionnaire (Williams et al., 1996) were adapted to sport. The perceived focus of mastery and improvement by the coach was measured using the effort/improvement subscale of the Perceived Motivational Climate in



SportQuestionnaire-2 (PMCSQ-2; Newton et al., 2000). An adapted short form of the Social Support Questionnaire (SSQ6; Sarason, Sarason, Shearin, & Pierce, 1987) was used to assess athletes' perceptions of the degree of social support available on their team provided by their coach. To assess athlete autonomy satisfaction, the Need Satisfaction at Work Scale (Deci et al., 2001) was modified for sport. The satisfaction of the need for competence was captured by the 5-item perceived ability subscale of the IMI (McAuley et al., 1989) and the acceptance subscale of the Need for Relatedness Scale (Richer & Vallerand, 1998) measured the satisfaction of the need for relatedness. Subjective vitality was measured using the 6-item version of the Subjective Vitality Scale (SVS; Ryan & Frederick, 1997). The athletes' degree of intrinsic satisfaction with, and interest in sport, was measured using the Satisfaction/Interest in Sport Scale (Duda & Nicholls, 1992). Physical symptoms were measured by having the participants complete a physical symptom checklist (Emmons, 1991). The results of the study indicated that the athletes' perceptions of the coach as autonomy-supportive were positively related to their own perceptions of autonomy. Drawing from an AGT (Dweck, 1986; Nicholls, 1984) perspective, an athlete's perceptions of competence were positively predicted by perceptions that the coach was mastery focused. When the athletes perceived that the coach provided assistance and emotional support, it was a positive predictor of relatedness, as predicted by SDT. Autonomy was a positive but weak predictor for subjective vitality, intrinsic satisfaction, and interest for sport. The results of the study suggested that those athletes who perceive that they possessed good physical skills found sport participation intrinsically interesting, enjoyable, and energy enhancing. Finally,

indicators of positive or negative well-being were not predicted by perceptions of relatedness.

According to Amorose and Horn (2000), the coach-athlete relationship was important to fostering relatedness. The coach could strengthen this relationship by showing care, trust, and respect. Involving the athlete in the decision-making process and having optimally challenging goals also helped with fostering relatedness.

Sport does not occur in a vacuum, nor do athletes exist in an environment free of influences such as family and education demands. Boiché and Sarrazin (2007) used a SDT (Deci & Ryan, 1985; Ryan & Deci, 2000) framework to examine the relationship of sport and other life contexts such as friendship and education. The purpose of this study was to investigate the role of relational conflicts and instrumental relationships on athlete motivation in sport and other contexts such as school and friendship to enhance the understanding of sport persistence. The researchers predicted that higher levels of conflict would exist between sport, school, and friendship when low levels of self-determined motivation for sport, school, and, friendship were present. Conversely, it was hypothesized that high levels of self-determined motivation for sport, school, and friendship would be likely to be positively related to the perceived instrumentality of these relationships which would, in turn, positively affect sport involvement. The sample consisted of 255 female and 191 male students between the ages of 10-16 from two French high schools. A three-year correlational design with two data collection sessions one year apart was used. To measure motivation toward sport, the researchers used an abridged version of the SMS (Brière et al., 1995). Academic motivation was assessed through an abridged version of the Academic Motivation Scale (AMS; Vallerand, Blais,

Brière, & Pelletier, 1989; Vallerand et al., 1992, 1993) and an abridged version of the Interpersonal Motivation Inventory (Senécal, Julien, & Guay, 2003) was utilized for the assessment of friendship motivation. Inter-context conflict was assessed through the use of a scale developed by the researchers to assess conflict as a result of limited resources in time, energy, and attention. Sport participation data were gathered through the assessment of the time spent in sport during leisure time using a seven-day recall approach. The results of the study indicated that, when individuals had self-determined sport participation and friendship involvement, athletes had a positive perception for the attributes of sport. The researchers also found that participants who had high self-determination for sport participation were more likely to see educational demands as impeding on their sport goals. Furthermore, participation in sport increased over time for individuals that had higher levels of intrinsic motivation and lower levels of extrinsic motivation, more specifically introjected regulation, external regulation, and amotivation.

Mallett and Hanrahan (2004) used SDT (Deci & Ryan, 1985; Ryan & Deci, 2000), HMIEM (Vallerand, 1997), and AGT (Dweck, 1986; Nicholls, 1984) theoretical frameworks to conduct a quantitative study to investigate the motivational processes of elite athletes. The sample consisted of five female and five male elite Australian track and field athletes. Data were collected conducting semi-structured interviews with the athletes. Three major themes were identified from the results of the study. The first theme was that the athletes were highly driven by personal goals and accomplishments. A second finding was that the athletes possessed a strong self-belief in their abilities which was found to reflect favorable perceptions of competence. Third, the athletes perceived that their life revolved around their sport. The types of motivation in these

elite athletes was identified as intrinsic and/or self-determined in nature. At first glance, it may be assumed that such items as rewards or money were extrinsic motivators; however, the results of this study found that these elite athletes perceived these rewards and money as positive influences on their perception of competence, thus they were not extrinsic motivators.

Medic and colleagues (2007) conducted a study on the effects of scholarship on athletes. The purpose of the study was to examine the effects of athletic scholarships on the “present,” or current scholarship status, and “perceived future,” or future scholarship status of the athlete. The researchers hypothesized that scholarship athletes would report lower levels of intrinsic motivation than non-scholarship athletes. It was also hypothesized that intrinsic motivation would decrease in scholarship athletes if scholarships were viewed as unavailable (did not exist) and extrinsic motivation (external regulation) would increase for non-scholarship athletes should scholarships be viewed by the athletes as available. The sample was comprised of 70 U.S. Division I basketball scholarship athletes and 46 Canadian non-scholarship athletes. “Present” and “perceived future scholarship” status was measured using the SMS (Pelletier et al., 1995) with the present motivation framed with the priming statement “Why are you presently practicing/playing basketball?” For future motivation, the SMS was also used but the athletes were asked to change their scholarship status before completing the SMS again. The results of the study suggested that, for scholarship athletes, the possibility of losing their scholarship resulted in a decrease in the intrinsic motivation to experience stimulation as well as a decrease in intrinsic motivation to accomplish. For the non-scholarship players, the possibility of obtaining a scholarship led to an increase of

extrinsic motivation, specifically external regulation, and a decrease in the intrinsic motivation to accomplish.

### **Passion**

Vallerand and Miquelon (2007) stated that the concept of passion was based in part on SDT (Deci & Ryan, 1985; Ryan & Deci, 2000). Passion was defined as “a strong inclination toward an activity that people like, that they find important, and in which they invest time and energy” (Vallerand et al., 2003, p. 757). The construct of passion may be seen as representing “an important source of motivational energy underlying such persistent involvement that may be conducive to performance attainment” (Vallerand et al., 2008, p. 374).

Passion was considered by Vallerand et al. (2003) to be dualistic with two types of passion: harmonious passion (HP) and obsessive passion (OP). Harmonious passion and OP were distinguished by how the valued activity was internalized into the individual’s self-identification. Harmonious passion would occur when the activity was autonomously internalized and the person had made a free, conscious, contingency-free, choice to engage in the activity. These people did not feel compelled to do the activity but were at harmony with the activity and other aspects of their lives in such a way that the activity was an important part of the person but it did not control them. Obsessive passion occurred when there was a controlled internalization of the activity into the individual’s self-identification and normally occurred due to interpersonal and/or intrapersonal pressure felt on the person due to contingencies that affect the person’s self-esteem and social acceptance which were related to involvement of the activity. This

pressure led to the person feeling compelled to participate, thus, leading to conflict with other areas of the person's life.

### **Obsessive and Harmonious Passion**

In their first study of a series of studies, Vallerand and colleagues (2003, Study 1) attempted to validate the Passion Scale and assess the relationship between HP and OP and outcomes (e.g., flow, positive emotions, and concentration) experienced while engaged in activities. The sample consisted of 332 female and 203 male college students. Outcomes were assessed using the Flow Scale of Jackson and Marsh (1996) including subscales that assessed challenge, absence of self-consciousness, control, and measures which assessed positive emotions, anxiety, and concentration. The results of the study supported the dualistic approach. Harmonious passion was found to be associated with positive affect, OP was found to be associated with negative affect, and the Passion Scale was validated.

In their second study, Vallerand et al. (2003, Study 2) explored how generalizable and how long lasting the differences in affect towards activities were in relation to HP and OP. The purpose was to investigate whether HP and OP would be independent of intrinsic and extrinsic motivation and to assess future intentions of the athletes to participate. It was hypothesized that HP would be associated with increased positive affect, future intentions to participate, and would be unrelated to negative affect. Obsessive passion was anticipated to be unrelated to positive affect but related to negative affect and future intentions to participate. Two hundred and five male Canadian intercollegiate football players completed the instrument twice (beginning and end of the season). The instrument comprised of the Passion Scale, the SMS (Brière et al., 1995),

questions taken from the PANAS (Watson et al., 1988), and behavioral intention questions (Vallerand, Fortier, & Guay, 1997). The results of the study suggested that HP was associated with increased positive affect and OP was associated with negative affect over the season. However, HP was not a predictor as anticipated but OP was a predictor for future intention to participate (returning the following season). Vallerand and colleagues termed this intention as *rigid persistence* or returning to play the next season “no matter what.”

The purpose of Study 3 was to investigate *rigid persistence* revealed in Study 2. The Passion Scale (Vallerand et al., 2003) was completed by 59 recreational cyclists during the month of August then 6 months later in February. It was hypothesized that those who had cycled in the winter (February) would have higher OP in the summer (August) but would not differ in HP. The results of the study suggested that those cyclists who did cycle in the winter, putting them in dangerous winter weather found in Quebec, had higher levels of OP and that OP may lead to *rigid persistence*.

Building upon the results of Study 3, the purpose of Study 4 was to investigate whether OP would lead to *rigid persistence* in the form of self-destructive behavior. Vallerand and colleagues (2003, Study 4) gave 146 gamblers the Passion Scale and the revised South Oaks Gambling Screen (SOGS; Lesieur & Blume, 1993). Approximately half (71) of the participants were part of the Montreal Casino self-exclusion program which was designed to allow individuals with serious gambling problems to ask the Casino to ban them from entry for at least one year. It was hypothesized that the self-excluded participants would have higher OP but no difference was expected in the HP levels. The results of the study indicated that gamblers in the program had higher levels

of OP than the other gamblers. However, there were no differences in HP levels. Through these studies, it has been suggested that HP and OP led to persistence, however; OP may lead to *rigid persistence* and self-destructive behavior. Harmonious passion has also been suggested to be associated with positive affect and OP associated with negative affect.

### **Affective Experiences of Passion**

Three other studies were conducted by Vallerand et al. (2006) investigating affective experiences and passion. Study 1 (Vallerand et al., 2006) focused on the determinants of passion, specifically the value of the activity and personality orientation. It was anticipated that a personality with high autonomy and high sport valuation would be a positive predictor of HP. Conversely, OP would be positively predicted by a controlling personality orientation and high sport valuation. The instrument was completed by 206 recreational athletes participating in 5 sports and consisted of the Passion Scale (Vallerand et al., 2003), the Global Motivation Scale (GMS; Guay, Mageau, & Vallerand, 2003), and sport valuation questions. The results of the study indicated that high sport valuation and autonomous personality positively predicted HP and high sport valuation and a controlling personality positively predicted OP.

Building upon Study 1, Study 2 (Vallerand et al., 2006) further investigated the integrative sequence by investigating the outcomes of positive and negative affect, vitality, and satisfaction in sport. It was hypothesized that HP would positively predict positive affect and vitality and OP would be negatively related or unrelated to positive affective variables. Conversely, OP would be positively related to negative affect and HP was expected to be negatively related or unrelated to negative affect. The sample was



comprised of 210 competitive basketball players. The results of the study indicated that HP was associated with positive affect and negatively related to negative affect and OP was related to negative affect and unrelated to positive affect.

The purpose of the final study (Vallerand et al., 2006, Study 3) was to test the entire integrative sequence involving determinants and affective experiences. Vallerand and colleagues postulated that high levels of sport valuation coupled with an autonomous personality would lead to HP. Alternatively, high sport valuation coupled with a controlling personality would lead to OP. Harmonious passion was also anticipated to positively predict SWB and OP would be negatively related or unrelated to SWB. The sample was comprised of 107 elite water polo and synchronized swimmers. The athletes completed an instrument in October and another instrument four months later in February. The first instrument consisted of questions from the Passion Scale (Vallerand et al., 2003), the GMS (Guay et al., 2003), and a sport valuation question. The second instrument consisted questions from the Satisfaction with Life Scale (Blais, Vallerand, Pelletier, & Brière, 1989), the short PANAS scales (Watson et al., 1988), and a SWB index. The results of the study indicated that sport valuation and autonomous personality positively predicted HP and sport valuation and a controlling personality predicted OP. Also, HP in October positively predicted SWB in February and OP was negatively related to SWB.

### **Passion and Coach-athlete Relationship Quality**

According to Jowett (2005), the coach-athlete relationship was a key for optimal functioning, thus, the coach was highly influential in the process of developing HP in their athletes. Given the results of previous research on passion in the sport setting

(Vallerand et al., 2003, Study 1; Vallerand et al., 2006, Studies 2 and 3), it was suggested that HP could lead to high-quality coach-athlete relationships. Conversely, OP was suggested as being unrelated or negatively related (Vallerand et al., 2003, Study 1; Vallerand et al., 2006).

Lafrenière and colleagues (2008) conducted two studies focused on passion in the coach-athlete relationship. The first study investigated HP and OP in the coach-athlete relationship from the athletes' perspective. It was posited by the researchers that HP would positively predict high quality coach-athlete relationships, OP would be unrelated or negatively related, and HP would facilitate the relationship the most. The participants were 81 male and 76 female British college athletes participating in hockey, rugby, and netball at various competition levels. The instrument consisted of questions from the Passion Scale (Vallerand et al., 2003) and the Coach-Athlete Relationship Questionnaire (CART-Q; Jowett & Ntoumanis, 2004). The results of the study indicated that HP positively predicted all dimensions of relationship quality (commitment, closeness, and complementary) and was suggested to be associated with a higher quality coach-athlete relationship but OP was associated with only commitment.

In their second study, Lafrenière et al. (2008) focused on the coaches' perception of the coach-athlete relationship. It was anticipated that HP for coaching would lead to positive emotions and OP would be either unrelated or negatively related. A more fulfilling coach-athlete relationship was anticipated to have positive outcomes for the coaches' SWB. The questionnaire was completed by 106 National Coaching Certification Program of Canada (NCCP) French-Canadian coaches representing gymnastics, basketball, and football. The instrument consisted of questions from the

Passion Scale (Vallerand et al., 2003), three items assessing positive emotions, the Interpersonal Relationship Quality Scale (Senécal, Vallerand, & Vallières, 1992), four items from the Satisfaction with Life Scale (Blais et al., 1989), and the short PANAS scales (Watson et al., 1988). The results of the study indicated that positive emotions mediated the HP/quality of coach-athlete relationship and positive outcomes for the coaches' SWB was due to a fulfilling relationship with their athletes.

### **Summary**

There was limited knowledge on the relationship between self-determined motivation, passion, and athlete satisfaction throughout a competitive season. Both self-determined motivation and passion have been identified as potentially important contributors to athlete satisfaction (Reinboth et al., 2004; Vallerand et al., 2006, Study 2; Vlachopoulos et al., 2000).

The relationships among self-determined motivation, passion, and athlete satisfaction were specifically investigated over the course of one competitive season. Currently, there are no other known studies that have addressed the changes in motivational and passion profiles of Division I athletes longitudinally.

## **CHAPTER III**

### **METHODOLOGY**

#### **Purpose of the Study**

The purpose of this study was to investigate the pattern of relationships among self-determined motivation, passion, and athlete satisfaction in intercollegiate athletes over time, specifically over one competitive season. Understanding the nature of these relationships over time may ultimately help in facilitating athlete satisfaction in college sport. To date, no research has been conducted to determine how these patterns of relationships change over the course of a competitive season. An additional purpose was to identify the causes of these changes in relation to social and psychological influences.

#### **Research Design**

This study was largely exploratory in nature as additional on the topic has not been published. A mixed-methods research design was used that incorporated both deductive and inductive approaches to data collection and quantitative and qualitative forms of data. Individual and group level (by team) data were examined with data collected at three different times over the course of the season.

The purpose of the quantitative methodology was to determine whether a theoretically-consistent pattern of relationships was present over time among the variables of self-determined motivation, passion, and athlete satisfaction. The purpose of the qualitative portion of the research was to examine athletes' explanations for their responses to the variables of interest. In order to establish a baseline (Time 1), an

assessment was made early in the season for both teams. A second (Time 2) assessment was completed during the middle portion of the season and the third (Time 3) assessment was completed toward the end of the season. These data collection times were dependent upon athlete and coach consent. Follow-up interviews with athletes were performed to gather specific information unattainable from the survey instruments in reference to the participants' experiences.

### **Participants**

The sample of participants for this study were athletes on the official rosters of the women's soccer team and men's football team competing at the NCAA Division I level at a university located in the Rocky Mountain region. The university has an undergraduate population of approximately 10,000. In terms of level of competition, the women's soccer team competes at the highest level for collegiate sport in the country and the men's football team competes at the second-highest level which is the Football Championship Subdivision (FCS) level. This sample represented a purposeful sample and each team represented the greatest number of Division I athletes by sex on an athletic team roster at this university with approximately 30 members on the women's soccer team and 85 players on the men's football team. The teams also had the largest number of scholarship athletes at this university with 14 and 63 scholarship athletes, respectively (NCAA, 2012-2013).

All athletes on the official roster of each team were invited to participate in the quantitatively-based questionnaire portion of the study. Four athletes also participated in the interview portion of the study. These athletes were selected for involvement in the qualitative portion of the study based primarily on the analysis of their responses from the

quantitative portion of the study. There were two athletes from the women's soccer team and two from the men's football team selected for the interview portion of the study.

### **Instruments**

A mixed-methods research design was utilized and included a questionnaire which assessed the variables of motivation, passion, and athlete satisfaction (see Appendix B) and an interview portion was subsequently conducted that was inductive in nature. The variables of interest included the three forms of motivation identified in SDT (amotivation, intrinsic motivation, and extrinsic motivation), passion in both forms (HP and OP), and athlete satisfaction.

#### **Self-Determined Motivation**

The Sport Motivation Scale (Pelletier et al., 1995) was the quantitative instrument used to assess self-determined motivation. The instrument was used to assess levels of intrinsic motivation, extrinsic motivation, and amotivation in these athletes in relation to their collegiate sport involvement. Intrinsic motivation was assessed in relation to intrinsic motivation to know, to accomplish, and to experience stimulation. Three of the four extrinsic motivation dimensions identified within SDT (identified regulation, introjected regulation, and external regulation) were also assessed through this measure. Integrated regulation was not included in the SMS instrument because of the difficulty in the development of items that could differentiate this dimension from identified regulation (Vlachopoulos et al., 2000). Amotivation was also assessed through the SMS as a unidimensional variable.

The SMS is comprised of 28 questions relating to the question "Why do you participate in your sport?" The stem used for this study was "Why do you participate in

soccer?” or “Why do you participate in football?,” respectively, for the members of each team. The question “For the pleasure I feel in living exciting experiences” was a sample question that measured the intrinsic motivation to experience stimulation. A sample question that measured the intrinsic motivation to know was “For the pleasure it gives me to know more about the sport that I practice” and a sample question that measured the intrinsic motivation to accomplish was “Because I feel a lot of personal satisfaction while mastering certain difficult training techniques.” A possible response to the amotivation subscale was “It is not clear to me anymore” and an example of a question measuring the extrinsic motivation of external regulation was “To show others how good I am at my sport.” Participants responded on a Likert-type scale ranging from 1 (*Does Not Correspond At All*) to 7 (*Corresponds Exactly*). The subscales of the SDT continuum included the three types of intrinsic motivation (to know, to experience stimulation, and to accomplish), three types of extrinsic motivation (identified regulation, introjected regulation, and external regulation), and amotivation.

In the original validation studies conducted by Pelletier and colleagues (1995), the SMS was supported for use with both Canadian individual and team-sport athletes (Pelletier et al., 1995). The two studies were conducted to examine the factor structure of the SMS through confirmatory factor analysis (CFA) to assess the internal consistency of the seven subscales, to assess the construct validity of the scale, and to assess the temporal stability, or test-retest, reliability of the instrument. The first sample consisted of 319 male and 274 female university athletes competing in basketball, volleyball, swimming, ice hockey, football, track and field, cross country, soccer, and rugby. The second sample consisted of 31 female and 19 male soccer players. The results of these

studies indicated that the SMS had satisfactory internal consistency. The scale also demonstrated a 7-factor structure corresponding to the different forms of motivation the scale attempted to measure. Adequate construct validity was obtained and moderate to high indices of temporal stability were found.

Martens and Webber (2002) conducted a study with the purpose of assessing the validity of the SMS and to assess the value of its use with American college athletes. The sample consisted of 270 athletes from three Midwestern universities representing the NCAA Division I level, the National Athletic Intercollegiate Association (NAIA) Division I level, and the NCAA Division III level. There were 161, 68, and 41 athletes who participated in the study from these levels, respectively, representing 9 sports. In addition to the SMS, the athletes also completed the Motivation for Physical Activities Measure-Revised (MPAM-R; Ryan, Frederick, Lepes, Rubio, & Sheldon, 1997) to measure intrinsic and extrinsic motivation. Overall, the results provided support for the reliability and validity of the SMS for this population. There have been additional studies which have used the SMS with the student-athlete population that also provided additional support for the reliability and validity of the SMS (Amorose & Anderson-Butcher, 2007; Medic et al., 2007; Vallerand et al., 2003, Study 2; Vlachopoulos et al., 2000).

### **Passion**

The Passion Scale (Vallerand et al., 2003) was used to assess passion in sport. Participants referred to their particular sport (women's soccer or men's football) when completing the Passion Scale questionnaire. Much like the SMS, a 7-point Likert scale was used where 1 = *Not Agree At All* and 7 = *Very Strongly Agree*. The Passion Scale



consisted of six items (i.e., “This activity is in harmony with the other activities in my life” and “This activity reflects the qualities I like about myself”) associated with HP and six items (i.e., “I have almost an obsessive feeling for my activity” and “This activity is so exciting that I sometimes lose control over it”) associated with OP. The scale also included four items used to assess passion for the activity. Participants were asked about the extent to which they valued the activity, devoted time to it, loved it, and viewed it as a passion.

Vallerand et al. (2003, Study 1) conducted a study that supported the validity of the Passion Scale in an investigation in which 539 college students participated. The questionnaire included the Passion Scale and questions regarding outcomes such as feeling immersed in the activity and positive or negative affect after the activity. Elements related to the definition of passion were also included which entailed questions specifically on the valuation of the activity for the students. Valuation was measured by elements of time and energy spent, level of conflict between the passionate activity and other activities, and Aron, Aron, and Smolan’s (1992) IOS scale measuring the extent to which the activity was considered to be part of one’s core self. The students were asked to respond in relation to an activity they loved, valued, and in which they invested considerable time and energy. Results of the study supported the dualistic approach toward passion as either HP or OP.

Other studies have also provided support for the validity of the Passion Scale (Carbonneau, Vallerand, Fernet, & Guay, 2008; Vallerand et al., 2006, Study 1). Carbonneau and colleagues (2008) conducted a study with the purpose of investigating the role of passion in teachers’ work satisfaction, burnout symptoms, and perceptions of

positive student classroom behaviors. The sample consisted of 373 women, 119 men, and 2 unspecified French-Canadian teachers ranging from the elementary to vocational education levels. The questionnaire was completed by 653 participants during the month of March (Time 1). Of the 653 participants, 494 also completed the questionnaire three months later in June. In reference to the validity of the scale, the four items used to assess passion were highly intercorrelated with Cronbach's alpha levels of .79 and .78 at Times 1 and 2, respectively. HP and OP items were found to be unrelated. The Cronbach's alpha values for the subscales of HP and OP were .87 and .76, respectively, at Time 1 and .87 and .80, respectively, at Time 2. A confirmatory factor analysis of the Passion Scale indicated an acceptable fit to the data.

Another study that has provided support for the validity of the Passion Scale was conducted by Vallerand and colleagues (2006, Study 1). The purpose of this study was focused on the determinants of passion, personality orientation (controlling or autonomous), and levels of passion. The questionnaire was completed by 119 females, 84 males, and 3 not specified individuals participating in basketball, football, hockey, skiing, or swimming at the recreational sport level. The questionnaire consisted of the Passion Scale (Vallerand et al., 2003), the GMS (Guay et al., 2003) for personality orientation, and sport valuation questions. In reference to the validity and reliability of the scale, the results from a confirmatory factor analysis confirmed the two-factor structure of the Passion Scale. It has also been proposed that the two passion subscales were positively correlated with the elements of passion. These elements included activity valuation, interest, the activity perceived as being a passion, and the extensive investment

of time. The two subscales have also shown moderate to high levels of internal reliability with Cronbach's alpha levels of .80 and .89 for HP and OP, respectively.

The Passion Scale has also been shown to be consistent with theory about the dualistic nature of passion in activities such as dramatic arts (Vallerand et al., 2007, Study 1), education (Vallerand et al., 2007, Study 2), sports (Vallerand et al., 2006), music (Mageau et al., 2009), work (Carbonneau et al., 2008), and various leisure activities (Stenseng, 2008; Vallerand et al., 2003, Study 1).

### **Athlete Satisfaction**

The Athlete Satisfaction Questionnaire (ASQ; Riemer & Chelladurai, 1998) is a multi-dimensional survey instrument that attempts to measure the most salient features of an athlete's satisfaction. The satisfaction level of the athlete was assessed in relation to five dimensions of satisfaction with performance, leadership, team, organization, and individual satisfaction outcomes. These 5 general dimensions incorporated 15 subscales that included individual performance (3 items), team performance (3 items), ability utilization (5 items), strategy (6 items), personal treatment (5 items), training and instruction (3 items), team task contribution (3 items), team social contribution (3 items), ethics (3 items), team integration (4 items), personal dedication (4 items), budget (3 items), medical personnel (4 items), academic support services (3 items), and external agents (4 items). The complete questionnaire has a total of 56 questions presented on a 7-point Likert scale ranging from 1 (*Not At All Satisfied*) to a 7 (*Extremely Satisfied*). This study incorporated only 5 of the 15 subscales that related to individual performance and coaching behaviors and there were a total of 22 questions included. The specific subscales included were individual performance, ability utilization, strategy, personal

treatment, and training and instruction. The subscales completed were selected because they were considered to be the most relevant to the purposes of this investigation and the inclusion of all subscales would have resulted in an unnecessarily long questionnaire.

The ASQ has been shown to be psychometrically sound across a variety of settings (Bray, Beauchamp, Eys, & Carron, 2005; Riemer & Chelladurai, 1998; Sullivan & Gee, 2007). Eys, Carron, Bray, and Beauchamp (2003) conducted a study with the purpose of investigating the relationship between athletes' perceptions of role ambiguity and satisfaction. The sample consisted of 46 female and 55 male club and inter-university soccer athletes. The ASQ was part of the questionnaire completed by the participants in the early part of the season and was also completed 12-14 weeks later. One hundred and one participants completed the first assessment and 73 completed the second assessment. Cronbach's alpha values ranged from .72 to .93 during the early season assessment and from .58 to .95 for the late season assessment. All measures met the suggested .70 criterion except for the subscale of personal dedication which was removed from future analyses.

Sullivan and Gee (2007) conducted a study with the purpose of investigating the relationship between team communication and athletic satisfaction. The sample consisted of 41 male and 38 female athletes competing in hockey, basketball, soccer, volleyball, and baseball that completed the ASQ. Cronbach's alpha levels ranged from .57 to .92. Two athlete satisfaction measures, academic support and personal dedication, had Cronbach alpha levels below 0.70.

## Qualitative Instruments

In qualitative research, the researcher attempts to “understand the meaning people have constructed” (Merriam, 2009, p. 13). The purpose of qualitative research is to gain an understanding of how individuals “make sense out of their lives, delineate the process of meaning-making, and describe how people interpret what they experience” (Merriam, 2009, p. 14). Crotty (1998) identified four pillars of the research process that a researcher must define: (a) epistemology, (b) theoretical perspective, (c) methodology, and (d) methods. In reference to epistemology, the constructivist approach was used for this study. From this perspective, knowledge was constructed through personal experiences, life, and personal engagement with activities that provided learning. Through a constructivist approach, an understanding of the interaction of the human thought process and the world was sought (Crotty, 1998).

An interpretivist theoretical perspective was used in this study to understand the meaning of athletes’ experiences. Interpretivism was an attempt to explain human and social reality through the lived experiences of individuals. The meanings of these perceived experiences were obtained by gathering data which was achieved “by way of unstructured interviews in which only open-ended questions, if any, are asked” (Crotty, 1998, p. 83).

The methodology used in this study was phenomenology. A phenomenological study describes the meanings associated with the lived experiences of a phenomenon or concept (Creswell, 2007). Phenomenology aims to reduce the individual experience to a description of a universal substance. The researcher collected data from individuals, in this case the athletes, who had experienced the phenomenon and developed a description

of the experience. The description developed by the researcher aimed to answer the questions of “what” and “how” the individuals experienced the phenomenon (Creswell, 2007). The athletes from both samples provided very unique experiences that added insight to the study.

The method utilized in this study entailed in-depth, open-ended questions with the purpose of capturing the “lived experiences” of the athletes selected for interviews. Although the variables of interest were targeted for the interviews, the four athletes who participated in this phase of the data collection were encouraged to elaborate and discuss any and all information they felt was pertinent to the discussion taking place and could add to explaining their lived experiences. For example, the researcher asked about one variable that sparked a thought in the interviewee about another subject that led to discussion which eventually shed light on additional topics.

### **Documentation**

According to Creswell (2007), there are four broad areas of data collection in qualitative research: observations, interviews, documents, and audiovisual materials. This study focused on the interview method as the primary method used for the qualitative portion. An open-ended interview protocol was used as the athletes were allowed, and encouraged, to elaborate on their responses. Follow-up probes were also used to allow participants to elaborate on their responses and to clarify their statements. Although there were no set guidelines for the interviews, the interviews were intended to address the variables of interest. Questions were open-ended which allowed both the athletes and the researcher to elaborate on questions and/or seek clarification based on

responses. On average, the interviews were approximately an hour and a half in length for each athlete.

### **Study Rigor**

Creswell (2007) stated that there are eight common validation strategies used in qualitative research and recommended that qualitative researchers engage in at least two of them in any given study. Adhering to these guidelines, member checking, researcher bias, and triangulation were used in this study.

#### **Member Checking**

Member checking is a technique that is used for the purpose of increasing the accuracy of the information gathered in the interview process. According to Lincoln and Guba (1985), member checking “is the most critical technique for establishing credibility” (p. 314). This technique involved providing the interviewees with the data and analyses and having them comment on the accuracy of the interpretation of their interviews. Member checking was conducted to add credibility to the findings. Detailed interview transcripts were provided (via email) to the interviewees which provided the athletes with the opportunity to clarify any comments or interpretations. Each of the four athletes interviewed confirmed the transcription was accurate and that no additional clarification was needed. During the interviews, the researcher discussed the athletes’ comments and interviewees had the opportunity to clarify interpretations. Athletes were given the contact information for the researcher should they have any questions or had any further thoughts they may have not provided during the interviews. No athletes provided any further material.

## **Researcher Bias**

Also known as the researcher's position or reflexivity, researcher bias was also taken into consideration for this study. Clarification of possible research bias helps the reader to understand how the researcher came to their interpretations of the data (Merriam, 2009).

It was assumed that researcher bias is present to some extent in every qualitative study because researchers may have their interpretations and conclusions shaped by their own previous experiences. The researcher's previous experience included being a former college scholarship athlete and former professional athlete. Furthermore, the researcher worked with the athletic department at this university. Consequently, previous experiences may have had some effect on the data collection and interpretation process.

## **Triangulation**

This study utilized multiple sources of data collection. Interviews, observations of the athletes, and documents such as those available from the Sports Information Director, the athletic department website, and print media were utilized. The interviews provided most of the information used in this study as the experiences of the four athletes were documented, compared, and analyzed in relation to the variables of interest. Observations of the athletes were also employed. The researcher attended two home games for the women's soccer team and two home games for the men's football team. A handful of practices were also attended for both teams as well as a few team meetings for the men's football team. The interactions of the athletes with their coaches and teammates were observed on various occasions. Information from the media was also a part as these provided information about the teams and the athletes to include team win-



loss records, performance statistics, playing status, biography about the athletes, and injuries.

## **Procedure**

### **Design**

The SMS, the Passion Scale, and the five subscales of the ASQ were used to measure self-determined motivation, passion, and athlete satisfaction of the athletes at three points during the season. The data collection took place in the beginning, middle, and towards the end of the season for each team. All assessments were contingent upon coaches' preferences. There were a total of four athletes, two from each team that participated in the interview portion.

### **Data Collection**

Every administration of the survey was conducted in person for both teams in their team meeting room. For each assessment, it was stated by the researcher that the questionnaire was to be applied to their sport experience (soccer or football) at that specific point of time in their season. For the women's soccer team, the first assessment was completed during the beginning of the season after their fourth game at which time their record was one win and three losses. This assessment occurred on a weekday just prior to a normal practice two days before the start of the fall academic semester. The second assessment was completed approximately six weeks later and their record at this point was six wins, five losses, and two ties. This assessment also occurred just before a normal weekday practice. It should be noted that the team was on a three game winning streak and was undefeated in conference play with three wins and zero losses at this time. The final assessment was completed approximately three weeks later and their record at

that point was seven wins, seven losses, and five ties. The team meeting room was again used for questionnaire completion prior to a weekday practice. It should also be noted that during the previous weekend the team lost and tied in their final two conference games which resulted in the team not making the conference tournament. The women's soccer team had one remaining non-conference game left in which they lost. The selection of the athletes interviewed was based on the data analysis from their responses to assessment three. The *most satisfied* and *least satisfied* athlete, measured by their mean responses for the ASQ questionnaire, were used in their selection. Both interviews were conducted at the convenience of the athlete. The interviews were digitally (audio) recorded and the athletes were provided verbatim transcripts for their records and for member-checking purposes.

The first quantitative assessment for the men's football team was completed before the beginning of the season and immediately after the completion of fall camp a few days before the start of the fall academic semester. It was completed in the team meeting room before a team meeting. The second assessment was completed approximately seven weeks later and the team's record at that point was one win and four losses. The survey was completed on a Sunday after a conference loss and just before a team meeting. The final assessment was completed approximately four weeks later on a Sunday, but this time the team had been victorious against a conference foe the day before. The team's record was three wins and six losses at that point. The team would close out the season with two more victories resulting in a five win, six loss record which represented their most victories in seven years since joining the ranks of the FCS. It should be noted that the previous year the men's football team was winless. The final

quantitative assessment was used for selection of athletes for interviews. Although selection was based on their responses for satisfaction, rapport with the athletes was also a factor. The researcher believed that the rapport between the researcher and the interviewees from the men's football team due to an existing relationship provided more access, more availability, and more honesty in the interview sessions. The interviews were digitally (audio) recorded and the athletes were provided verbatim transcripts for their records and for member-checking purposes.

The data remained confidential. Names of the individuals were needed to track the questionnaire data for the three assessments and email addresses were needed to contact those who participated in the interview portion of the study. In addition to the name and email of the participant, the only other personal information that was identifiable was academic class status, scholarship status, and the sport team. For example, "Senior, scholarship athlete, football." Only the researcher and the committee chair (Dr. Robert Brustad) are privy to the hardcopy questionnaires, associated data, or e-files that resulted from the study. This information was stored in a locked file in the office of the Dr. Robert Brustad.

### **Informed Consent**

To be consistent with IRB and ethical standards, the informed consent process was explained and each athlete had the opportunity to choose to participate or to choose to discontinue their participation at any time during any assessment and/or interview. It was made clear that survey responses and interview information would remain confidential and that their participation was voluntary. The researcher stated that, if an individual decided not to participate in this study, that he or she could simply leave the

questionnaire blank or, if at an interview, to inform the researcher immediately of this decision. See Appendix A for consent form.

One item should be discussed in reference to completing the questionnaires and participating in the interviews. The athletes from both teams may have been influenced to participate by the fact that their coaches supported their participation in this study. In this sense, they may have felt pressured to participate. Every effort was made to stress that participation was voluntary and coaches were not aware which athletes participated in the survey or the interview portion.

### **Data Analysis**

For the quantitative portion, unusable or incomplete questionnaires were not included in the statistical analysis. For assessing change over time for the variables, only the individual cases that were present at all three assessments were included in the analysis. The variable of intrinsic motivation was comprised of three subscales (to know, to experience stimulation, and to accomplish). The variable of extrinsic motivation was also comprised of three subscales (identified regulation, introjected regulation, and external regulation). Satisfaction was comprised of five subscales (individual performance, ability utilization, strategy, personal treatment, and training and instruction). Cronbach's alpha statistic was calculated to assess the internal consistency for each scale and subscale. A .70 criterion was used as this level was generally considered an acceptable level of internal consistency for psychological instruments. Each variable was tested for normality using the Kolmogorov-Smirnov test statistic; when  $p$  - value was  $> .01$  then the data were considered normally distributed. To assess change over time, RM ANOVA was used. Post hoc analysis was then performed on

those variables that were found to change significantly over time. Correlational analyses were performed to analyze the relationships among the variables. Finally, cluster analysis was employed to identify unique clusters of athlete variables that presented themselves for each assessment for both sports.

For the qualitative portion of the study, phenomenological analysis was used. Creswell (2007) used a simplified version of the Stevick-Colaizzi-Keen method discussed by Moustakas (1994) which highlighted describing personal experiences with the phenomenon under study. This method consisted of developing a list of significant statements, taking the significant statements and grouping them into larger units of information, writing a description of *what* the participants in the study experienced with the phenomenon, writing a description of *how* the experience happened, and finally writing a composite description of the phenomenon incorporating both the textural and structural descriptions. This procedure was followed in the present study.

For this study, all data, recordings, and transcripts were reviewed several times to ensure the most pertinent information was used. This process allowed the researcher to separate data into specific categories or themes. Once the themes were established, another review was completed to place the data into their corresponding themes.

## **CHAPTER IV**

### **RESULTS**

The primary purpose of this study was to investigate the relationships among self-determined motivation, passion, and athlete satisfaction over time, specifically over one competitive season for Division I athletes. In order to address the primary research questions, the variables of motivation, passion, and athlete satisfaction were assessed for both the women's soccer and men's football teams. Follow-up interviews were also employed to gather additional in-depth information.

#### **Descriptive Analyses**

Each instrument for each assessment with both of the teams was examined for internal consistency to determine if the overall scale and subscales reliably measured the variables they were intended to measure. Each instrument was assessed in relation to a Cronbach's alpha criterion of .70, which generally was considered to be an acceptable level of internal consistency for psychological instruments. Values for the three assessments for the total SMS with the women's soccer team were .82, .86, and .92, respectively, across Times 1 to 3. The Cronbach alpha levels for the subscales for assessment one ranged from .74 (extrinsic motivation) to .89 (intrinsic motivation). For the second assessment, these same values ranged from .80 (extrinsic motivation) to .91 (intrinsic motivation) and, for the final assessment these values ranged from .77 (amotivation) to .95 (intrinsic motivation). For the men's football team, values for the three assessments for the total SMS were .89, .91, and .93, respectively, across Times 1 to

3. The Cronbach alpha levels for the subscales for assessment one ranged from .70 (amotivation) to .90 (intrinsic motivation). For the second assessment, these values ranged from .83 (amotivation) to .94 (intrinsic motivation). For the third assessment, these values ranged from .86 (amotivation) to .95 (intrinsic motivation).

For the three assessments of the Passion Scale with the women's soccer team, the overall alpha values were .82, .81, and .89, respectively. The HP subscale values were .79, .79, and .78, respectively, and the OP subscale values were .73, .57, and .82, respectively, across the three assessments. For the men's football team, the overall alpha values were .91, .92, and .94, respectively. The HP subscale values were .84, .86, and .90, respectively, and the OP subscale values were .82, .81, and .90, respectively, across the three assessments.

For the three assessments with the women's soccer team for the ASQ, the overall alpha values ranged from .96 to .97. The subscale values ranged from .76 (individual performance) to .95 (ability utilization) for assessment one; from .82 (training and instruction) to .95 (strategy) for assessment two; and from .79 (training and instruction) to .96 (ability utilization) for assessment three. For the men's football team, the overall alpha values ranged from .95 to .97. The subscale values ranged from .77 (individual performance) to .90 (strategy) for assessment one; from .81 (training and instruction) to .94 (strategy) for assessment two; and from .85 (individual performance) to .96 (ability utilization) for assessment three.

Means and standard deviations were also obtained for the variables of interest with both teams. Data were collected on three occasions for each team on the variables of intrinsic motivation, extrinsic motivation, amotivation, OP, HP, and satisfaction. Each

data set was tested for normal distribution to make sure normality assumptions were not violated. Subsequently, the research questions were addressed through inferential statistics.

The sample sizes for the three assessments for the women's soccer team were 31, 26, and 22 athletes, respectively, and for the men's football team there were 85, 87, and 85 athletes, respectively, who completed the questionnaires at all three assessments. The three subscales of intrinsic motivation were incorporated into one index. Extrinsic motivation and satisfaction values were also incorporated into single indices. For intrinsic motivation, the mean values obtained for the women's soccer team were 4.88 ( $SD = 1.05$ ) and the mean for the men's football team was 5.16 ( $SD = 1.13$ ). These values were similar to values obtained by Medic et al. (2007) with other university level athletes. Intrinsic motivation values on the various subscales (to experience stimulation:  $x = 5.31$ ,  $SD = 1.05$ ; to accomplish:  $x = 4.95$ ,  $SD = .92$ ; to know:  $x = 4.69$ ,  $SD = 1.30$ ) and extrinsic motivation (identified regulation:  $x = 4.78$ ,  $SD = 1.07$ ; introjected regulation:  $x = 4.08$ ,  $SD = 1.35$ ; external regulation:  $x = 4.27$ ,  $SD = 1.39$ ) were similar to the values found by Medic et al. (2007). For both teams in this study, the athletes had higher values of intrinsic motivation than extrinsic motivation and amotivation at all assessments.

The overall mean values for OP were 3.15 ( $SD = 1.08$ ) for the women's soccer sample and 4.00 ( $SD = 1.49$ ) for the men's football sample. These values were lower for OP ( $x = 4.53$ ,  $SD = 1.37$ ) than what Vallerand and colleagues (2008) found in swimmers and synchronized swimmers competing at a similar level. The mean value for HP for the women's soccer team was 5.00 ( $SD = .99$ ) and 5.13 ( $SD = 1.16$ ) for the men's football team. These values were similar to values obtained by Vallerand et al. (2007).



The mean value for satisfaction for the women's soccer sample was 4.02 ( $SD = 1.17$ ) and 4.71 ( $SD = 1.19$ ) for the men's football sample. These values were lower than what Eys and colleagues (2003) found in club and inter-university soccer athletes where mean values were 4.81 ( $SD = 1.23$ ) for individual performance; 4.99 ( $SD = 1.36$ ) for ability utilization; 5.10 ( $SD = 1.11$ ) for strategy; 5.51 ( $SD = 1.09$ ) for personal treatment; and 5.50 ( $SD = 1.00$ ) for training and instruction. The data are summarized in Tables 1 and 2.

Table 1

*Response Means and Standard Deviations for Women's Soccer Team*

Scale/Subscale	Time 1 ( $N = 31$ )		Time 2 ( $N = 26$ )		Time 3 ( $N = 22$ )	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
IM	4.95	0.92	4.65	0.92	4.88	1.00
EM	3.94	0.84	4.21	0.85	4.37	1.00
AM	1.73	0.90	2.11	1.33	1.66	0.69
OP	3.09	1.09	3.22	0.95	3.16	1.25
HP	5.20	0.94	4.84	1.08	4.89	0.95
Satisfaction	4.30	1.06	3.96	1.28	3.71	1.16

*Note.* IM = Intrinsic Motivation, EM = Extrinsic Motivation, AM = Amotivation, OP = Obsessive Passion, and HP = Harmonious Passion.

Table 2

*Response Means and Standard Deviations for Men's Football Team*

Scale/Subscale	Time 1 (N = 85)		Time 2 (N = 87)		Time 3 (N = 85)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
IM	5.26	1.05	5.22	1.13	5.01	1.21
EM	4.02	1.19	4.31	1.21	4.36	1.16
AM	2.22	1.13	2.21	1.19	2.53	1.44
OP	3.89	1.46	4.16	1.42	3.97	1.58
HP	5.31	1.07	5.17	1.17	4.91	1.23
Satisfaction	4.87	1.11	4.61	1.22	4.64	1.25

*Note.* IM = Intrinsic Motivation, EM = Extrinsic Motivation, AM = Amotivation, OP = Obsessive Passion, and HP = Harmonious Passion.

### **Inferential Analyses**

In the inferential analyses, two questions were addressed. The first question was “What are the motivational characteristics of college athletes and how dynamic are these motivational profiles throughout a season?” The second question was “What was the relationship among motivation, passion, and satisfaction throughout a season?” Cluster analyses were also conducted for each team for assessments one and three followed by the interview data from this study.

Prior to conducting these inferential tests, the normality of the response distribution was examined for the total SMS, Passion Scale, and ASQ as well as their subscales (intrinsic motivation, extrinsic motivation, amotivation, harmonious passion, obsessive passion, and satisfaction). The Kolmogorov-Smirnov test statistic was used to test for normal distribution. With this analysis, the data were considered to be normally

distributed when the  $p$ -value is greater than .01 and this analysis revealed that all 18 total tests were normally distributed. There were 6 subscales for 6 assessments which equaled 36 total subscales for the study. When the six subscales were examined, the majority of the response patterns for the variables on each assessment reflected normal distribution. However, of the 36 total tests for normality for the women's soccer and men's football teams, 5 of the 6 values on the responses for amotivation did not reflect a normal distribution where  $p < .0001$ . Skewness and kurtosis tests were then performed on the response distribution for the amotivation subscales to establish a normal distribution. Both skewness and kurtosis values of +/-1 were considered very good for psychometric uses, however, +/-2 was also acceptable (*How do I test the normality of a variable's distribution?*, 2013). The skewness range for all amotivation subscales were .90 to 1.4 and the kurtosis range were from -.37 to 1.5, thus, the amotivation subscales were included.

### **Tests of Research Questions**

Q1     What are the motivational characteristics of college athletes and how dynamic are these motivational profiles throughout a season?

Motivation was addressed from a SDT framework. Specifically, the variables of intrinsic motivation, extrinsic motivation, and amotivation were investigated to assess the motivational characteristics in college athletes over a season. It was expected that, when higher levels of intrinsic and/or extrinsic motivation were present in the athletes, amotivation levels would be lower. Furthermore, as the season progressed, it was anticipated that changes in motivation would occur both on an individual and team basis.

A RM ANOVA was used to assess change on each variable for the women's soccer team. There was a significant change in amotivation levels over time for this

team,  $F(2, 20) = 4.09$ ,  $p = .03$ , partial eta squared = .29. Follow-up analysis using the Bonferroni adjustment indicated there was a significant difference between the first and second assessment,  $p = .03$ . This finding revealed that amotivation was higher at Time 2 relative to Time 1. It was anticipated that, as amotivation increased, levels of intrinsic motivation and extrinsic motivation would decrease. This was not the case. There were no changes over time for intrinsic motivation,  $F(2, 20) = 2.08$ ,  $p = .15$ , partial eta squared = .17, or extrinsic motivation,  $F(2, 20) = 2.81$ ,  $p = .08$ , partial eta squared = .22.

For the men's football team, RM ANOVAs were also used to assess change over time for the variables over the course of the season. There was a significant change for extrinsic motivation;  $F(2, 63) = 8.93$ ,  $p < .0001$ , partial eta squared = .22. Follow-up analysis using the Bonferroni adjustment indicated there was a significant difference between the first and second assessment,  $p = .004$ , and between the first and third assessment,  $p < .0001$ . A comparison of the means indicated that extrinsic motivation increased between Time 1 and Time 2 and between Time 1 and Time 3 for the men's football team. Further analyses using RM ANOVAs were performed investigating the three different forms of extrinsic motivation (identified regulation, introjected regulation, and external regulation). There was a significant change for identified regulation;  $F(2, 63) = 4.27$ ,  $p = .018$ , partial eta squared = .11. Follow-up analysis using the Bonferroni adjustment indicated there was a significant difference between the first and third assessment,  $p = .01$ . A comparison of the means indicated that identified regulation increased between Time 1 and Time 3.

There was also a significant change for introjected regulation;  $F(2, 63) = 6.54$ ,  $p = .002$ , partial eta squared = .16. Follow-up analysis using the Bonferroni adjustment

indicated there was a significant difference between the first and second assessment,  $p = .004$ , a significant difference between the second and third assessment,  $p = .048$ , and a significant difference between the first and third assessment,  $p = .002$ . A comparison of the means indicated that introjected regulation increased between Time 1 and Time 2 and between Time 1 and Time 3, but decreased between Time 2 and Time 3.

External regulation was also found to have a significant change;  $F(2, 63) = 9.61$ ,  $p < .0001$ , partial eta squared = .22. Follow-up analysis using the Bonferroni adjustment indicated there was a significant difference between the first and second assessment,  $p = .023$ , and a significant difference between the first and third assessment,  $p = .001$ . A comparison of the means indicated that external regulation increased between Time 1 and Time 2 and between Time 1 and Time 3.

It was anticipated that, as extrinsic motivation increased, amotivation would decrease. This was not the case. There were no changes in amotivation,  $F(2, 63) = 1.54$ ,  $p = .22$ , partial eta squared = .05, or intrinsic motivation,  $F(2, 63) = 1.35$ ,  $p = .27$ , partial eta squared = .04.

Q2 What was the relationship among motivation, passion, and satisfaction throughout a season?

The relationship among the variables of motivation, passion, and satisfaction were examined using correlational analyses. Riemer and Chelladurai (1998) argued that an athlete's perception of satisfaction was important because satisfaction should influence motivation such that higher levels of satisfaction should lead to higher levels of motivation. For the women's soccer team, there was a moderate, negative relationship between satisfaction and amotivation,  $r(29) = -.39$ ,  $p < .05$ , such that higher satisfaction was associated with lower amotivation. For the men's football team, there was a

moderate correlation between intrinsic motivation and satisfaction,  $r(107) = .41, p < .05$ ; a moderate correlation between extrinsic motivation and satisfaction,  $r(107) = .30, p < .05$ ; and a weak, negative correlation between amotivation and satisfaction,  $r(107) = -.21, p < .05$ . No other correlations among these variables were statistically significant.

Vallerand et al. (2003, 2006) proposed that HP should be associated with positive affect and OP should be associated with negative affect in sport. For the women's soccer team, OP was not related to satisfaction,  $r(29) = .19, p = .31$ , but there was a statistically significant and relatively strong correlation between HP and satisfaction,  $r(29) = .61, p < .05$ . For the men's football team, OP was moderately correlated with satisfaction,  $r(107) = .36, p < .05$  and HP was also moderately correlated with satisfaction,  $p < .05, r(107) = .39, p < .05$ . The women's soccer data were consistent with expectations of Vallerand and colleagues (2003, 2006) in that HP and satisfaction were found to be related.

The relationship between passion and satisfaction was examined for both teams. Correlational analysis revealed that HP and satisfaction were correlated for the women's soccer team,  $r(29) = .61, p < .05$ . Correlational analysis also revealed that HP and satisfaction were moderately correlated,  $r(107) = .39, p < .05$ , and OP and satisfaction were also moderately correlated,  $r(107) = .36, p < .05$ , for the men's football team.

According to Vallerand et al (2003), passion may be considered to be the underlying energy for persistent motivation thus passion and motivation should be expected to be correlated. For the women's soccer team, HP was moderately correlated with intrinsic motivation,  $r(29) = .49, p < .05$ , and moderately but negatively correlated with amotivation,  $r(29) = -.61, p < .05$ . For the men's football team, HP was strongly

correlated with intrinsic motivation,  $r(107) = .78, p < .05$ . The correlations among all variables for both teams are presented in Tables 3 and 4.

Table 3

*Correlations Among Variables for Soccer Team*

Variable	Variable					
	IM	EM	AM	OP	HP	Satisfaction
IM		.45*	-.35	.49**	.49**	.32
EM			-.21	.42*	.43*	.21
AM				-.16	-.61**	-.39*
OP					.43*	.19
HP						.61**
Satisfaction						

*Note.* Intrinsic Motivation (IM), Extrinsic Motivation (EM), Amotivation (AM), Obsessive Passion (OP), Harmonious Passion (HP);  $N = 31$

\* $p < .05$ , \*\* $p < .01$ .

Table 4

*Correlations Among Variables for Football Team*

Variable	Variable					
	IM	EM	AM	OP	HP	Satisfaction
IM		.66**	-.20*	.64**	.78**	.41**
EM			.12	.69**	.63**	.30**
AM				-.045	-.20*	-.21*
OP					.68**	.36**
HP						.39**
Satisfaction						

*Note.* Intrinsic Motivation (IM), Extrinsic Motivation (EM), Amotivation (AM), Obsessive Passion (OP), Harmonious Passion (HP);  $N = 109$ ; \* $p < .05$ , \*\* $p < .01$ .

## Cluster Analysis

Hierarchical cluster analyses were conducted to identify athlete motivational profiles that emerged in relation to the motivation, passion, and satisfaction characteristics of the women's soccer team. Different subgroups, or clusters, were identified with specific characteristics that would set them apart from the other groups. Clusters were identified visually in the dendrogram then through examination of the agglomeration schedule. A four-cluster solution was identified as the best solution for the women's soccer team through the utilization of a between groups linkage method utilizing Squared Euclidian distance criteria and  $z$ -scores were employed for standardization purposes. A  $z$ -score of  $\pm .30$  was determined to be the criteria for identifying a variable as being meaningfully different across groups in the subsequent interpretation. Table 5 presents means, standard deviations, and  $z$ -scores for each variable for both assessments.

### Assessment One

There were four clusters that emerged from the analysis (Table 5) for the women's soccer team. Cluster 1 ( $n = 5$ ) was labeled *Highly Motivated* because these athletes had extremely high levels of intrinsic motivation and very low levels of amotivation. The athletes in this cluster were also well above the median levels for satisfaction ( $z = 1.60$ ), HP ( $z = 1.20$ ), and intrinsic motivation ( $z = 1.16$ ). The mean for amotivation ( $z = -.81$ ) of Cluster 1 was also below the sample mean. Values for OP ( $z = .18$ ) and extrinsic motivation ( $z = .11$ ) were in the normal range.



Table 5

*Women's Soccer Team Assessment #1*

	Cluster											
	1 ( <i>n</i> = 5)			2 ( <i>n</i> = 7)			3 ( <i>n</i> = 5)			4 ( <i>n</i> = 14)		
	<i>M</i>	<i>SD</i>	<i>z</i>	<i>M</i>	<i>SD</i>	<i>z</i>	<i>M</i>	<i>SD</i>	<i>z</i>	<i>M</i>	<i>SD</i>	<i>z</i>
IM	6.02	.45	1.16	4.20	.62	-.82	4.07	.52	-.96	5.26	.70	.34
EM	4.03	.42	.11	2.98	.59	-1.14	3.53	.89	-.49	4.53	.48	.70
AM	1.00	.00	-.81	1.43	.40	-.33	3.40	.68	1.86	1.55	.53	-.20
OP	3.30	1.43	.18	2.40	.84	-.63	2.53	.59	-.51	3.56	1.01	.43
HP	6.33	.39	1.20	4.95	1.20	-.27	4.37	.62	-.88	5.21	.65	.01
Satisfaction	6.00	.80	1.60	4.19	.59	-.10	3.34	.50	-.91	4.09	.79	-.20

*Note.* IM = Intrinsic Motivation, EM = Extrinsic Motivation, AM = Amotivation, OP = Obsessive Passion, and HP = Harmonious Passion.

Cluster 2 ( $n = 7$ ) was labeled *Low Motivation* because this cluster had the lowest levels of extrinsic motivation and the second lowest levels of intrinsic motivation among the cluster groups. Extrinsic motivation ( $z = -1.14$ ), intrinsic motivation ( $z = -.82$ ), OP ( $z = -.63$ ), and amotivation ( $z = -.33$ ) were all below the median levels. Cluster 2 was in the normal range for HP ( $z = -.27$ ) and satisfaction ( $z = -.10$ ).

Cluster 3 ( $n = 5$ ) was labeled *Unmotivated* because they had the highest levels of amotivation. This cluster was below median levels for extrinsic motivation ( $z = -.49$ ), satisfaction ( $z = -.91$ ), HP ( $z = -.88$ ), intrinsic motivation ( $z = -.96$ ), and OP ( $z = -.51$ ). Amotivation was the only variable above median levels ( $z = 1.86$ ). The mean for amotivation was the highest of all clusters at 3.40.

Cluster 4 ( $n = 14$ ), labeled *Extrinsically Motivated/Obsessive*, was above the median levels for extrinsic motivation ( $z = .70$ ), OP ( $z = .43$ ) and intrinsic motivation ( $z = .34$ ). Cluster 4 was in normal range for amotivation ( $z = -.20$ ), HP ( $z = .01$ ), and satisfaction ( $z = -.20$ ). The means for extrinsic motivation (4.53) and OP (3.56) for this cluster were the highest of all the clusters.

From a theoretical perspective (Vallerand et al., 2003, 2006), the patterns of relationships found for the variables in the four clusters obtained were consistent with expectations. Athletes who had high levels of intrinsic motivation also tended to have high levels of HP and were highly satisfied with their sport experience (Cluster 1). The inverse (Cluster 3) also occurred where lower levels of intrinsic and extrinsic motivation, coupled with higher levels of amotivation, were related to lower levels of passion and satisfaction. When intrinsic motivation levels were high, so were extrinsic motivation levels (Clusters 1 and 4). The converse also occurred (Clusters 2 and 3).

### Assessment Three

Four clusters also emerged in the women's soccer team for assessment three.

Cluster 1 ( $n = 4$ ) consisted of athletes who were also above the mean level for satisfaction ( $z = 1.40$ ), HP ( $z = 1.35$ ), extrinsic motivation ( $z = 1.23$ ), intrinsic motivation ( $z = 1.18$ ), and OP ( $z = .78$ ). Amotivation was below the mean ( $z = -.77$ ) for this cluster. The means for satisfaction (5.32), HP (6.17), extrinsic motivation (5.60), and intrinsic motivation (6.06) were the highest for all clusters. The mean for amotivation (1.13) was the lowest of all the clusters. This cluster was very similar to assessment one's Cluster 1, thus, was also labeled *Highly Motivated* because they were extremely high on intrinsic motivation and also had the lowest mean for amotivation.

Cluster 2 ( $n = 8$ ) was below mean levels for OP ( $z = -.82$ ), intrinsic motivation ( $z = -.63$ ), and extrinsic motivation ( $z = -.60$ ) and amotivation was above the mean ( $z = .59$ ). HP ( $z = -.11$ ) and satisfaction ( $z = .20$ ) were in the normal range. The means for OP (2.13) and intrinsic motivation (4.25) were the lowest of the clusters. This cluster was very similar to assessment one's Cluster 2, thus, was also labeled *Low Motivation* where intrinsic motivation levels were the lowest and extrinsic motivation levels were the second lowest.

Cluster 3 ( $n = 5$ ) was above mean levels for OP ( $z = 1.18$ ), extrinsic motivation ( $z = .70$ ), intrinsic motivation ( $z = .50$ ), and HP ( $z = .43$ ). Satisfaction was below the mean ( $z = -.65$ ) and amotivation was in the normal range ( $z = .20$ ). The mean for OP had the highest mean of all the clusters (4.63). This cluster was labeled *Extrinsically Motivated/Obsessive* just as in Cluster 4 for the first assessment because they were very similar.

Cluster 4 ( $n = 5$ ) was below the mean levels for HP ( $z = -1.32$ ), extrinsic motivation ( $z = -.74$ ), satisfaction ( $z = -.74$ ), OP ( $z = -.47$ ), and intrinsic motivation ( $z = -.46$ ) but above the mean for amotivation ( $z = 1.36$ ), which also had the highest mean of all the clusters (2.60). This cluster also had the lowest means for HP (3.63), extrinsic motivation (3.63), and satisfaction (2.84). This cluster, very similar to the first assessment's Cluster 3, was also labeled *Unmotivated* where lower levels of intrinsic and extrinsic motivation were coupled with higher levels of amotivation and lower levels of passion and satisfaction. See Table 6 for  $z$ -scores for assessment three.

### **Intercluster Comparison**

Between the two assessments, the same general pattern was evident for the clusters meaning highly similar cluster profiles emerged. Of the 22 athletes who completed both assessments, there were 13 who remained in the same cluster from assessment one to assessment three. Of the nine cases that changed clusters, there were four that went from the *Extrinsically Motivated/Obsessed* cluster to the *Low Motivation* cluster. There was one case that went from *Highly Motivated* to *Low Motivation*, one case that went from *Low Motivation* to *Extrinsically Motivated/Obsessed*, one case that went from *Low Motivation* to *Unmotivated*, one case that went from *Unmotivated* to *Highly Motivated*, and one case that went from *Extrinsically Motivated/Obsessed* to *Unmotivated*. Although there were some movements of athletes between clusters, overall as a team, the profiles of the athletes did not change much over the course of the season.

Table 6

*Women's Soccer Team Assessment #3*

	Cluster											
	1 ( <i>n</i> = 4)			2 ( <i>n</i> = 8)			3 ( <i>n</i> = 5)			4 ( <i>n</i> = 5)		
	<i>M</i>	<i>SD</i>	<i>z</i>	<i>M</i>	<i>SD</i>	<i>z</i>	<i>M</i>	<i>SD</i>	<i>z</i>	<i>M</i>	<i>SD</i>	<i>z</i>
IM	6.06	.79	1.18	4.25	.59	-.63	5.38	.63	.50	4.42	1.00	-.46
EM	5.60	.92	1.23	3.77	.61	-.60	5.07	.27	.70	3.63	.62	-.74
AM	1.13	.14	-.77	1.25	.33	.59	1.80	.54	.20	2.60	.49	1.36
OP	4.13	.50	.78	2.13	.56	-.82	4.63	.45	1.18	2.57	.99	-.47
HP	6.17	.45	1.35	4.79	.38	-.11	5.30	.55	.43	3.63	.51	-1.32
Satisfaction	5.32	.73	1.40	3.93	1.02	.20	2.95	.70	-.65	2.84	.13	-.74

*Note.* IM = Intrinsic Motivation, EM = Extrinsic Motivation, AM = Amotivation, OP = Obsessive Passion, and HP = Harmonious Passion.

### **Men's Football Team**

Hierarchical cluster analysis was also conducted for the men's football team, but this analysis did not produce meaningful results. Outlier cases more than three standard deviations from the mean, totaling no more than 5% of the sample, were eliminated to try to determine if the clusters would be more interpretable. Furthermore, the size of one cluster in every cluster solution was always substantially much larger than the other clusters regardless of the number of clusters in the solution. It was concluded that cluster analysis was not beneficial in interpreting the data for the men's football team. To examine the different types of athlete profiles that existed in the men's football sample, the athletes were classified in relation to their satisfaction levels. The sample was classified into three different groups based on their satisfaction levels. The variable of satisfaction was combined into one index represented by five subscales of the ASQ specifically aimed at individual performance and coaching behavior. Satisfaction was chosen as the classification variable because the satisfaction experiences of the athletes were considered to be most relevant to the purposes of the study. The top 25%, the middle 50%, and the bottom 25% of the cases made up the three groups. In accordance with these groupings, means for the other variables were examined. The criteria for distinguishing significant variables among the six was again set at  $z = \pm .30$ .

### **Assessment One**

The top quartile ( $n = 21$ ) of men football players on satisfaction ( $z = 1.12$ ) were above the mean for HP ( $z = .45$ ) and intrinsic motivation ( $z = .37$ ). The mean values for these variables were also the highest for all groups at 6.11, 5.79, and 5.65 respectively.

The mean value for amotivation, although within normal range, was the lowest of all quartiles at 1.94. OP and extrinsic motivation were within the normal range.

For the middle quartiles ( $n = 43$ ) of football players on satisfaction ( $z = .14$ ), all six variables fell within the normal range: intrinsic motivation ( $z = .06$ ), extrinsic motivation ( $z = .03$ ), amotivation ( $z = -.09$ ), OP ( $z = .04$ ), and HP ( $z = .02$ ). All six variables had the second highest mean values with the exception of extrinsic motivation. Extrinsic motivation for the middle quartile had the highest mean value at 4.05.

For the bottom quartile of athletes ( $n = 21$ ) on satisfaction ( $z = -1.40$ ), they were below the mean on HP ( $z = -.50$ ), intrinsic motivation ( $z = -.50$ ), and OP ( $z = -.31$ ). These four variables also had the lowest means values among the three groups at 3.32, 4.77, 4.74, and 3.44, respectively. Amotivation was above the median level ( $z = .42$ ) and also had the highest mean value of the three groups at 2.70. Extrinsic motivation was within the normal range ( $z = .00$ ). See Table 7 for means, standard deviations, and  $z$ -scores.

From a theoretical perspective (Vallerand et al., 2003, 2006), the patterns of relationships among the variables for the three groups were consistent with expectations. The highest satisfaction group (top quartile) had higher levels of intrinsic motivation and HP and lower levels of amotivation than the other groups. The lowest satisfaction group (bottom quartile) had the lowest levels of HP and intrinsic motivation but the highest levels of amotivation.

Table 7

*Men's Football Team Assessment #1*

	Quartile								
	1 ( <i>n</i> = 21)			2 and 3 ( <i>n</i> = 43)			4 ( <i>n</i> = 21)		
	<i>M</i>	<i>SD</i>	<i>z</i>	<i>M</i>	<i>SD</i>	<i>z</i>	<i>M</i>	<i>SD</i>	<i>z</i>
IM	5.65	.82	.37	5.32	1.10	.06	4.74	.98	-.50
EM	3.95	1.15	-.06	4.05	1.18	.03	4.02	1.29	.00
AM	1.94	1.08	-.25	2.12	1.03	-.09	2.70	1.29	.42
OP	4.21	1.40	.22	3.95	1.51	.04	3.44	1.38	-.31
HP	5.79	.71	.45	5.33	1.10	.02	4.77	1.09	-.50
Satisfaction	6.11	.29	1.12	5.03	.46	.14	3.32	.65	-1.40

*Note.* IM = Intrinsic Motivation, EM = Extrinsic Motivation, AM = Amotivation, OP = Obsessive Passion, and HP = Harmonious Passion.



### Assessment Three

The characteristics for the quartiles were essentially the same as assessment one. The top quartile ( $n = 21$ ) on satisfaction ( $z = 1.18$ ) was also higher on intrinsic motivation ( $z = .56$ ), HP ( $z = .41$ ), OP (.54), and extrinsic motivation (.41). The mean values for these variables were also the highest for all groups at 6.11, 5.42, 4.82, 5.73, and 4.84, respectively. The mean value for amotivation, although within normal range, was again the lowest among the groups at 2.27.

For the middle quartiles ( $n = 43$ ) on satisfaction ( $z = .10$ ), all six variables again fell within the normal range: intrinsic motivation ( $z = -.04$ ), extrinsic motivation ( $z = -.06$ ), amotivation ( $z = .08$ ), OP ( $z = -.16$ ), and HP ( $z = -.02$ ). All six variables had the second highest mean values.

For the bottom quartile on the variable of satisfaction ( $z = -1.38$ ), HP ( $z = -.37$ ), and intrinsic motivation ( $-.51$ ) were also below the mean. The mean values for these variables were also the lowest among the quartiles at 2.92, 4.46, and 4.39, respectively. Amotivation was above the median ( $z = .33$ ) and had the highest mean value at 3.01. Extrinsic motivation and OP were within the normal range but had the lowest means at 4.04 and 3.63.

These findings were consistent with expectations based on the work of Vallerand and colleagues (2003, 2006) in that higher levels of intrinsic motivation, HP, and satisfaction occurred simultaneously as expected. Table 8 provides the means, standard deviations, and  $z$ -scores.

Table 8

*Men's Football Team Assessment #3*

	Cluster								
	1 ( <i>n</i> = 21)			2 and 3 ( <i>n</i> = 43)			4 ( <i>n</i> = 21)		
	<i>M</i>	<i>SD</i>	<i>z</i>	<i>M</i>	<i>SD</i>	<i>z</i>	<i>M</i>	<i>SD</i>	<i>z</i>
IM	5.73	.82	.56	4.96	.96	-.04	4.39	1.61	-.51
EM	4.84	1.20	.41	4.29	.95	-.06	4.04	1.41	-.28
AM	2.27	1.13	-.18	2.41	1.33	.08	3.01	1.84	.33
OP	4.82	1.42	.54	3.72	1.39	-.16	3.63	1.86	-.22
HP	5.42	1.01	.41	4.89	1.08	-.02	4.46	1.57	-.37
Satisfaction	6.11	.31	1.18	4.76	.61	.10	2.92	.53	-1.38

*Note.* IM = Intrinsic Motivation, EM = Extrinsic Motivation, AM = Amotivation, OP = Obsessive Passion, and HP = Harmonious Passion.

## Interview Data

### Participant Characteristics

Two athletes from the women's soccer team and two athletes from the men's football team participated in the interview portion of the study. The purpose of the interview process was to gather deeper insight about the participants' motivational experiences over the course of the season. The women's soccer team interviewees were selected to represent the *most satisfied* and *least satisfied* athletes as identified by their individual mean satisfaction values at assessment three. Satisfaction was chosen as the selection variable because the satisfaction experiences of the athletes were considered to be most relevant to the purposes of the study. The variable of satisfaction was comprised of five areas (individual performance, ability utilization, strategy, personal treatment, and training and instruction) focusing on coaching behavior and individual performance.

The first athlete (coded Mia) was from the *Highly Motivated* cluster during both the first and third assessments. This cluster had the highest levels of intrinsic motivation and lowest levels of amotivation. Mia was a sophomore starter on the women's soccer team and an academic all-conference performer. As a freshman, Mia did not see a lot of playing time but had worked her way into the starting lineup. She has had a lot of success while playing club and high school soccer in the past and often would compare her present soccer experiences with her past soccer experiences. Mia was also a very accomplished track and field athlete in high school but chose not to participate to focus on academics and soccer.

The second athlete (coded Brenda) was from the *Unmotivated* cluster for both the first and third assessments of the women's soccer team. This cluster was characterized

by having the highest levels of amotivation for all clusters. Brenda was a freshman walk-on who struggled with injury all season long. Brenda was recruited by a handful of other universities but chose to walk-on with the understanding that she would have a chance to earn playing time, possibly eventually earn a scholarship, and that she would have an opportunity to contribute. Brenda, similar to Mia, experienced success at the club and high school levels and often compared her experiences with the women's soccer team and her coach with those from her past. Brenda was also on the academic honor roll all four years of high school.

The athletes selected for the interview portion from the men's football team were also selected primarily due to their satisfaction levels but rapport between the athletes and the researcher was an additional consideration in the selection process. The first interviewee (coded Chad) was in the top quartile of satisfaction at assessment one and in the middle 50% for assessment three. Chad was a junior scholarship returning starter, was considered a "star" on the team, and was voted team captain by his peers. He is from the local area and had experienced lots of success both before and during his collegiate career. Chad was also an academic all-conference performer.

The second athlete (coded Jay) was in the middle 50% for the first assessment and in the bottom quartile for the last assessment. Jay was a junior on scholarship that transferred down (FCS level) to this university from the higher Football Bowl Subdivision (FBS). Prior to his transfer, Jay took a few years off for missionary work and was also married and a father. Jay mentioned that his priorities changed from high school where he was on the honor roll and garnered first team all-state honors for two years. Football was "everything" to Jay during his high school years. Jay started the year

getting substantial playing time but his playing time drastically decreased throughout the year. He also experienced two position changes throughout the season.

The interviews focused on factors that contributed to satisfaction and dissatisfaction in relation to their sport experiences throughout the season. Each athlete was provided with background information about the purpose of the interview portion of the study and it was explained to them they were selected for the interview portion of the study because of their answers on the questionnaires and their profiles in regards to the variables of interest. Although the athletes were asked specific questions relative to the variables of interest, they were encouraged to elaborate and expand on whatever information they thought was relevant to the study.

### **Women Soccer Players**

The focus of the interview portion of the study was on identifying influences on satisfaction, specifically sources of satisfaction and sources of dissatisfaction with their sport experience throughout the season. Data were presented generally in terms of influences on satisfaction as represented by the responses from these two soccer athletes. Some themes that surfaced involved the communication style of their head coach, the level of commitment and accountability of teammates, and their satisfaction with playing time.

The first common issue identified was that of the communication style of their head coach (coded Coach John). Both athletes felt that Coach John did not give nearly enough instructional feedback when needed. Mia stated, “He doesn’t really stop practice and say coaching things (instruction/feedback) as much as I think he should . . . he says instructive things sometimes but I think he could do it more.” Brenda added, “I feel like I

am not getting coached by him (instruction) . . . I just feel like I don't get that feedback.” Both athletes stated that Coach John gave ample amounts of praise but not nearly enough instruction after a sub-par performance or a mistake. Although both athletes were frustrated with this lack of instruction, the athletes responded differently. Mia commented, “I guess he could coach me more but I'm still satisfied.” Both athletes agreed that Coach John's coaching style was different from what they have experienced in the past and it was not their coaching style of choice. Both athletes also felt that many of the drills Coach John made them practice were unnecessary and did not really get them better prepared for being successful on the soccer field. Brenda commented, “Some of the shooting drills I don't feel like they help us because it is when nobody is on the person shooting and that is not likely in the game . . . that would happen once every blue moon.”

The level of commitment of the team and the extent of accountability of team members were also areas of concern for both athletes. Mia and Brenda both commented that one of the reasons they believed that the team was not as successful as they could have been was because teammates were not taking their sport seriously. Mia stated, “I would say I am not satisfied with them (teammates) . . . we didn't win cause people were not taking it seriously,” and Brenda also added, “I don't think there is a lot of holding each other accountable on the team. There was too much playing around in practice and even during games.” Although both felt some accountability fell on the team, ultimately both felt Coach John was responsible and this contributed to their dissatisfaction.

One variable that seemed to distinguish their level of satisfaction was playing time. Both Mia and Brenda had similar frustrations but Mia saw substantially more playing time and Brenda saw no playing time. Mia quite frankly stated, “I am a starter . . . I think that is why I am so satisfied because I get playing time.” She also stated, “It would be nice to win but I would be really dissatisfied because I didn’t play.” Brenda’s low level of satisfaction stemmed from lack of playing time. Brenda was dealing with an injury that contributed to very little playing time. She stated, “I never got the chance to compete and show myself . . . it is very frustrating.” She also stated, “Yes . . . it would be way different. I’d be happy because I was playing.”

Motivation for playing soccer, in general, was discussed as a source of satisfaction by both athletes and both highlighted significant others, traveling, and living up to their potential as very salient for them. Mia mentioned the social factor of friends and how soccer highlighted her athletic ability to which she commented, “I love the social stuff . . . the friends you make from it . . . I don’t even know what my life would be without soccer.” Brenda identified friends, family, and just reaching her potential as motivational factors, she stated, “I’ve made so many friends (playing soccer) . . . the basis of my friends are athletes that played . . . traveling is the best.”

Both OP and HP were also lightly touched on with both athletes. Both variables were described to them in terms of Vallerand et al.’s (2003) definition. Both athletes had similar levels of OP (high) and HP (high) mean levels across all assessments. Mia stated, “soccer is not my whole life . . . it’s not all about soccer,” and Brenda similarly stated, “soccer is just a sport . . . my priorities are family, school, soccer.” Both athletes also

mentioned that, if the demands for soccer interfered with academics, they would not hesitate to give it (soccer) up regardless of the financial repercussions.

### **Men Football Players**

Although the focus of the interview was directed to a discussion of the sources of their satisfaction, motivation and passion were also addressed by these two athletes. The themes that surfaced in the interviews as influences upon their satisfaction, motivation, and passion were communication and playing time. For Chad, his main sources for higher levels of satisfaction were his performance and his relationship/communication with his position coach. He specifically pointed out that the dip in satisfaction from the beginning of the season to the second assessment that took place mid-season was attributed to a decline in his performance. Chad commented, "I felt more responsible for some of those games . . . just based on the way that I played (not up to my potential)." As the season progressed, and as his performance improved as well as the communication between him and his coach, his satisfaction levels also increased. He stated, "I felt there was better communication between us. I was telling him more of what I liked on the field strategy-wise and what I was seeing from the defense . . . definitely more than the first group of games." For Jay, his low satisfaction levels were also attributed to coaching but he also mentioned other variables such as lack of playing time and lack of fun. Throughout the season, Jay's satisfaction levels progressively declined mirroring his amount of playing time. He started the season as a regular contributor but his playing time dwindled to where, at the end of the season, he was playing only 10 to 12 plays a game. He mentioned the two position changes and the communication problems he experienced with his coaches made for an unsatisfactory experience. Jay mentioned



numerous times that football was not fun anymore for him. He stated, “football is not fun at all.” He also discussed how his lack of playing time contributed to a feeling of being a non-contributor and not part of the team and said, “I think that will make me happy, knowing I’m able to contribute and they’re allowing me to contribute.”

When motivation in general was discussed, both athletes spoke of mostly extrinsic motivators and did not discuss intrinsic motivators at all. Chad mentioned playing for his teammates multiple times as an important source of motivation. Chad discussed how he wanted to be reliable and for his teammates to know that he would perform his job on the field. Chad commented, “I was doing it more not to let my teammates down . . . it was mainly for me to be reliable to my teammates and knowing I was going to take care of my job.” Jay mentioned teammates as well but had a different view that went back to playing time. Jay discussed how he was unable to fulfill his desire of “playing for his teammates” because of his lack of playing time. He was unable to contribute and felt as though he was not part of the team. Jay’s non-contribution not only affected his motivation but also his satisfaction and his passion. Furthermore, Jay’s motivation seemed to come from his view that playing football was a means to an end. Jay stated, “I do it to get my education paid for . . . I do it because it is required.”

Passion was generally discussed by both athletes. Chad had a unique perspective on his passion for football, mirroring HP, as he stated, “When things are going better for you (in football), everything else seems to fall in place . . . football bleeds into other areas of life.” As the team started to see success toward the end of the season, Chad’s HP increased and his OP decreased. Jay’s OP and HP mirrored his playing time. As his playing time diminished, so did his passion for football. Jay stated that he believed that,

if he was able to contribute, he would feel part of the team and this would make him happy which would in turn fuel his passion for the game. He commented:

It isn't playing every down or the majority of downs, it is just contributing somewhat . . . even when I was just on three special teams and getting in on goal line, maybe twelve plays a game, I was happy because I was contributing with my teammates and had a purpose . . . I just want to be on the team and contribute . . . everything would be a lot higher (satisfaction, motivation, passion).

Although the athletes interviewed were from two different samples and sports, there were two common themes that emerged as being sources of satisfaction and dissatisfaction. Communication and playing time contributed to the satisfaction levels of these athletes. Both these variables seemed to either increase or decrease the satisfaction levels of their sport experience. In the women's soccer sample, although both athletes shared the same frustration with their head coach's communication style, the amount of playing time seemed to mediate satisfaction levels. For the men's football athletes, better communication with the coaching staff contributed to higher satisfaction levels in Chad while the frustration with the communication with coaches contributed to dissatisfaction in Jay. The lack of playing time directly led to dissatisfaction in Jay while playing time, and subsequently his performance, led to more satisfaction in Chad. Overall, playing time seems to be the most salient variable that contributes to levels of satisfaction in these athletes.

## CHAPTER V

### DISCUSSION AND RECOMMENDATIONS

This study employed a mixed-methods design to examine motivation, passion, and satisfaction in intercollegiate athletes over one competitive season. Specifically, the research examined the motivational characteristics of these athletes as well as their motivational characteristics over time. In addition, the relationships among motivation, passion, and satisfaction were also examined over time. The women's soccer and men's football teams both completed an instrument comprised of the SMS, the Passion Scale, and five subscales of the ASQ on three occasions (at the beginning, middle, and towards the end of their competitive seasons). Follow-up interviews were completed with two athletes from the women's soccer team and two athletes from the men's football team to gain additional insights not obtained through the questionnaires.

Both descriptive and inferential analyses were conducted to obtain the results from this study. The descriptive analyses included analysis of the response means and standard deviations for each team for each assessment for each variable. A RM ANOVA was used to assess change in the athletes' motivational characteristics over time. Correlational analyses were employed to assess the relationships among the variables of motivation, passion, and satisfaction. Finally, cluster analysis was used to identify athlete motivational profiles in relation to motivation, passion and satisfaction characteristics. The findings in this study will be presented in relation to theoretical frameworks and previous research. Suggestions will also be presented for future research directions.

### **Motivational Patterns**

A primary purpose of this study was to examine the motivational profiles of Division I athletes over the course of a competitive season. Descriptive statistics for both samples indicated that the athletes had higher levels of intrinsic motivation than extrinsic motivation or amotivation. This finding was encountered at all three assessments for both samples. From a SDT perspective, this pattern would suggest that these values are ideal for sport as proposed by SDT (Deci & Ryan, 1985; Ryan & Deci, 2000) in that psychological well-being and optimal functioning are anticipated to occur in individuals when intrinsic motivation is present.

A RM ANOVA analyses were used to assess change over time in the motivational variables for both samples. Amotivation was found to change significantly over time for the women's soccer team. In this case, there was a significant increase from Time 1 to Time 2 in amotivation for the women's soccer team. The results revealed that amotivation was the highest in the middle of the season.

Extrinsic motivation was found to change significantly over time (from Time 1 to Time 2 and from Time 1 to Time 3) for the men's football team. The mean value of extrinsic motivation increased across all three assessments. However, both identified regulation and external regulation increased from Time 1 to Time 2 and stayed at essentially the same level from Time 2 to Time 3 while introjected regulation increased from Time 1 to Time 2 then decreased from Time 2 to Time 3. For all assessments, identified regulation had the highest mean value followed by external regulation and introjected regulation. These findings indicated that the athletes became more motivated by extrinsic factors over the course of the season and the interview data were consistent

with this finding. In reference to SDT (Deci & Ryan, 1985; Ryan & Deci, 2000), specifically the sub-theory of organismic integration theory, the primary extrinsic motivators that the athletes described in the interview portion of the study would be categorized as introjected regulation because the athletes were motivated by the desire to perform up to the expectations of their teammates. The men's football interviewees also mentioned that being recognized after wins while experiencing some success during the latter part of the season contributed to their extrinsic motivation, which represented another form of introjected regulation.

From a theoretical perspective, the results of this study supported the conceptual underpinnings of SDT (Deci & Ryan, 1985; Ryan & Deci, 2000). Findings from previous research suggested that intrinsic motivation and more autonomous forms of extrinsic motivation such as integrated regulation and identified regulation may lead to persistent sport engagement, enhanced performance, creativity, and positive affect (Gagné & Blanchard, 2007; Mallett, 2005; Treasure et al., 2007; Vlachopoulos et al., 2000). Amotivation, and controlling forms of extrinsic motivation such as external regulation and introjected regulation, have been associated with such undesirable outcomes as negative affect and lower intention to engage in sport (Vlachopoulos et al., 2000). Higher levels of intrinsic and/or extrinsic motivation should also accompany lower levels of amotivation. These anticipated patterns of relationships were found for both team samples in this study.

According to the postulates of SDT (Deci & Ryan, 1985; Ryan & Deci, 2000), social and cultural factors can either hinder or facilitate initiative, choice, performance, and well-being. These influences may help to explain the increase in extrinsic motivation

for the men's football team and the increase in amotivation for the women's soccer team throughout the season. For the men's football sample, the change in extrinsic motivation over the season seemed consistent with expectations for SDT. Specifically mentioned by the football interviewees was the salience of playing for teammates as the season progressed. This outcome seemed to represent introjected regulation as the men football players were motivated by the desire to not let their teammates down.

For the women's soccer team, amotivation levels increased from Time 1 to Time 2 which was contrary to expectations given that the team's record actually improved during this time. Theoretically, amotivation levels should have decreased over this time. While there may have been numerous factors which may have contributed to the increase in amotivation, the players' concerns about living up to their potential may have been one of them. The soccer interviewees mentioned that living up to their potential was a very important factor influencing their motivation. Not living up to potential may be argued as being related to not meeting their need of competence. Not meeting the need for competence may lead to decreases in intrinsic motivation and possibly increases in amotivation.

In reference to perceptions of competence, feedback in the form of group failure (losing) should generate feelings of incompetence, thus, undermining intrinsic motivation (Deci & Cascio, 1972). Conversely, in accordance with SDT, group success (winning) should generate feelings of competence, thus, increasing intrinsic motivation (Deci, 1971). The women's soccer team actually experienced more success from Time 1 to Time 3, but there were no significant changes in intrinsic motivation levels. From Time 2 to Time 3, the team found out they did not make the conference playoffs which should

have theoretically decreased intrinsic motivation but this did not occur. The men's football team also experienced more success as the season continued, but there were no significant changes in intrinsic motivation levels. Although intrinsic motivation in both samples did not change over time as anticipated, it has been found that high achievers do not show a decrease in intrinsic motivation in highly competitive situations (Harackiewicz, Manderlink, & Sansone, 1992).

### **Relationships Among Variables**

Correlational analyses were used to examine the relationships among motivation, passion, and satisfaction within each team. There were similarities and discrepancies in these results with findings from previous research. The findings from the men's football team, where high satisfaction was coupled with high intrinsic and extrinsic motivation, supported Riemer and Chelladurai's (1998) expectation that satisfaction should be present when athletes have high levels of intrinsic and extrinsic motivation. Amotivation was also found to be weakly and negatively correlated with satisfaction within the men's football team. There was no correlation between intrinsic or extrinsic motivation with satisfaction for the women's soccer team. However, amotivation was found to be moderately and inversely correlated with satisfaction as expected. These findings were consistent with previous research that had found more self-determined motivation was associated with greater positive affect and satisfaction (Amorose & Anderson-Butcher, 2007; Gagné et al., 2003; Gillett et al., 2010; Solberg & Halvari, 2009).

Vallerand et al. (2003, 2006) proposed that HP should be associated with positive affect, SWB, and positive psychological outcomes which, in turn, may influence athlete satisfaction. OP, on the other hand, should be associated with negative affect (Vallerand

et al., 2003, 2006). The results with the men's football sample were consistent with expectations for the relationship between HP and satisfaction but not consistent with the anticipated outcome between OP and satisfaction. HP was moderately correlated with satisfaction for the men's football team. However, OP was also correlated with satisfaction for the men's football team in this study. The women's soccer sample results were consistent with the findings of Vallerand et al. (2003, 2006) in which HP was highly correlated with satisfaction and OP was not correlated with satisfaction.

According to Vallerand et al. (2008), passion may be viewed as the underlying energy for persistent motivation representing "an important source of motivational energy underlying such persistent involvement that may be conducive to performance attainment" (p. 374). The results from the men's football team sample supported this expectation. Intrinsic motivation was found to be highly correlated with both OP and HP. Extrinsic motivation was also found to be highly correlated with both OP and HP. Amotivation was not related to OP but was found to be weakly and negatively related to HP. The results of the study with the women's soccer sample also supported this expectation in that both intrinsic and extrinsic motivation was found to be moderately correlated with both OP and HP. Amotivation was not significantly related to OP but was found to have a strong negative correlation with HP for the women's soccer team.

### **Cluster Profiles**

Cluster analysis was used to identify different athlete motivational profiles in relation to motivation, passion, and satisfaction characteristics. These cluster profiles will be interpreted in relation to SDT. Four distinct clusters emerged for the women's soccer team. The first cluster was labeled *Highly Motivated* and was characterized by



individuals with extremely high levels of intrinsic motivation and very low levels of amotivation. The second cluster was labeled *Low Motivation* because these athletes had the lowest levels of extrinsic motivation and below average levels of intrinsic motivation among the cluster groups. The third cluster was labeled *Unmotivated* because these athletes had the highest levels of amotivation and low levels of extrinsic motivation and intrinsic motivation. The fourth cluster was labeled *Extrinsically Motivated/Obsessive* because they had the highest levels of extrinsic motivation and OP.

From a theoretical perspective (Vallerand et al., 2003, 2006), the clusters that emerged from the women's soccer sample were consistent with expectations. The cluster of athletes with the highest levels of intrinsic motivation also had higher than average levels of HP (Cluster 1) and satisfaction. Conversely, lower than average levels of intrinsic motivation and extrinsic motivation were associated with higher levels of amotivation and lower levels of passion and satisfaction (Cluster 3). Clusters 1 and 4 reflected clusters of athletes with higher levels of both intrinsic and extrinsic motivation. The inverse was also present where Clusters 2 and 3 had lower than average levels of both intrinsic and extrinsic motivation.

For the men's football team, the cluster analysis did not yield additional insight into the motivational processes of the athletes. Consequently, the different types of athlete profiles in the men's football sample were examined only in relation to satisfaction levels. The sample was classified into three different groups relative to satisfaction levels (top quartile, middle two quartiles, and bottom quartile) based on their satisfaction levels. Satisfaction was chosen as the classification variable because the satisfaction experiences of the athletes were considered to be most relevant to the

purposes of the study. The top quartile satisfaction group was characterized by high HP, high intrinsic motivation, and low amotivation. The middle quartiles satisfaction group was characterized by mean values for all variables. The bottom quartile satisfaction group had the lowest levels of HP, intrinsic motivation, and OP and the highest levels of amotivation.

From a theoretical perspective (Vallerand et al., 2003, 2006), each of the patterns found were consistent with expectations. The top quartile group had the highest levels of intrinsic motivation and HP coupled with the lowest levels of amotivation. The bottom quartile group had the lowest levels of HP and intrinsic motivation but had the highest levels of amotivation. Higher levels of intrinsic motivation were associated with higher levels of satisfaction and HP and lower levels of amotivation for these groups. In this sample, satisfaction was explained by greater self-determined motivation and HP and lower levels of amotivation. The results of the analyses for these two samples supported the expectation that higher levels of self-determined motivation and HP and lower levels of amotivation were linked with higher levels of satisfaction.

Individual variations in motivation, passion, and satisfaction levels in intercollegiate athletes should be expected and should affect coaching behaviors and team dynamics. In these two samples, the motivational characteristics of the athletes were not constant throughout the season.

### **Recommendations**

There was an indication that coach-athlete interactions and team dynamics may have affected athlete motivation, according to the responses from the soccer interviewees. Both interviewees seemed to share frustration with their coach and their teammates as

both athletes indicated that they felt their coach should provide more feedback and instruction. Both athletes also indicated frustration with the perceived lack of seriousness of their teammates when it came to being committed to a successful group outcome.

Riemer and Chelladurai (1998) stated that satisfaction should be influenced by motivation and satisfaction has been proposed to be affected by specific coaching behaviors. From the women's soccer sample, any athlete's satisfaction may logically be linked to playing time and perceived contribution to the team. Playing time and perceived contribution may arguably influence feelings of competence in the athlete. According to Deci (1975) and Deci and Ryan (1985; Ryan & Deci, 2000), effective interpersonal communication can foster competence in an individual which may increase intrinsic motivation levels in the athlete. Furthermore, individuals behave in certain ways to feel a sense of connectedness, or relatedness, to others. Deci and Ryan (1985; Ryan & Deci, 2000) argued that meeting this need for relatedness should increase intrinsic motivation. Following the postulates of SDT, the knowledge of how and where an athlete fits, as well as their role on the team, helps to meet the needs of competence and relatedness which, in turn, should increase intrinsic motivation and satisfaction. Coaches can proactively identify these roles within the team to help clarify athlete expectations which should increase intrinsic motivation and satisfaction.

According to the tenants of SDT, self-determined forms of motivation are associated with positive psychological outcomes. Additionally, regardless of type, motivation still influences the individual to act. The mean values for intrinsic motivation and amotivation for the men's football sample did not change over the assessments; only extrinsic motivation significantly changed as it increased over the course of the season.

This change in extrinsic motivation indicated that overall motivation of the men's football sample increased as the season went on. According to the interview data, playing for other individuals, specifically teammates, seemed to be a strong motivator over the assessments. Words like *family* and *community* were used to describe what the team was becoming as the season progressed. The largest amount of extrinsic motivation at every assessment displayed by the men's football sample was categorized as identified regulation, the most self-determined form of extrinsic motivation measured by the SMS. Furthermore, identified regulation increased from the beginning of the season to the middle of the season and remained high at the end of the season. From a SDT perspective (Deci & Ryan, 1985; Ryan & Deci, 2000), the increasing levels of more autonomous forms of extrinsic motivation should have been anticipated as meeting the need of relatedness seemed to be met with time. Theoretically, meeting the need of relatedness should lead to positive psychological outcomes. Coaches can proactively meet the athletes' need for relatedness by building these relationships as early as possible and creating an environment that fosters these relationships which, in turn, should increase more self-determined forms of motivation that result in positive psychological outcomes.

Identifying motivational characteristics of athletes within a team should be very useful for coaches. If a coach had greater awareness of the motivation, passion, and satisfaction characteristics of each athlete, he or she could create a better experience for the athlete and increase the likelihood of success.

### **Limitations and Future Research**

This study used a mixed-methods approach to investigate motivation, passion, and satisfaction in Division I athletes. Limitations and some suggested avenues for future research are proposed. A limitation of the study was found in the reliability of the OP subscale for the second assessment of the women's soccer team. The Cronbach alpha level was .57. Individual cases were investigated for patterns of inconsistency but none were found. Individual questions were then investigated and it was found that question 12 did not correlate very well with the other questions that measured OP for assessment two. When that question was eliminated, the Cronbach alpha level increased to .68. However, both assessment one (.73) and assessment three (.82) yielded acceptable Cronbach alpha levels with question 12 included and question 12 was also correlated with the other questions that measured OP. It was possible that the athletes did not understand what exactly the question was asking while completing assessment two. It was decided to include the OP subscale for the second assessment with the women's soccer team but was recognized as a limitation.

Another limitation may have been in the number of interviewees as well as the selection process of the interviewees. There were only two interviewees from each sample which provided some insight into the experiences of these athletes but the data were still very limited. Furthermore, the interviewees were selected for having high and low levels of satisfaction in reference to coaching behaviors and individual performance. These athletes may have represented outliers and may not have accurately represented the samples. The first recommendation for future research would be to have athletes from

each cluster represented from the samples which would represent the experiences of the sample much more realistically.

Another recommendation for future research would be to encourage a season-long research design with more frequent assessments throughout the season. This research design would provide more data points on the variables of interest throughout the season. A substantial amount of information can be lost over time and assessing the athletes' experiences more frequently would provide greater insight into motivational changes over time.

A third recommended research approach is to conduct a longitudinal study with athletes throughout their entire intercollegiate career. A combination of questionnaires and interviews could capture the experience of athletes as they go from freshman to the exhaustion of their eligibility. Investigating how other variables such as academics, family, or social life variables influence the sport experience for these athletes would shed additional light on this topic. Furthermore, specifically assessing how such variables as playing status, satisfaction with roles, and developing greater competency impact changes over time in relation to their motivation, passion, and satisfaction may help to provide knowledge that may improve the experience of athletes.

In conclusion, the results of this study contributed to the knowledge base regarding theoretical perspectives on dynamics of motivation, passion, and satisfaction in Division I athletes. The results of this study suggested that motivation, passion, and satisfaction characteristics were dynamic over a competitive season and that patterns of relationships among the variables of interest were consistent with expectations.

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**APPENDIX A**  
**HUMAN SUBJECTS CONSENT FORM**

CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH  
UNIVERSITY OF NORTHERN COLORADO

Project Title: The Dynamics of Self-Determined Motivation, Passion, and Athlete Satisfaction Over One Competitive Season in Intercollegiate Athletes

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**Purpose and Description:** The purpose of this study is to investigate patterns of relationships among motivation, passion, and satisfaction over time, specifically over one season. Understanding how and possibly why these changes occur over time may ultimately help in facilitating athlete satisfaction in college sport. The research will be approached from a mixed-methods methodology. The questionnaires used will be The Sport Motivation Scale (SMS; Pelletier, Fortier, Vallerand, Brière, Tuson, & Blais, 1995, 28 questions), The Passion scale (Vallerand et al., 2003, 16 questions), and five subscales of the Athlete Satisfaction Questionnaire (ASQ, Reimer & Chelladurai, 1998, 22 questions). After data analysis of the questionnaire data, individuals who fit certain patterns of relations will be further asked to partake in an interview regarding their experience; not everyone who completed the questionnaire will be asked to volunteer.

It will take approximately 25 minutes to complete each session (there will be a total of three sessions). Each question references your sport participation. There are seven possible responses on a continuum ranging from a “1” which represents “Does Not Correspond At All” to a “7” which represents “Corresponds Exactly.” The interview portion will take approximately one hour to complete but not all individuals will be asked to participate, just those identified after the questionnaires are analyzed. The location of the interviews will preferably take place on the campus of the UNC that is most convenient for the participant. The interviews will be digitally recorded and transcribed verbatim. At that point, themes will be drawn from the interviews. No identifying information will be included in the write up that may help in the identification of the participants. However, public information will be gathered from such sources as the



Sports Information Director, the UNC website, or print media to obtain information such as, but not limited to, statistics, game results, scores, and injuries.

To participate in the survey or interview portion, you must be age 18 or older. Survey responses will remain confidential. Completed hard copy surveys, as well as all e-file data, will be stored in the office of Dr. Robert Brustad (committee chair, Gunter Hall 2740). While I cannot guarantee confidentiality, at no time will individuals other than me or Dr. Robert Brustad will have access. Completed surveys and any information from the interview portion will be kept for a period of five years after which the databases will be deleted. By completing the survey and participating in the interview (should you be asked), you are agreeing to allow us to use the data for a professional research report. Risks to you are minimal. If you are apprehensive about completing the questionnaire or interview, be assured that at no time will anyone be other than myself or Dr. Brustad have access to your responses. The benefits to you for completing the survey are that your data may help to contribute to the knowledge base on motivation, passion, and satisfaction in sport.

Participation is voluntary. You may decide not to participate in this study, if you begin participation you may still decide to stop and withdraw at any time. Having read the above and having had an opportunity to ask questions, please sign below if you would like to participate. By signing, you are agreeing to participate in three survey assessments and the interview portion should you be identified. If you have concerns about your selection or treatment, please contact the Office of Sponsored Programs, Kepner Hall, UNC Greeley, CO 80639; 970-351-2161. If you need to contact me personally should you have any concerns or questions, my email is mcgu22872@bears.unco.edu. Thank you for your assistance.

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Subject's Signature

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Date

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Researcher's Signature

---

Date

**APPENDIX B**  
**QUESTIONNAIRES**

### THE SPORT MOTIVATION SCALE (SMS-28)

Pelletier, L. G., Fortier, M. S., Vallerand, R. J., Tuson, K. M., Brière, N. M., & Blais, M. R. (1995). Toward a new measure of intrinsic motivation, extrinsic motivation, and amotivation in sports: The Sport Motivation Scale (SMS). *Journal of Sport & Exercise Psychology*, 17, 35-53.

#### WHY DO YOU PARTICIPATE IN FOOTBALL/SOCCER?

Using the scale below, please indicate to what extent each of the following items corresponds to one of the reasons for which you are presently practicing your sport.

Does not correspond at all	Corresponds a little	Corresponds moderately	Corresponds a lot	Corresponds exactly		
1	2	3	4	5	6	7

#### ***WHY DO YOU PRACTICE YOUR SPORT?***

1.	For the pleasure I feel in living exciting experiences.	1	2	3	4	5	6	7
2.	For the pleasure it gives me to know more about the sport that I practice.	1	2	3	4	5	6	7
3.	I used to have good reasons for doing sport, but now I am asking myself if I should continue doing it.	1	2	3	4	5	6	7
4.	For the pleasure of discovering new training techniques.	1	2	3	4	5	6	7
5.	I don't know anymore; I have the impression of being incapable.	1	2	3	4	5	6	7
6.	Because it allows me to be well regarded by people that I know.	1	2	3	4	5	6	7
7.	Because, in my opinion, it is one of the best ways to meet people.	1	2	3	4	5	6	7
8.	Because I feel a lot of personal satisfaction while mastering certain difficult training techniques.	1	2	3	4	5	6	7
9.	Because it is absolutely necessary to do sports if one wants to be in shape.	1	2	3	4	5	6	7

10.	For the prestige of being an athlete.	1	2	3	4	5	6	7
11.	Because it is one of the best ways I have chosen to develop aspects of myself.	1	2	3	4	5	6	7
12.	For the pleasure I feel while improving some of my weak points.	1	2	3	4	5	6	7
13.	For the excitement I feel when I am really involved in the activity.	1	2	3	4	5	6	7
14.	Because I must do sports to feel good myself.	1	2	3	4	5	6	7
15.	For the satisfaction I experience while I am perfecting my abilities.	1	2	3	4	5	6	7
16.	Because people around me think it is important to be in shape.	1	2	3	4	5	6	7
17.	Because it is a good way to learn lots of things which could be useful to me in other areas of my life.	1	2	3	4	5	6	7
18.	For the intense emotions I feel doing a sport that I like.	1	2	3	4	5	6	7
19.	It is not clear to me anymore; I don't really think my place is in sport.	1	2	3	4	5	6	7
20.	For the pleasure that I feel while executing certain difficulty movements.	1	2	3	4	5	6	7
21.	Because I would feel bad if I was not taking time to do it.	1	2	3	4	5	6	7
22.	To show others how good I am at my sport.	1	2	3	4	5	6	7
23.	For the pleasure that I feel while learning training techniques that I have never tried before.	1	2	3	4	5	6	7
24.	Because it is one of the best ways to maintain good relationships with my friends.	1	2	3	4	5	6	7
25.	Because I like the feeling of being totally immersed in the activity.	1	2	3	4	5	6	7
26.	Because I must do sports regularly.	1	2	3	4	5	6	7

27.	For the pleasure of discovering new performance strategies.	1	2	3	4	5	6	7
28.	Often ask myself; I can't seem to achieve the goals that I set for myself.	1	2	3	4	5	6	7

© *Luc G. Pelletier, Michelle Fortier, Robert J. Vallerand, Nathalie M. Brière, Kim M. Tuson and Marc R. Blais, 1995*

#### KEY FOR SMS-28

- # 2, 4, 23, 27    Intrinsic motivation - to know
- # 8, 12, 15, 20    Intrinsic motivation - to accomplish
- # 1, 13, 18, 25    Intrinsic motivation - to experience stimulation
- # 7, 11, 17, 24    Extrinsic motivation - identified
- # 9, 14, 21, 26    Extrinsic motivation - introjected
- # 6, 10, 16, 22    Extrinsic motivation - external regulation
- # 3, 5, 19, 28    Amotivation

## THE PASSION SCALE

Vallerand, R. J., Blanchard, C., Mageau, G. A., Koestner, R., Ratelle, C., Léonard, M., & Marsolais, J. (2003). Les passions de l'âme: On obsessive and harmonious passion. *Journal of Personality and Social Psychology*, 85(4), 756-767.

Describe an activity that you love, that is important for you, and in which you spend a significant amount of time. My Favorite activity is:\_\_\_\_\_.

*While thinking of your favorite activity and using the scale below, please indicate your level of agreement with each item*

	Not agree At all	Very Slightly Agree	Moderately Agree	Mostly Agree	Strongly Agree	Very Strongly Agree	
	1	2	3	4	5	6	7
1. This activity is in harmony with other activities in my life.	1	2	3	4	5	6	7
2. I have difficulties controlling my urge to do my activity.	1	2	3	4	5	6	7
3. The new things that I discover with this activity allow me to appreciate it even more.	1	2	3	4	5	6	7
4. I have almost an obsessive feeling for this activity.	1	2	3	4	5	6	7
5. This activity reflects the qualities I like about myself.	1	2	3	4	5	6	7
6. This activity allows me to live a variety of experiences.	1	2	3	4	5	6	7
7. This activity is the only thing that really turns me on.	1	2	3	4	5	6	7
8. My activity is well integrated in my life.	1	2	3	4	5	6	7
9. If I could, I would only do my activity.	1	2	3	4	5	6	7
10. My activity is in harmony with other things that are part of me.	1	2	3	4	5	6	7
11. This activity is so exciting that I sometimes lose control over it.	1	2	3	4	5	6	7

- |     |   |   |   |   |   |   |   |   |
|-----|---|---|---|---|---|---|---|---|
| 12. | I have the impression that my activity controls me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. | I spend a lot of time doing this activity.          | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. | I love this activity.                               | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. | This activity is important for me.                  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. | This activity is a passion for me.                  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

OP: 2, 4, 7, 9, 11, 12

HP: 1, 3, 5, 6, 8, 10

Passion Criteria: 13, 14, 15, 16

## ATHLETE SATISFACTION QUESTIONNAIRE

Riemer, H.A. & Chelladurai, P. (1998). Development of the Athlete Satisfaction Questionnaire. *Journal of Sport and Exercise Psychology*, 20:2, 127-156.

This study is concerned with satisfaction of athletes. Athletics is an intense situation wherein individuals participate voluntarily and wholeheartedly. An individual may be satisfied to varying degrees with different types of experiences in athletic participation. In the following pages, several items related to athletic participation are listed. Against each item, a response format ranging from 1 (not at all satisfied) to 7 (extremely satisfied) is provided. You are requested to participate in the study and indicate the extent to which you are satisfied with the content of each item. Your honest and spontaneous response to each and every item is vital to the success of the study. Do not think about any one item for too long.

### **Example:**

*I was satisfied with...the number of games we have won.*

Not at all Satisfied	Moderately Satisfied	Extremely Satisfied
1            2	3            4            5	6            7

*The respondent indicates that she is moderately satisfied with the number of games won.*

For the purpose of this study, please recall your experiences during this particular season (or the one just completed), and record your reactions to those experiences.

**It is extremely important that you provide a response to every question.**

Your participation in this study is voluntary. You may refuse to participate and/or withdraw from participation at any time. You have the right to ask for the return of your responses. Please sign below to indicate your willingness to participate in the study. The anonymity of your responses is guaranteed. Thank you in advance for participating in this study.

---

Signature of Participant



*Please proceed to the next page....*

*I am satisfied with....*

- |     |  |   |   |   |   |   |   |   |
|-----|--|---|---|---|---|---|---|---|
| 1.  | how the team works (worked) to be the best.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2.  | my social status on the team.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3.  | the coach's choice of plays during competitions.                                     | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4.  | the competence of the medical personnel.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5.  | the degree to which I do (did) my best for the team.                                 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6.  | the degree to which I have reached (reached) my performance goals during the season. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7.  | the degree to which my abilities are (were) used.                                    | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8.  | the extent to which all team members are (were) ethical.                             | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9.  | the extent to which teammates provide (provided) me with instruction.                | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. | the funding provided to my team.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. | the media's support of our program.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. | the recognition I receive (received) from my coach.                                  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. | the team's win/loss record this season.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. | the training I receive (received) from the coach during the season.                  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. | the tutoring I receive (received).   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. | my dedication during practices.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. | my teammates' sense of fair play.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. | the academic support services provided.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

- |     |  |   |   |   |   |   |   |   |
|-----|--|---|---|---|---|---|---|---|
| 19. | the amount of money spent on my team.                                    | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20. | the degree to which teammates share (shared) the same goal.              | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 21. | the fairness with which the medical personnel treats all players.        | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 22. | the friendliness of the coach towards me.                                | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 23. | the guidance I receive (received) from my teammates.                     | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 24. | the improvement in my performance over the previous season.              | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 25. | the instruction I have received from the coach this season.              | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 26. | the level to which my talents are (were) employed.                       | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 27. | the role I play (played) in the social life of the team.                 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 28. | the support from the university community.                               | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 29. | the tactics used during games.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 30. | the team's overall performance this season.                              | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 31. | coach's choice of strategies during games.                               | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 32. | my enthusiasm during competitions.                                       | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 33. | my teammates' 'sportsmanlike' behavior.                                  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 34. | team member's dedication to work together toward team goals.             | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 35. | the coach's teaching of the tactics and techniques of my position.       | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 36. | the constructive feedback I receive (received) from my teammates.        | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 37. | the degree to which my teammates accept (accepted) me on a social level. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

- |     |  |   |   |   |   |   |   |   |
|-----|--|---|---|---|---|---|---|---|
| 38. | the extent to which my role matches (matched) my potential.                  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 39. | the extent to which the team is meeting (has met) its goals for the season.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 40. | the fairness of the team's budget.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 41. | the improvement in my skill level.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 42. | the level of appreciation my coach shows (showed) when I do (did) well.      | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 43. | the medical personnel's interest in the athletes.                            | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 44. | the personnel of the academic support services (i.e., tutors, counselors).   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 45. | the supportiveness of the fans.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 46. | how the coach makes (made) adjustments during competitions.                  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 47. | my coach's loyalty towards me.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 48. | my commitment to the team.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 49. | the amount of time I play (played) during competitions.                      | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 50. | the extent to which teammates play (played) as a team.                       | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 51. | the local community's support.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 52. | the promptness of medical attention.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 53. | coach's game plans.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 54. | the degree to which my role on the team matches (matched) my preferred role. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 55. | the extent to which the coach is (was) behind me.                            | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 56. | the manner in which coach combines (combined) the available talent.          | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

## SCORING KEY FOR THE ATHLETE SATISFACTION QUESTIONNAIRE

**INDIVIDUAL PERFORMANCE** - This subscale seeks to measure an individual's satisfaction with his/her own task performance. Task performance includes absolute, performance, improvements in performance, and goal achievement.

**Items:** 6, 24, 41

**TEAM PERFORMANCE** - This facet refers to an individual's satisfaction with his/her team's level of performance. Task performance includes absolute performance, goal achievement, and implies performance improvements.

**Items:** 13, 30, 39

**ABILITY UTILIZATION** - Satisfaction with how the coach uses and/or maximizes the individual athlete's talents and/or abilities.

**Items:** 7, 26, 38, 49, 54

**STRATEGY** - Satisfaction with the strategic and tactical decisions made by the coach.

**Items:** 3, 29, 31, 46, 53, 56

**PERSONAL TREATMENT** - Satisfaction with those coaching behaviors which directly affect the individual, yet indirectly affect team development. It includes social support and positive feedback.

**Items:** 12, 22, 42, 47, 55

**TRAINING AND INSTRUCTION** - Satisfaction with the training and instruction provided by the coach.

**Items:** 14, 25, 35

**TEAM TASK CONTRIBUTION** - Satisfaction with those actions by which the group serves as a substitute for leadership for the athlete.

**Items:** 9, 23, 36

**TEAM SOCIAL CONTRIBUTION** - Satisfaction with how teammates contribute to the athlete as a person.

**Items:** 2, 27, 37

**ETHICS** - Satisfaction with the ethical positions of teammates.

**Items:** 8, 17, 33

**TEAM INTEGRATION** - This facet refers to the athlete's satisfaction with the members' contributions and coordination of their efforts toward the team's task.

**Items:** 1, 20, 34, 50

PERSONAL DEDICATION - Athlete's satisfaction with his/her own contribution to the team.

**Items:** 5, 16, 32, 48

BUDGET - Satisfaction with the amount of money provided to the team by the athletic department.

**Items:** 10, 19, 40

MEDICAL PERSONNEL - Satisfaction with the team's medical personnel.

**Items:** 4, 21, 43, 52

ACADEMIC SUPPORT SERVICES - Satisfaction with the academic support services provided to the athletes.

**Items:** 15, 18, 44

EXTERNAL AGENTS - Satisfaction with those agents/elements outside the organization which may contribute to the team.

**Items:** 11, 28, 45, 51