

PEER RELATIONSHIPS AND SPORT COMMITMENT

By

Olufemi Adetokunbo Oluyedun

A DISSERTATION

Submitted to  
Michigan State University  
in partial fulfillment of the requirements  
for the degree of

Kinesiology—Doctor of Philosophy

2020

## **PUBLIC ABSTRACT**

### **PEER RELATIONSHIPS AND SPORT COMMITMENT**

By

Olufemi Adetokunbo Oluyedun

Peers are important in shaping athletes' positive and negative sport experiences. This is because peers are deeply engaged in most athletes' day-to-day sport involvement. Many athletes desire the approval or support from their broader peer group and seek to develop close friendships on their teams. To achieve this objective, athletes often feel the need to manage how they are perceived by others in order to fit in and make friends. Due to the potential impact of peers on athletes' sport experiences, researchers have begun to investigate how peers are related to an athlete's desire to continue participation in sport. The aim of this two-study dissertation was to examine how peers matter to sport commitment.

Study 1 examined what type of athlete is most susceptible to social pressure to persist in sport. We hypothesized that athletes who were highly motivated to impression manage would be the most susceptible to social pressure to persist in sport. Overall, results provided support for our hypothesis in one instance, but not most instances. Athletes who reported they had a high concern about how others viewed them (impression motivation) tended to show a stronger association between social constraints and sport commitment. Although this was consistent with expectations, overall findings suggested that greater impression motivation (IM) largely did not strengthen the association of social constraints with sport commitment.

The purpose of Study 2 was to (a) examine how positive friendship quality dimensions and friendship conflict tie to sport commitment, and (b) examine how other peer variables (peer acceptance, impression motivation) add to prediction of sport commitment beyond the friendship

dimensions. The primary hypothesis was partially supported, but findings were not consistent with previous research. We found that higher perceptions of loyalty and intimacy, lower levels of conflict resolution, and higher perceptions of conflict were associated with higher constrained commitment. Our secondary hypothesis was supported and consistent with prior research suggesting that a span of peer constructs will best predict sport commitment. More specifically, higher self-esteem enhancement and supportiveness, loyalty and intimacy, things in common, companionship and pleasant play, self-development IM, social identity development IM, and avoidance of negative consequences IM were significantly associated with higher enthusiastic commitment. Things in common, conflict resolution, and peer acceptance were inversely associated with constrained commitment whereas conflict and motivation to avoid damaging impressions was positively associated with constrained commitment.

Collectively, these studies show that peer relationships matter to sport commitment, albeit modestly. These studies suggest impression motivation is a useful social variable for explaining sport commitment and that examining the full social tapestry of an athlete (e.g., positive friendship quality, friendship conflict, peer acceptance, and impression motivation) may best enrich our understanding of how social relationships, such as those with peers, tie to sport commitment.

## ABSTRACT

### PEER RELATIONSHIPS AND SPORT COMMITMENT

By

Olufemi Adetokunbo Oluyedun

Peers play a vital role in shaping quality sport experiences. Early descriptive work has highlighted the importance of considering the social context when examining sport commitment, the desire or resolve to maintain sport participation. Yet, little research has investigated the specific role of peers in contributing to sport commitment. Peers may be especially important to sport commitment because athletes often pursue sport to cultivate a sense of affiliation and to make friends. Accordingly, this dissertation examined how various peer relationships constructs predict sport commitment in highly involved athletes.

The purpose of Study 1 was to examine whether impression motivation moderates the association of social constraints and sport commitment. Collegiate athletes ( $N = 257$ ) completed established measures of impression motivation, perceptions of social constraints, and both enthusiastic and constrained sport commitment. Results largely suggested that impression motivation did not moderate the relationship between social constraints and sport commitment. One of the eight models run was significant and supported the moderation hypothesis. Self-development impression motivation (IM) was found to moderate the relationship between social constraints and the enthusiastic form of commitment, such that higher impression motivation strengthened that association. Overall, this model accounted for an additional 4% of variance predicted above and beyond the main effect of social constraints.

The purpose of Study 2 was to (a) examine how positive friendship quality dimensions and friendship conflict would predict sport commitment, and (b) examine how other peer

variables (peer acceptance, impression motivation) add to prediction of sport commitment beyond the friendship dimensions. Collegiate track and field athletes ( $N = 198$ ) completed established measures of friendship quality, friendship conflict, peer acceptance, and impression motivation. Higher loyalty and intimacy and perceptions of conflict along with lower conflict resolution associated with greater constrained commitment. Thus, the more loyal an athlete was to their close friend, combined with higher perceived conflict and weaker perceived capacity to resolve conflict, associated with a greater perceived sense of obligation to remain in sport. Results addressing our secondary purpose suggested that a span of peer constructs would best predict sport commitment. Higher self-esteem enhancement and supportiveness, things in common, loyalty and intimacy, companionship and pleasant play, self-development IM, social identity development IM, and avoidance of negative outcomes IM collectively predicted more enthusiastic commitment. In addition, less things in common, conflict resolution, and peer acceptance combined with higher conflict and avoidance of damaging impressions IM predicted commitment that was more constrained and less enthusiastic. Our findings suggest that a “social tapestry” of peer constructs predict sport commitment. Friendship quality linked to sport commitment in a theoretically consistent direction, but only when considered alongside peer acceptance and impression motivation. This noted, the redundancy statistics for each root were 6.3% and 6.2% respectively, indicating a modest finding.

Together, this dissertation shows that peer relationships matter to sport commitment, albeit modestly. These studies suggest that examining the full social tapestry of an athlete may best enrich our understanding of how social relationships, such as those with peers, tie to sport commitment.

Copyright by  
OLUFEMI ADETOKUNBO OLUYEDUN  
2020

To Cassandra Ayashe Green. Your unconditional patience, love, and support made the completion of this project possible.

## ACKNOWLEDGEMENTS

There are many people I would like to thank for their encouragement and contributions to this dissertation project. First, I would like to express gratitude to my committee members, Dr. Karl Erickson, Dr. Karin Pfeiffer, Dr. Jennifer Schmidt, and Dr. Alan Smith, for their guidance and instrumental contributions over the course of this project. I would especially like to thank my advisor, Dr. Alan Smith, for both his patience and continually pushing me to reach my potential. His efforts and expectations ensured my work reached the highest level of academic contribution and have shaped the lens with which I view academia.

I would like to recognize past and present graduate students that I have been fortunate enough to call my peers. Your continued support, encouragement, and mentorship have instilled in me a passion to succeed. I am a lucky individual to have crossed paths with so many passionate scholars. In addition, I would like to recognize the undergraduate research assistants for their dedication in helping collect data for this dissertation project. Without you, none of this work would have been possible.

Lastly, I would like to thank my family. To my brothers Adekunle, Babajide, and Kolawole, who were all instrumental in my development as a person and athlete. Thank you for putting up with me talking about sport from sun up to sun down. To my wonderful mother Jumoke, thank you for your support and continued prayers as I worked through this project. As a mommy's boy, you were always the one that I could call at any time to get advice and share laughs with. And to Cassandra, for your loving support and patience. Your understanding and patience through these years is truly incredible and I am so fortunate to have met you along this wonderful journey.



## TABLE OF CONTENTS

LIST OF TABLES .....	ix
LIST OF FIGURES .....	x
CHAPTER 1: GENERAL INTRODUCTION .....	1
CHAPTER 2: STUDY ONE.....	15
Preface .....	15
Abstract .....	16
Introduction .....	17
Method .....	23
Participants .....	23
Procedure .....	24
Measures .....	24
Data Analysis.....	26
Results .....	27
Descriptive Statistics .....	27
Hierarchical Multiple Regression Analyses .....	32
Discussion .....	34
CHAPTER 3: STUDY TWO.....	38
Abstract .....	38
Introduction .....	40
Method .....	44
Participants .....	44
Procedure .....	45
Measures .....	45
Data Analysis.....	48
Results .....	49
Descriptive Statistics .....	49
Multivariate Multiple Regression Analyses .....	53
Discussion .....	57
CHAPTER 4: GENERAL DISCUSSION .....	65
Theoretical Contributions and Implications .....	68
Limitations .....	73
Directions for Future Research and Conclusion.....	77
APPENDICES .....	81
APPENDIX A: Study One – Human Research Protection Program Approval Letter .....	82
APPENDIX B: Study One – Questionnaire Packet .....	86
APPENDIX C: Study Two – Human Research Protection Program Approval Letter .....	102
APPENDIX D: Study Two – Questionnaire Packet .....	109

REFERENCES ..... 130

## LIST OF TABLES

Table 1. Demographic Information ( $N = 257$ ) .....	28
Table 2. Descriptive Statistics, Bivariate Correlations, and Internal Consistency Reliabilities ( $N = 257$ ) .....	29
Table 3. Hierarchical Regression predicting Enthusiastic Commitment .....	30
Table 4. Hierarchical Regression predicting Constrained Commitment .....	31
Table 5. Demographic Information ( $N = 198$ ) .....	51
Table 6. Descriptive Statistics, Bivariate Correlations, and Internal Consistency Reliabilities ( $N = 198$ ) .....	52
Table 7. Canonical Loadings for the Relationship of Friendship Quality Dimensions with Enthusiastic and Constrained Commitment.....	55
Table 8. Canonical Loadings for the Relationship of Friendship Quality Dimensions, Peer Acceptance, and Impression Motivation Dimensions with Enthusiastic and Constrained Commitment .....	56

## LIST OF FIGURES

Figure 1. Original Sport Commitment Model.....	9
Figure 2. Updated Sport Commitment Model .....	11
Figure 3. Moderation Interaction .....	33

## CHAPTER 1: GENERAL INTRODUCTION

Over the past few decades, research examining peer relationships in sport has flourished. Most attention has been dedicated to understanding the psychosocial importance of peers in sport and the role peers play in fostering or undermining sport participation (Smith, 2003; Smith & McDonough, 2008). The literature base suggests sport peers are primary social agents deeply engaged in most athletes' day-to-day sport involvement (Smith, 2007). Peers play a vital role in shaping sport experiences as salient members of the sport context. More recently, researchers have attempted to expand on existing descriptive work that supports a link between peer relationships and sport participation among young people (Ullrich-French & Smith, 2009; Weiss & Smith, 2002). As a result, a growing area of research has attempted to capture the nuances of an athlete's willingness to persist in sport over time, known as sport commitment (Carpenter, Scanlan, Simons, & Lobel, 1993). Although peer relationships are believed to predict sport commitment, limited work has focused on specific peer constructs.

Many researchers conceive of peers as same-to-near age friends or teammates (Bukowski, Laursen, & Rubin, 2018; Fitzgerald, Fitzgerald, & Aherne, 2012). The standard definition of *peer* refers to individuals in equal standing with respect to age, class, or rank (Bukowski et al., 2018). Within the achievement context of sport, peers may also include those who share similar athletic capability or experience regardless of their age (Smith, 2007). Peer relationships are inherently unique because unlike close relationships with family, peer relationships are voluntary (Laursen & Bukowski, 1997; Laursen & Hartup, 2002). Either party can end the affiliation when they so choose, and the reciprocal nature of peer relationships suggests participants share power and thus a potential to influence one another (Bukowski et al., 2018).

As youth age, peers assume a heightened developmental role, influencing norms and behaviors which in turn shape physical activity and psychosocial outcomes (Smith, 2003). There exist a variety of motives that promote quality sport experiences such as appearance, competence development, enjoyment, fitness, and social acceptance (Weiss & Ferrer-Caja, 1992; Weiss & Petlichkoff, 1989). Sport begins to develop meaningfulness around middle-childhood when social comparison is found to intensify. By early adolescence, youth are able to distinguish between effort and ability as contributors to performance outcomes (Horn & Hasbrook, 1987; Horn & Weiss, 1991). This understanding promotes a shift from relying most heavily on adults for feedback and support, to greater reliance on peers through peer comparison (Horn & Amorose, 1998). This shift is found to remain stable through late adolescents and young adulthood (Bukowski et al., 2018).

Theoretical perspectives are essential for the investigation of peers and sport participation among young people. These perspectives help explain the importance of peer constructs and specify the nature of peer influence in the sport context for young people (Smith & McDonough, 2008; Smith, Mellano, & Ullrich-French, 2019). At the forefront of theories dedicated to the development of young people is Sullivan's (1953) interpersonal theory of psychiatry. Although this developmental theory was not specifically created for the sport context, it has provided a guide for research on the psychosocial importance of peers in young peoples' lives and has been used as a framework to examine peer relationships in sport (Smith & McDonough, 2008).

The interpersonal theory of psychiatry addresses both the peer group and specific friendships as distinct developmental constructs (Sullivan, 1953). Sullivan (1953) posits that peer groups and friends enable a young person to develop a more nuanced perspective of self, evolving from an egocentric mindset to one that is understood in relation to others. Sullivan's

(1953) theory also emphasizes the closeness or quality of relationships within a setting of interest. For example, within the sport setting, peer relationships may be most understood by examining how young people relate to one another during sport-related activities (e.g., practice, matches). In emphasizing the closeness or quality of relationships, Sullivan (1953) also posits that the peer group and friendships may serve as a substitute for one another when necessary. For example, rejection from the larger peer group on a sport team could be overcome by the existence of a supportive and positive friendship on the team. Altogether, Sullivan's theory offers a framework for the study of peers in the sport context.

Based on a broad range of theoretical perspectives, Smith and McDonough (2008) proposed a host of peer constructs that are germane to work on sport among young people. These peer constructs fall into three general categories. The first two categories (i.e., peer group and specific peers) correspond closely with Sullivan's (1953) assertion that peer groups and friendships are distinct social constructs (Smith & McDonough, 2008). The third category (i.e., peer-referenced) represents peers offering a frame of reference that can shape a young person's affect and experiences in a setting like sport. Of relevance to this dissertation are three peer constructs evident among these respective categories: 1) peer acceptance, 2) friendship quality, and 3) impression management (i.e., impression motivation).

The selection of peer acceptance, friendship quality, and impression motivation as peer constructs for this dissertation was based on previous theoretical approaches for examining peer relationships as well as addressing constructs with limited research. Peer acceptance has been one of the most widely studied constructs in peer relationship research (Bukowski et al., 2018). Within the context of sport, peer acceptance is important to consider in relation to physical

activity behavior (Fitzgerald et al., 2012). Thus, peer acceptance was selected to further our understanding of how the peer group may influence sustained participation in sport.

Theoretically distinct from peer acceptance, but often examined in tandem, is friendship quality. Friendship quality is distinct from peer acceptance in that the two constructs are not always positively associated. For example, an athlete may share a close friendship on the team but feel low acceptance by the broader peer group (Fitzgerald et al., 2012). The same may be true in the opposite direction where an athlete may be popular amongst the team yet may not have a close friend. Interestingly, only within the last few decades has friendship quality been closely examined in the sport context. A growing body of research suggests that friendship quality may be important to examine in relation to motivation to continue sport considering the social provisions that make up this construct (self-esteem enhancement, companionship, loyalty, things in common, conflict resolution) and how they would relate to sport commitment (Weiss & Amarose, 2008; Weiss & Petlickoff, 1989; Weiss & Smith, 1999; Weiss & Smith, 2002). Therefore, including friendship quality is theoretically consistent via interpersonal psychiatry theory and is relevant when examining factors that may relate to sport commitment.

In a recent review, Fitzgerald and colleagues (2012) examined the relationship of peer and/or friend variables with physical activity among adolescents. They found that six distinct constructs contribute to adolescent physical activity behavior. These constructs are peer support, presence of friends, peer norms, peer crowd affiliation, peer victimization, peer acceptance, and friendship quality (Fitzgerald et al., 2012). Peer acceptance and friendship quality have been examined in concurrence with motivation-related variables in youth sport work (Smith, Ullrich-French, Walker, & Hurley, 2006). Results revealed adaptive perceptions of peer acceptance and friendship quality in sport shared an association with various outcomes such as adaptive



achievement goal orientations, greater perceived physical competence, greater sport enjoyment, and stronger sport commitment (McDonough & Crocker, 2005; Ommundsen, Roberts, Lemyre, & Miller, 2005; Smith et al., 2006; Ullrich-French & Smith, 2006; Weiss, Kimmel, & Smith, 2001; Weiss & Smith, 2002). In sum, athletes that perceive more positive peer acceptance and friendship quality also show more adaptive sport motivation (Smith et al., 2006). Beyond these variables is another distinct construct related to how athletes monitor their behavior when in the presence of peers.

Impression motivation is a highly relevant construct when examining the social context in sport, yet this construct is understudied in sport and exercise psychology. Impression motivation is the psychological motivation an individual has to control how others view her or him (Leary & Kowalski, 1990; Schlenker, 1980). As a result of the highly observable nature of sport, athletes are often concerned about how others perceive the attributes they do or do not possess (Payne, Hudson, Akehurst, and Ntoumanis, 2013). Outcomes that might be attained through closely monitoring behavior and attempting to project the best possible image of oneself to others are both interpersonal (e.g., peer acceptance and friendship) and intrapersonal (e.g., identity development; Tetlock & Manstead, 1985). Therefore, examining impression motivation will allow for closer examination of a peer-referenced construct within the sport context as well as address whether an athlete's motivation to control how they are viewed helps explain their sport experiences. An individual's impression motivation fluctuates based on three interrelated factors: goal-relevance of impressions, value of desired goals, and discrepancy between desired and current image (Leary, 1992).

Goal-relevant impressions deal with publicity of behavior and an individual's dependency on a target for valued outcomes (e.g., social, self-esteem maintenance, identity

development; Leary & Kowalski, 1990). The more public the behavior, the more likely the person will be concerned with how he or she appears to others. In reference to the sport context, practice and game settings may promote high impression motivation due to their public nature. Another factor affecting goal-relevance is whether a person is dependent on another for a valued outcome. For example, an athlete may be highly motivated to create desired impressions to popular individuals on a team, with the goal of fitting in or being accepted.

Impression motivation also varies based on the importance of desired goals and discrepancy between desired and current impressions. The more an individual values a desired goal the more motivated that person will be to engage in behaviors such as impression management that will help achieve the goal. Finally, the discrepancy between desired and current impressions is largely dictated by the degree to which an individual's impressions fall within or outside what the individual believes is an acceptable range (Schlenker, 1980). Peer literature suggests that individuals do their best to keep the discrepancy within an acceptable range to avoid peer rejection (Schlenker, 1980). For example, if athletes believe that their behavior does not meet peer-based norms, they may be motivated to behave in ways that closer resemble those norms. Together, these interrelated factors determine the degree to which individuals are motivated to monitor their social experiences. Of particular interest to physical activity researchers is how these social experiences influence future sport participation.

Peer acceptance, friendship quality, and impression motivation help describe an athlete's sport experiences as they tie to peer relationships. Sport researchers have aimed to understand these experiences to determine what factors promote or deter sport participation (Gould, 1996). Peer acceptance and friendship quality have consistently been found to promote sport participation among children and adolescents (Weiss & Ferrer-Caja, 2002). Peer acceptance is

important as many young athletes seek approval or support from a broader peer group, which has been found to influence motivational processes (Harter, 1999). Within the peer group, friendships have many components that reflect their quality (Weiss, Smith, & Theeboom, 1996; Weiss & Smith, 1999). Weiss and Smith (2002) directly examined the dimensions of sport friendship quality as predictors of sport enjoyment and sport commitment. Findings showed that players who rated higher in similar beliefs, companionship and pleasant play, and conflict resolution were more likely to enjoy and be psychologically committed to sport (Weiss & Smith, 2002). This work helped establish how positive peer relationships can enhance sport experiences leading athletes to revisit the sport context.

Limited in scope is research focused on the relationship between peer-referenced constructs (i.e., impression motivation) and sport participation. Much of the peer-referenced literature has focused on subjective norms and physical activity. An understudied yet fruitful area of research is evident in the examination of impression motivation as it is known to be especially salient among young people considering the importance of peers in a young person's social sphere and the desire to be well regarded. Impression motivation is valuable to consider when examining peer relationships in a sport context. An athlete's level of impression motivation could determine the extent to which the athlete is influenced by the opinions of peers. Considering this alongside peer acceptance and friendship quality may offer deeper understanding of sport commitment.

The concept of commitment stems from psychological theory and research on close relationships (Schmidt & Stein, 1991). Commitment reflects factors that support persistence in an activity or the persistence and stability of relationships – even in the face of adversity (Becker, 1960; Kelley, 1983). Commitment literature explains why people remain in

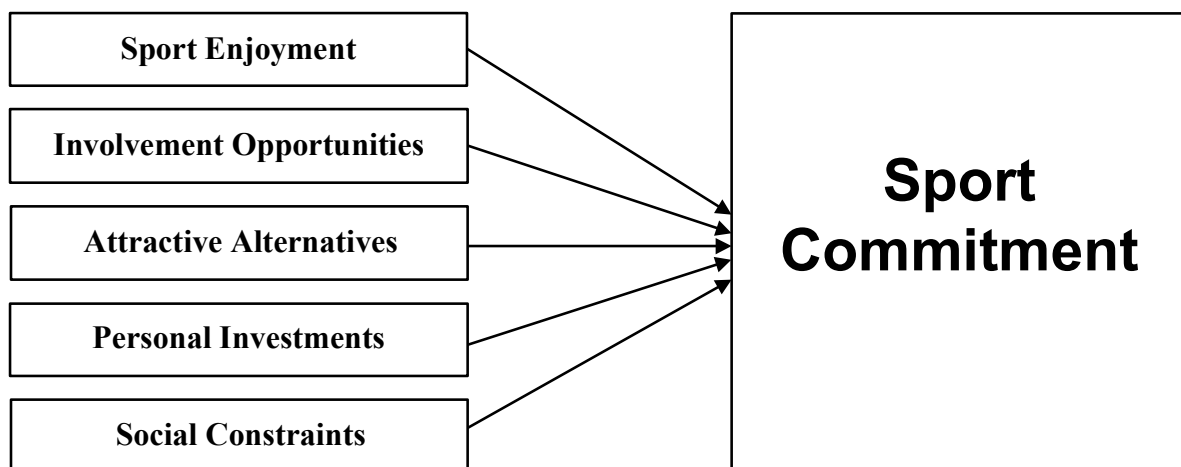
relationships or continue involvement in activities despite alternatives (Brickman, 1987). Prior to the 1990s, commitment research had been primarily studied in the contexts of work (Rusbult & Farrell, 1983), romantic relationships (Kelley, 1983), and friendships (Rusbult, 1980). A large portion of commitment research has been derived from Thibaut and Kelley's (1959) social exchange theory. This theory emphasizes that people who enjoy an activity tend to stay in that activity and those who find relatively less enjoyment tend to leave an activity (Thibaut & Kelley, 1959). In addition, the theoretical model illustrates why satisfied individuals may leave an activity and why dissatisfied individuals may remain in an activity (Thibaut & Kelley, 1959). This is done through a cost-benefits analysis (i.e., outcomes, comparison level, and comparison level for alternatives) used to predict commitment to an activity or relationships.

Adapting concepts from Thibaut and Kelley (1959), Rusbult (1980) developed the investment model that specifies factors that predict commitment in close relationships. Rusbult's model provides sport and exercise psychology researchers an approach to studying commitment in sport by focusing on adaptive and constraining factors for remaining in sport over time (Schmidt & Stein, 1991). During the 1980s, leading sport and exercise psychology researchers examined major concerns related to sport participation such as dropout, burnout, and sport enjoyment (Schmidt & Stein, 1991). Scanlan and colleagues (1993) developed the original sport commitment model to advance understanding of sport participation.

Sport commitment is the psychological desire to persist in sport over time (Scanlan, Carpenter, Schmidt, Simons, & Keeler, 1993). The original sport commitment model specifies five sources that predict commitment which include sport enjoyment, involvement opportunities, attractive alternatives, personal investments, and social constraints (see Figure 1; Carpenter et al., 1993). Sport enjoyment is positive affect that reflects general feelings of joy. Involvement

opportunities are the important opportunities that can only be garnered through continued involvement in sport (e.g., team affiliation, status, trophies). Attractive alternatives relate to how alluring other activities may be and how these alternatives may conflict with continued involvement in sport. Personal investments refer to the resources which would be lost if participation was discontinued. Lastly, social constraints reflect the expectations that create perceptions of obligation to remain in sport. Positive associations with sport commitment were hypothesized for sport enjoyment, involvement opportunities, personal investments, and social constraints. Attractive alternatives were hypothesized to be negatively associated with sport commitment (Carpenter et al., 1993; Scanlan et al., 1993).

**Figure 1. Original Sport Commitment Model**



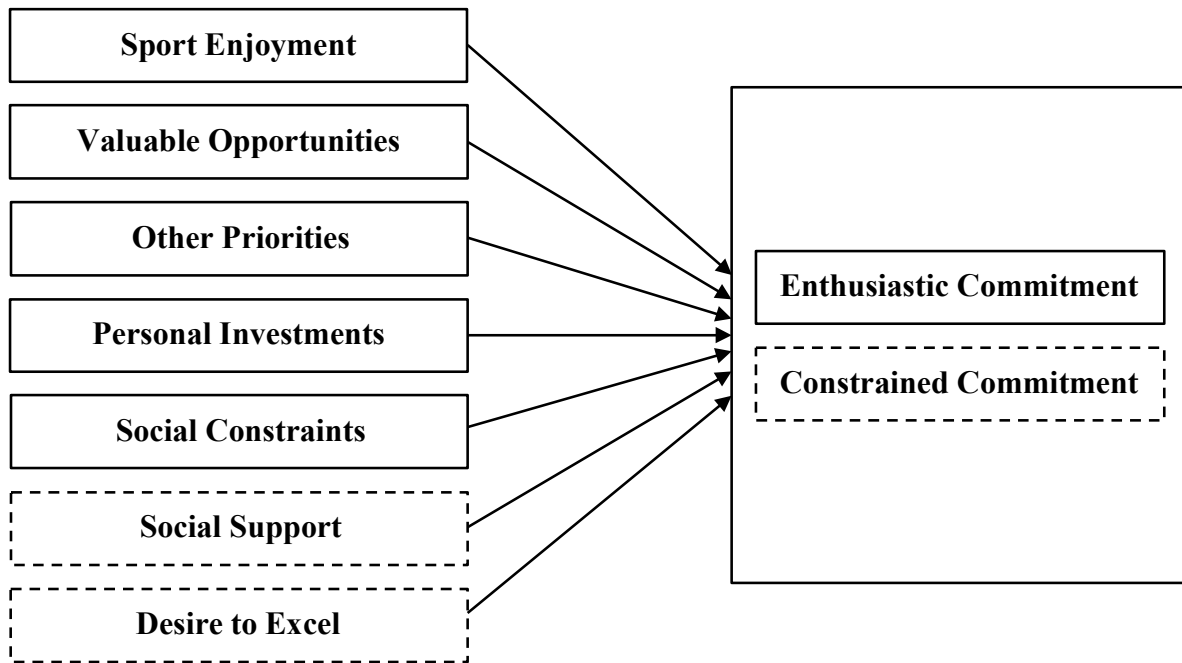
Subsequent testing of the model utilizing adult-aged elite athletes found that hypothesized associations were largely supported by the data (Scanlan, Russell, Beals, & Scanlan, 2003; Scanlan, Russell, Magyar, & Scanlan, 2009; Scanlan, Russell, Scanlan, Klunchoo, & Chow, 2013). Greater sport enjoyment, personal investments, and involvement opportunities were all associated with higher sport commitment. Assessment of involvement alternatives was problematic in predicting sport commitment in initial studies (Carpenter et al.,

1993; Scanlan et al., 1993). Involvement alternatives was measured by asking participants to list an activity they would most like to do but could not participate in because of involvement in their sport. Athletes then rated how attractive that activity was compared to involvement in their current sport. Participants who failed to list an activity were coded as having missing data for the involvement alternatives source. The construct was dropped due to measurement issues, which were addressed for later studies. Social constraints, the social expectation or norms that create perceptions of obligation to remain in sport, was the only source that had a nonsignificant association with sport commitment. At this point in the development of the sport commitment model, the data could neither support nor refute the predicted association between social constraints and sport commitment.

The sport commitment model has been modified over time examining youth athletes aged 13 to 19 years, with the addition of sources supported by sport motivation literature (see Figure 2, dashed boxes represent new candidate constructs; Scanlan, Chow, Sousa, Scanlan, Knifsend, 2016). The updated sport commitment model includes an expansion of the sport commitment concept, specifying that there are two types of commitment: enthusiastic ('want to') or constrained ('have to'). Enthusiastic commitment refers to the psychological desire to persist in sport over time. This type of commitment is similar to that which is described in the original sport commitment model. Constrained commitment is a construct that represents perceptions of obligation to persist in sport over time (Scanlan et al., 2016). Constrained commitment was added to provide a more complete picture of the commitment process, with the understanding that not all athletes remain committed to sport because they want to. Brickman (1987) argued that the nature of commitment included a functional and obligatory component. Including constrained commitment helps represent the potentially obligatory nature of sport commitment.

In addition, two new sources within the sport commitment model include social support and desire to excel, which were added to compensate for the lack of attention to important social and motivational aspects of sport (Scanlan et al., 2016).

**Figure 2. Updated Sport Commitment Model**



Positive associations with enthusiastic commitment were hypothesized for all sources except other priorities (formally known as attractive alternatives), which was expected to be negatively associated with enthusiastic commitment (Scanlan et al., 2016). Constrained commitment, the newly added construct used to represent the other form of commitment, was therefore expected to be negatively associated with enthusiastic commitment. Constrained commitment was expected to positively predict other priorities and social constraints, and negatively associate with sport enjoyment, valuable opportunities, personal investments, social support, and desire to excel. In the time following the development of the original sport commitment model, a series of studies were conducted to evaluate the sources of the model. For each of these studies, social constraints were hypothesized to be a positive predictor of

enthusiastic commitment. Findings were inconsistent, showing no effect (Scanlan et al., 1993; Scanlan et al., 2003; Sousa, Torregrosa, Viladrich, Villamarin, & Cruz, 2007) or a weak negative effect (Carpenter et al., 1993). It is possible that this relationship is moderated by other social constructs that make social constraints more or less salient to athletes. Thus, further examination for social constraints may be warranted.

The relationship between friendship quality and the two forms of sport commitment (e.g., enthusiastic commitment and constrained commitment) may also warrant attention. Although literature suggests peers are important contributors to the sport context, the mere existence of sport peers has not been found to consistently explain an athletes' attitudes and behaviors toward sport (Anderssen & Wold, 1992; Wold & Anderssen, 1992; Vilhjalmsson & Kristjansdottir, 2003). Developmental researchers contend significant contributions could be made to the peer literature base by examining the nature of relationships among peers in sport contexts, particularly the closeness or quality of those relationships (Smith & McDonough, 2008). The overall aim of this dissertation is to extend existing work on peer relationships and sport commitment by incorporating impression motivation as a peer construct, using this construct to address an inconsistent finding in the sport commitment literature, and examining a span of peer relationships constructs within the updated sport commitment model. This is accomplished through two studies.

Study 1 of this dissertation is designed to evaluate if impression motivation explains the association between social constraints and sport commitment as conceived in the original sport commitment model. Social constraints has been inconsistent in predicting commitment, which is surprising considering the importance of social agents (e.g., teammates) to sport involvement. A more complex relationship between social constraints and sport commitment may exist, whereby



prediction may require that athletes possess motivation to control how others view them. Therefore, the purpose of Study 1 is to explore whether impression motivation moderates the relationship between social constraints and sport commitment. Study 2 is designed to provide a more nuanced explanation of how peers tie to sport commitment, employing the updated conception of commitment that considers enthusiastic and constrained forms. Specifically, the purpose of Study 2 is to expand upon Weiss and Smith's (2002) sport friendship work by examining the dimensions of sport friendship quality, along with peer acceptance and impression motivation, as predictors of enthusiastic commitment and constrained commitment.

Sport is an inherently social context that engages a broad range of social actors. Among these social actors, peers play a particularly important role in shaping sport experiences and have garnered increased attention over the years (Smith, 2019). Nonetheless, only a few studies have examined how peer relationships associate with sport commitment. The present dissertation will extend the knowledge base by addressing a complex finding from the extant sport commitment literature and by exploring the association of peer constructs with the recently revised conception of commitment that distinguishes enthusiastic and constrained forms. The interface between the selected peer constructs and how they relate to the sport commitment model is complicated. Yet, the commitment framework that informed the development of the sport commitment model emanates from the examination of close social relationships and how they play a role in commitment (Rusbult, 1980). The goal of our work is to explore close social relationships and social provisions with the hopes of expanding the sport commitment model in line with relevant social variables salient to sport. Hypotheses applied in the current dissertation were generated from work predominately done on youth sport athletes (e.g., late childhood through adolescence). College-aged athletes predominantly consist of individuals considered to be late

stage adolescents (Bukowski et al., 2018). Peer functioning in sport would be expected to highly resemble that of youth sport athletes. Accordingly, college-aged athletes were utilized in conducting the studies within this dissertation. The present dissertation will inform both the peer relationships and sport commitment knowledge bases, and more generally the field of sport psychology.

## **CHAPTER 2: STUDY ONE**

Does Impression Motivation Moderate the Relationship between  
Social Constraints and Sport Commitment?

### **Preface**

Results of this study were presented in October of 2018 at the Canadian Society for Psychomotor Learning and Sport Psychology (SCAPPS) annual conference in Toronto, Ontario, Canada.

## Abstract

The sport commitment model specifies various contributors to sport commitment (Scanlan et al., 1993, 2016). Among these contributors is social constraints, the social expectations or norms that create perceptions of obligation to remain in sport. This construct has been inconsistent in predicting commitment, which is surprising considering the importance of social agents (e.g., teammates, coaches) to sport involvement. A more complex relationship between social constraints and sport commitment may exist, whereby prediction requires athletes to possess motivation to control how others view them, known as impression motivation (Leary & Kowalski, 1990). The purpose of this study was to explore whether impression motivation moderates the relationship of social constraints with sport commitment. University athletes ( $N = 257$ ;  $M$  age = 19.8 years) provided demographic information and completed established assessments of impression motivation (four components) and sport commitment constructs. Eight hierarchical multiple regression models were run predicting enthusiastic and constrained commitment, respectively (four models each). One model predicting enthusiastic commitment supported the moderation hypothesis. The interaction of social constraints and self-development IM predicted a small amount of variance beyond the main effects ( $R^2$ -change = .04,  $p < .05$ ). Simple slopes suggested that as self-development IM is greater, the positive relationship of social constraints with commitment is stronger. In the context of limited support for our general hypothesis, the findings suggest that self-development IM may be informative in understanding sport commitment. Further research is needed to clarify how social relationships and impression motivation may interface to influence sport commitment.

## **Introduction**

Individuals can be committed to an activity for a number of reasons. In the sport context, athletes often report their love of sport as a reason for why they joined and are committed. Sometimes athletes contend they are committed to sport because of the social bonds they develop as a member of a team. Being with and making friends has been found to be a prime reason for why youth continue their sport involvement (Weiss & Ferrer-Caja, 2002). Despite this understanding, limited work has examined the importance of peer relationships to sport commitment.

Interest in sport participation prompted a focused line of work examining the psychological desire to persist in sport over time (Carpenter, Scanlan, Simons, & Lobel, 1993; Scanlan, Carpenter, Schmidt, Simons, & Keeler, 1993), known as sport commitment. The result of this work helped establish the sport commitment model, a theoretical framework used to explain why athletes continue involvement in their sport (Scanlan et al., 1993; Scanlan, Chow, Sousa, Scanlan, & Knifsend, 2016). Validation of the sport commitment model was essential in determining the magnitude and significance of associations between sources and commitment level (Carpenter et al., 1993; Scanlan et al., 1993; Scanlan, Simons, Carpenter, Schmidt, & Keeler, 1993). In the initial validation of the sport commitment model, sport commitment is hypothesized as directly influenced by five sources: sport enjoyment, involvement opportunities, attractive alternatives, personal investments, and social constraints.

Testing of the original sport commitment model found sport enjoyment, involvement opportunities, and personal investments to be positively associated with sport commitment in the hypothesized direction (Scanlan et al., 1993). Despite the hypothesized positive association between social constraints and sport commitment, findings showed a nonsignificant association.

Scanlan and colleagues (1993) concluded the participant sample might have perceived little pressure to participate in sport considering the low mean rating of 2.1 on a 5-point scale. Lastly, the attractive alternatives subscale was not valid or reliable during initial testing and therefore not included in the initial model. Researchers reduced the lack of validity and reliability to issues with number of items in the subscale as well as level of understanding with participants. This construct was addressed in future work but tabled to be included and reviewed in subsequent testing of the model.

Carpenter and colleagues (1993) followed up previous psychometric work by formally testing the sport commitment model with a diverse youth sport sample. Similar to previous findings (see Scanlan et al., 1993), Carpenter and colleagues (1993) hypothesized that sport commitment would be positively associated with sport enjoyment, involvement opportunities, personal investments, and social constraints, while attractive alternatives would be negatively associated with sport commitment. Sport enjoyment, involvement opportunities, and personal investments were again positively associated with sport commitment. Attractive alternatives remained a problematic construct left to be addressed in future research. Interestingly, however, social constraints showed a weak, negative association with sport commitment. This finding was contrary to the hypothesized prediction. Carpenter and colleagues (1993) posited that before any definitive conclusions could be made about the association between social constraints and sport commitment, several issues must be addressed.

First, limited empirical evidence in the broader commitment literature has supported the notion that increased feelings of obligation to maintain involvement would lead to greater commitment (Carpenter et al., 1993; Rusbult, 1988). Second, the hypothesized positive association between social constraints and commitment has been based off a key assumption.

This is the assumption that the feelings of obligation to remain involved are so great that it promotes further involvement. Moreover, the assumption contends individuals are motivated to comply with the social pressures and thus are prompted to remain involved (Rusbult, 1983). Two specific explanations help address these issues. First, the inconsistent correlation between social constraints and sport commitment may suggest that most youth athletes do not feel undue pressure from others to remain in sport. Second, the original conception of the sport commitment model may not properly account for the obligatory nature of commitment. In all, Carpenter and colleagues (1993) concluded that it would be useful to assess variables that may help explain the association between social constraints and sport commitment.

In the early 2000's, Scanlan and colleagues (2003) launched a series of articles focused on continuing efforts to test and expand the sport commitment model. These articles addressed data from Project on Elite Athlete Commitment (PEAK), which allowed Scanlan and colleagues (2003) to diversify their participant sample (e.g., adults) and test external validity through a mixed-methods approach. PEAK I provided insight into the mixed-method approach that would take place for data collection of all the PEAK studies. PEAK II was a direct test and expansion of the sport commitment model. PEAK II specifically examined sport enjoyment, involvement opportunities, attractive alternatives, personal investments, and social constraints. In addition, a potential new construct in social support was tested. Along with testing additional variables that could hypothesized to predict sport commitment, construct terms were also modified. For example, attractive alternatives had been a problematic subscale in the past, failing to remain valid and reliable. Thus, Scanlan and colleagues (2003) decided to modify the name attractive alternatives and change it to other priorities, as well as slightly modify the operational definition. Originally, attractive alternatives mainly focused on the attractiveness of alternative activities.

The terminology and definition change to other priorities captures both the attractiveness and pressing nature of alternative activities. In other words, an activity may or may not be more attractive than sport involvement, but if there are pressing or demanding qualities (e.g., career or family), that may be enough to pull an athlete away from sport. Lastly, social support was added to better capture how social factors predict sport commitment.

The addition of social support may shed some light on the troublesome nature of social constraints predicting sport commitment. Scanlan and colleagues (2003) argued that the addition of social support was done to better capture how social influence plays a role in predicting sport commitment, since social constraints continually showed unequivocal findings. For example, when testing social constraints in PEAK II, no athlete reported feeling an obligation to participate. The posited rationale for these findings was that sport is typically voluntary and enjoyable and thus few athletes in their sample perceived the feeling of obligation to participate (Scanlan et al., 2003). Although this is plausible, social constraints remained problematic despite previous work denoting the importance of capturing the obligatory nature of commitment (Thibaut & Kelley, 1959; Rusbult, 1980).

In PEAK II, Scanlan and colleagues (2003) directly tested a contention put forth by Carpenter and colleagues (1993) that suggested findings for no effect of social constraints meant strong perceptions of personal control may override feelings of obligation to remain in sport. Regardless, the general theme appeared to continue and social constraints showed no effect. Work by Casper and Andrew (2008) found that collegiate tennis players reported higher levels of social constraints when compared to same-aged recreational participants. This work was informative as it suggested that the collegiate athletes exemplified a 'have to' type of commitment described by Scanlan and colleagues (1993). Scanlan and colleagues (2003) argued



that the combination of these results indicate the social constraints are a strengthening source of sport commitment. The final two PEAK studies continued to examine the sport commitment model and identify new candidate sources in the sport commitment model. Social constraints continued to show no effect. A new candidate source of desire to excel was added as a predictor of sport commitment.

In 2016, Scanlan and colleagues developed the Sport Commitment Questionnaire-2 (SCQ-2), which represented the many updates and modifications to the sport commitment model over the years. The updated version of the sport commitment model represents sources that predict two types of commitment: enthusiastic ('want to'; represents the sport commitment outcome variable from the original sport commitment model), and constrained ('have to'). Enthusiastic and constrained commitment represents psychological constructs that involve remaining in sport over time with a key distinction. Enthusiastic commitment represents the psychological desire to persist in sport while constrained commitment refers to the perception of obligation to remain in sport. Seven sources predict the two forms of sport commitment including: sport enjoyment, social constraints, valuable opportunities (formerly known as involvement opportunities), personal investments, other priorities (formerly known as attractive alternatives), social support, and desire to excel.

Despite the expansion of the sport commitment model, social constraints were still hypothesized to positively predict enthusiastic commitment. Social constraints remained unrelated to enthusiastic commitment (Scanlan et al., 2016). Continued work examining the association between social constraints and sport commitment reveals that social constraints show the least consistent association compared to all other sources of sport commitment. Findings

have also shown no effect (Scanlan, Russell, Beals, & Scanlan, 2003; Sousa, Terregrosa, Viladrich, & Cruz, 2007) or weak negative effects (Carpenter & Scanlan, 1998).

These inconsistent findings are surprising considering the importance of social relationships in sport and the significant role that social agents (e.g., teammates, parents, coaches) play in influencing the degree of sport involvement (Scanlan, et al., 2016). As Scanlan and colleagues (1993) suggest, perhaps there is a more complex explanation for the association between social constraints and sport commitment that requires assessment of intervening variables. For example, under certain circumstances people become motivated to control how others view them, a construct known as impression motivation (Leary & Kowalski, 1990; Schlenker, 1980). This seems to be of particular relevance during later adolescence where the opinions of peers are paramount and considerable time and energy is placed in monitoring and controlling how one is viewed by others (Leary & Kowalski, 1990).

An individual's impression motivation fluctuates based on three interrelated factors: goal-relevance of impressions, value of desired goals, and discrepancy between desired and current image (Leary & Kowalski, 1990). Goal-relevant impressions deal with publicity of behavior and an individual's dependency on a target for valued outcomes (e.g., social, self-esteem maintenance, identity development; Leary & Kowalski, 1990). The more public the behavior, the more likely the person will be concerned with how they appear to others. In reference to the sport context, practice and game settings may promote high impression motivation due to the public nature of athletic events. Another factor affecting goal-relevance is whether a person (e.g., authority figure) is dependent on another for a valued outcome. For example, an athlete may be highly motivated to manage their behavior in order to create desired impressions for popular individuals on a team, with the goal of fitting in or being accepted. The value of desired goals

increases or decreases impression motivation based on the value or importance of desired goals. The more an individual values a desired goal the more motivated they will be to engage in behaviors such as impression management that will help them achieve their goal. Finally, the discrepancy between desired and current impressions is largely dictated by the degree to which an individual's impressions fall within or outside what the individual believes is an acceptable range (Schlenker, 1980). For example, if an athlete believes their behavior does not meet peer-based norms, they may be motivated to behave in ways that closer resemble those norms. Together, these interrelated factors determine the degree to which individuals are motivated to impression manage. The greater this motivation to impression manage, arguably there is greater likelihood of social constraints being salient to one's sport commitment.

Accordingly, the purpose of this study was to explore whether impression motivation moderates the relationship between social constraints and sport commitment. We hypothesized that higher impression motivation would strengthen the relationship between social constraints and sport commitment. Findings in this area of work are needed to help advance our understanding of how peer relationships may matter to sport commitment.

## **Method**

### **Participants**

The final sample of study participants included male and female collegiate athletes ( $N = 257$ ; male 73.9%) ranging in age from 18 to 22 years ( $M_{age} = 19.8 \pm 1.22$  years). Participants were recruited from collegiate varsity teams from two states in the Midwestern US. Participants represented a total of 7 different sports including: football, golf, gymnastics, lacrosse, soccer, track and field, and tennis. On average participants had played organized sports for 9.3 years ( $SD = 4.3$ ), spent 2.0 ( $SD = 1.1$ ) seasons with their current team, and participated in their respective

sport for 15.3 ( $SD = 5.8$ ) hours a week. Approximately 81.3% of the participants reported being Caucasian, 7.0% More than One Race, 6.2% African American, 3.1% Other, 0.4% Asian, 0.4% American Indian, and 1.6% did not respond (see Table 1 for a summary of demographic information).

## **Procedure**

Following approval from the Institutional Review Board (see Appendix A for approval letter), coaches and administrative personnel were contacted via phone and/or email to describe the purpose of the study and obtain permission to approach their teams about the study. Once permission was granted, a researcher visited the team at a scheduled meeting to describe the purpose of the study, obtain consent, and monitor the participant's completion of study measures (see Appendix B for study measures). Coaches were asked not to be present while athletes completed the study measures to avoid unintended influence.

## **Measures**

**Demographic Information.** Demographic information was collected (see Table 1) about participants' sex, types of sports, age, years playing sport, years with current team, weekly training hours, ethnicity, and race.

**Impression Motivation.** The Impression Motivation in Sport Questionnaire-Team (IMSQ-T; Payne, Hudson, Akehurst, & Ntoumanis, 2013) was used to assess impression motivation among team-sport athletes. The 15-item scale taps four dimensions of impression motivation including: self-development IM (3 items; e.g., "I am motivated to create a good impression because then other people's impressions of me will match how I would like to be thought of"), social identity development IM (4 items; e.g., "I am motivated to create an impression of an athlete who has a good attitude"), avoidance of negative outcomes IM (4 items;

e.g., “I am motivated to appear to be able to deal with pressure”), and avoidance of damaging impressions IM (4 items; “I am motivated to create a good impression to avoid embarrassment”). Each IMSQ-T item assesses the respondent’s strength of impression motivation using a horizontal 100-mm visual analog scale with descriptive anchor phrases at each extreme. The 0-mm extreme anchor reads ‘This is not at all true of me’ and the 100-mm extreme anchor reads ‘This is extremely true of me’. Reliability and validity of impression motivation has been supported in previous work (see Payne et al., 2013). In the present study, internal consistency reliability of scores for the four dimensions of impression motivation were acceptable ( $\alpha = .70$  to  $.79$ ; see Table 2).

**Sport Commitment.** The Sport Commitment Questionnaire-2 (SCQ-2; Scanlan, Chow, Sousa, Scanlan, & Knifsend, 2016) was used to assess sport commitment among collegiate athletes. The SCQ-2 assesses sport commitment through 58 items tapping a total of 12 dimensions (enthusiastic commitment, constrained commitment, sport enjoyment, valuable opportunities, other priorities, personal investments-loss, personal investments-quantity, social constraints, social support-emotional, social support-informational, desire to excel-mastery achievement, desire to excel-social achievement). Athletes reported their current sport. Only one sport could be chosen. An example item from the social constraints subscale is: ‘People would be disappointed if I didn’t keep playing this sport’. Response options fell on a 5-point Likert scale with anchors (1) strongly disagree, (3) neither agree nor disagree, and (5) strongly agree. Reliability and validity of sport commitment has been supported in a series of previous studies (see Scanlan et al., 2016). In the present study, internal consistency reliability of scores of the variables of interest in the study were acceptable to good (enthusiastic commitment  $\alpha = .89$ ; constrained commitment  $\alpha = .78$ ; social constraints  $\alpha = .70$ ; see Table 2).

## Data Analysis

Data screening and descriptive analyses were conducted according to recommended best practice (e.g., assessment of missing values, univariate and multivariate outliers, normality; see Tabachnick & Fidell, 2013). Overall there was less than 1% missing within the entire data set. There were 6 individuals with multivariate outliers. All of these individuals were removed from final analyses meaning we went from 263 participants to 257 with useable data. Data met normality assumptions. Means, standard deviations, skewness, and kurtosis of the observed variables, as well as correlations among observed variables, were calculated. Then, hierarchical multiple regression analyses were conducted to examine main effects and interactions of social relationship variables predicting sport commitment. Predictor variables were centered before calculating interaction products to address multicollinearity (Aiken & West, 1991). The predictor variables included the social constraints subscale and impression motivation indices (four separate subscales). A total of eight hierarchical multiple regression models were run predicting enthusiastic and constrained commitment, respectively (four models each, one per component of impression motivation). Each multiple regression analysis consisted of three steps. The social constraints subscale was entered first. The respective impression motivation components were entered in the second step (e.g., self-development IM, social identity development IM, avoidance of negative outcomes IM, avoidance of damaging impressions IM). The interaction term was entered in the third step. To address whether the addition of the interaction terms to the model added to prediction of the respective outcome variable, change in  $R^2$  was examined. Significant interaction terms that yielded a significant change in explained variance were graphed with high, medium, and low scores created at one standard deviation above and below the mean (Aiken & West, 1991). Graphs were interpreted by assessing significance of simple slopes.

## **Results**

### **Descriptive Statistics**

Descriptive statistics for the study variables are presented in Table 2. Participants reported relatively high perceptions of enthusiastic commitment, moderate perceptions of constrained commitment, and moderate to high perceptions of social constraints relative to the response set options available on the survey. Additionally, participants reported relatively high perceptions of self-development IM, social identity development IM, and avoidance of negative outcomes IM relative to the response set options available on the survey. Lastly, participants reported moderate to high perceptions of avoidance of damaging impressions IM relative to the response set options available on the survey.

Significant associations among study variables were in theoretically consistent directions. Enthusiastic and constrained commitment shared a negative association. Self-development IM, social identity development IM, and avoidance of negative outcomes IM positively associated with enthusiastic commitment. Social constraints and avoidance of damaging impressions IM were unrelated to enthusiastic commitment. Social identity development IM negatively associated with constrained commitment. Social constraints and avoidance of damaging impressions IM positively associated with constrained commitment. Self-development IM and avoidance of negative outcomes were unrelated to constrained commitment.

**Table 1. Demographic Information (N = 257)**

	N	Minimum	Maximum	Mean (SD)
Sex				
Male	190 (73.9%)			
Female	66 (25.7%)			
Did not respond	1			
Sports				
Football	57 (22.2%)			
Golf	12 (4.7%)			
Gymnastics	3 (1.2%)			
Lacrosse	13 (5.1%)			
Soccer	33 (12.8%)			
Track & Field	134 (51.4%)			
Tennis	7 (2.7%)			
Age		18.0	22.0	19.8 (1.22)
Years playing in sport		1.0	19.0	9.3 (4.25)
Years with team		1.0	4.0	2.0 (1.08)
Training hours (week)		4.0	40.0	15.3 (5.78)
Ethnicity (Hisp/Latino)	13 (5.1%)			
Race				
White	209 (81.3%)			
Black	16 (6.2%)			
More than one race	18 (7.0%)			
American Indian	1 (0.4%)			
Asian	1 (0.4%)			
Other	8 (3.1%)			
Prefer not to say	4 (1.6%)			



**Table 2. Descriptive Statistics, Bivariate Correlations, and Internal Consistency Reliabilities (N = 257)**

	1	2	3	4	5	6	7
1. Enthusiastic Commitment	.87						
2. Constrained Commitment	-.38**	.76					
3. Social Constraints	.11	.41**	.71				
4. Self-Development IM	.18**	-.07	-.00	.70			
5. Social Identity Dev. IM	.29**	-.19**	-.01	.37**	.76		
6. Av. of Negative Out. IM	.13*	.03	.14*	.47**	.28**	.72	
7. Av. of Damaging Imp. IM	.01	.20**	.20**	.37**	.07	.42**	.79
Mean	4.23	2.48	3.65	78.1	85.7	80.1	61.3
Standard	.70	.92	.86	15.4	12.0	17.3	22.9
Skew	-.89	.58	-.61	-.91	-.97	-1.08	-.38
Kurtosis	.13	-.42	.24	.75	.63	.78	-.63
Number of Items	6	5	4	3	4	4	4

Notes. \* $p < .05$ ; \*\* $p < .01$ . Internal consistency reliabilities are presented along the main diagonal. Dev. = Development. IM = Impression Motivation. Av. = Avoidance. Out. = Outcomes. Imp. = Impressions.

**Table 3. Hierarchical Regression Analyses predicting Enthusiastic Commitment**

	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
1. Social Constraints	.09	.05	.11	.09	.05	.11	.12	.05	.14*
2. Self-Development IM				.01	.00	.18*	.01	.00	.15*
3. Moderator Interaction							.01	.00	.19*
<i>R</i> <sup>2</sup>		.01			.04*			.08*	
<i>F</i> for change in <i>R</i> <sup>2</sup>		2.92			8.21*			9.69*	
	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
1. Social Constraints	.09	.05	.11	.09	.05	.11	.09	.05	.12
2. Social Identity Dev. IM				.02	.00	.29**	.02	.00	.29**
3. Moderator Interaction							.01	.00	.12
<i>R</i> <sup>2</sup>		.01			.10**			.11	
<i>F</i> for change in <i>R</i> <sup>2</sup>		2.92			23.69**			3.78	
	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
1. Social Constraints	.09	.05	.11	.07	.05	.09	.08	.05	.09
2. Av. of Negative Out. IM				.01	.00	.12	.01	.00	.12
3. Moderator Interaction							.00	.00	.01
<i>R</i> <sup>2</sup>		.01			.03			.03	
<i>F</i> for change in <i>R</i> <sup>2</sup>		2.92			3.51			.02	
	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
1. Social Constraints	.09	.05	.11	.09	.05	.10	.10	.05	.13
2. Av. of Damaging Imp. IM				.00	.00	.08	.00	.00	-.01
3. Moderator Interaction							.00	.00	.09
<i>R</i> <sup>2</sup>		.01			.01			.02	
<i>F</i> for change in <i>R</i> <sup>2</sup>		2.92			.05			2.02	

Notes. \* $p < .05$ ; \*\* $p < .01$ . Dev. = Development. IM = Impression Motivation. Av. = Avoidance. Out. = Outcomes. Imp = Impressions.

**Table 4. Hierarchical Regression Analyses predicting Constrained Commitment**

	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
1. Social Constraints	.44	.06	.41**	.44	.06	.41**	.42	.06	.39**
2. Self-Development IM				-.00	.00	-.06	-.00	.00	-.05
3. Moderator Interaction							-.01	.00	-.10
<i>R</i> <sup>2</sup>		.17**			1.25			.18	
<i>F</i> for change in <i>R</i> <sup>2</sup>		50.91**			2.20			3.16	
	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
1. Social Constraints	.44	.06	.41**	.44	.06	.41**	.43	.06	.40**
2. Social Id. Dev. IM				-.01	.00	-.18**	-.01	.00	-.18**
3. Moderator Interaction							-.01	.01	-.09
<i>R</i> <sup>2</sup>		.17**			.20**			.21	
<i>F</i> for change in <i>R</i> <sup>2</sup>		50.91**			10.70**			2.41	
	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
1. Social Constraints	.44	.06	.41**	.44	.06	.41**	.44	.06	.41**
2. Av. of Neg. Out. IM				-.00	.00	-.03	-.00	.00	-.03
3. Moderator Interaction							-.00	.00	-.02
<i>R</i> <sup>2</sup>		.17**			.17			.17	
<i>F</i> for change in <i>R</i> <sup>2</sup>		50.91**			.21			.08	
	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
1. Social Constraints	.44	.06	.41**	.41	.06	.38**	.40	.06	.37**
2. Av. of Damaging Imp. IM				.01	.00	.13*	.01	.00	.13*
3. Moderator Interaction							-.00	.00	-.05
<i>R</i> <sup>2</sup>		.17**			.18*			.19	
<i>F</i> for change in <i>R</i> <sup>2</sup>		50.91**			4.95*			.80	

Notes. \* $p < .05$ ; \*\* $p < .01$ . Dev. = Development. IM = Impression Motivation. Av. = Avoidance. Out. = Outcomes. Imp. = Impressions.

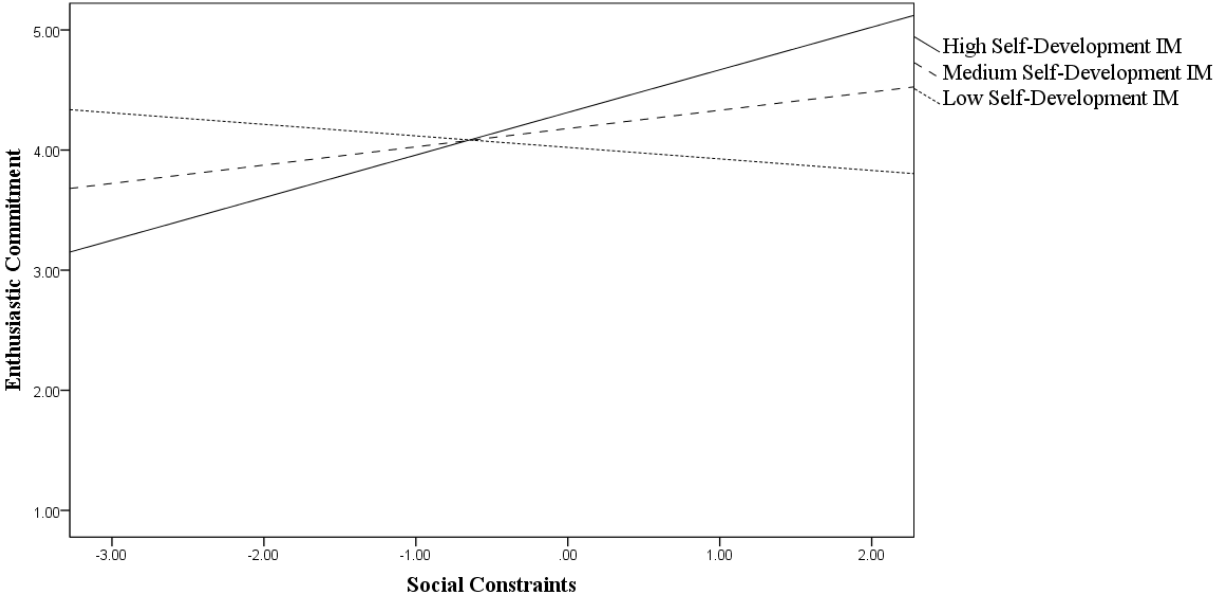
## Hierarchical Multiple Regression Analyses

A total of eight hierarchical regression models were run predicting enthusiastic and constrained commitment, respectively. Four models predicted enthusiastic commitment (Table 3) and four models predicted constrained commitment (Table 4; one per component of impression motivation). One enthusiastic commitment model supported the moderation hypothesis. Step 1 was not significant showing that the main effect of social constraints did not predict enthusiastic commitment. A significant change in  $R^2$  was evident in step 2 ( $R^2$ -change = .04,  $p < .05$ ) when self-development IM was added to the regression model, with the model accounting for 4% of the variance in enthusiastic commitment. The interaction of social constraints and self-development IM predicted a small amount of variance in enthusiastic commitment beyond the main effects (step 3  $R^2$ -change = .04,  $p < .05$ ), with the total model explaining 8% of the variance in enthusiastic commitment. In this final model, social constraints ( $\beta = .11$ ,  $p < .05$ ), self-development IM ( $\beta = .18$ ,  $p < .05$ ), and their interaction ( $\beta = .19$ ,  $p < .05$ ) significantly predicted enthusiastic commitment.

To understand the nature of the moderation interaction presented in Figure 3, simple slopes were analyzed. To examine the significant interaction, we examined the association between social constraints and enthusiastic commitment at low, medium, and high levels of self-development IM. These levels represent -1, 0, and 1 standard deviations from the average self-development IM and enthusiastic commitment scores. Interpretation of the simple slopes suggests low levels of self-development IM has no significant effect on the strength of the social constraints and enthusiastic commitment association. Medium levels of self-development IM has no significant effect on the strength of the association between social constraints and enthusiastic commitment. Lastly, high levels of self-development IM strengthens the association between

social constraints and enthusiastic commitment and is significantly different from 0. In all, the simple slopes suggest that with higher levels of self-development IM the association between social constraints and enthusiastic commitment is stronger.

**Figure 3. Moderation Interaction**



## Discussion

The purpose of this study was to examine whether impression motivation moderates the association of social constraints with sport commitment. Based on theory and research, we hypothesized that higher impression motivation would strengthen the relationship between social constraints and sport commitment. Overall, results provided support for the moderation hypothesis in only one of the eight models run. More specifically, one model predicting the enthusiastic form of sport commitment supported the moderation hypothesis. In this model, the interaction of social constraints and self-development IM predicted a small amount of variance in enthusiastic commitment beyond the main effects (an additional 4%). The simple slopes suggest that athletes who report high levels of self-development IM tend to show a stronger relationship between their social constraints and enthusiastic commitment scores compared to those who report low levels of self-development IM. Although this significant moderation effect was consistent with expectations, overall findings suggest impression motivation largely failed to moderate the association of social constraints with sport commitment of athletes.

Despite limited support for our moderation hypothesis, further examination of the impression motivation construct may help provide some clarity about our findings. For example, one explanation may be that the relationship between social constraints and sport commitment is only evident when an athlete shows high impression motivation. Approximately 64 of the 257 athletes in our sample (~25%) reported mean self-development IM scores of 90 (scale 0 to 100) or higher. This subgroup of athletes tended to report relatively higher mean enthusiastic commitment scores ( $M = 4.48$ ) compared to the remainder of the sample ( $M = 4.18$ ) and also reported relatively higher mean social constraint scores ( $M = 3.74$ ) compared the remainder of the sample ( $M = 3.62$ ). Our significant interaction may suggest that our moderation hypothesis

may only show for the subgroup of athletes who reported relatively higher mean self-development IM, enthusiastic commitment, and social constraints scores.

Our findings support many of the hypothesized associations for sources of sport commitment with the expanded sport commitment model. For example, enthusiastic commitment was negatively associated with constrained commitment. This follows theoretical assumptions that enthusiastic and constrained commitment are conceptually distinct and represent the functional ('want to') and obligatory ('have to') aspects of sport commitment respectively. Social constraints was a nonsignificant predictor of enthusiastic commitment. This finding mirrors previous work showing an inconclusive association between social constraints and enthusiastic commitment. A positive association between social constraints and constrained commitment also aligned with previous work (Scanlan et al., 2016; Wilson et al., 2004; Young & Medic, 2011). This finding is particularly noteworthy. Through the expanded sport commitment model, the social constraints construct has been found to have a stronger association with constrained commitment than enthusiastic commitment. Theoretically this makes sense because constrained commitment and social constraints both revolve around an athlete's perception of obligation to remain in sport. In light of our findings, we contend it is time for the sport commitment model to accommodate a new hypothesis as it pertains to social constraints in that social constraints should be hypothesized to predict constrained commitment.

Several reasons may explain why impression motivation largely did not moderate the association of social constraints with sport commitment of athletes. First, we are unable to determine if any particular social agent drove findings. The social constraints measure was not specific to a single social agent in the participants social sphere. Therefore, respondents may have focused on various agents (e.g., most important social agent or most recent one respondent

interacted with) that may have lead to noise in the data. Thus, the social constraints subscale was not exclusively contextualized to peer relationships despite our underlying assumption about the salience of peers in sport. Evidence has shown that specific sources of social constraints influence commitment differently (Weiss & Weiss, 2007). Weiss and Weiss (2007) found that social constraints from significant adults (i.e., parents, coaches) decreased commitment, while social constraints from peers (i.e., teammates) increased commitment. Future work may benefit from utilizing a more specific measure of social constraints that separates teammates, coaches, and parents as part of distinct subscales (see Weiss, Kimmel, & Smith, 2001).

The findings from the current study suggest several different research avenues for the realm of sport commitment. First, although the moderation hypothesis was largely not supported, the bivariate correlations suggest impression motivation should continue to be considered. Self-development IM, social identity development IM, and avoidance of negative outcomes IM were positively associated with enthusiastic commitment. Social identity development IM was negatively associated with constrained commitment while avoidance of damaging impressions IM was positively associated with constrained commitment. These significant bivariate correlations suggest impression motivation is relevant to sport commitment. Second, the current study used collegiate athletes and future studies should consider using youth sport participants. Focus on youth sport may provide researchers with a broader range of sport commitment that is more reflective of the general population. Future work should also attempt to examine specific peer constructs that can contribute to our understanding of how peers matter to sport commitment. For example, Weiss and Smith (2002) investigated whether dimensions of friendship quality could predict sport enjoyment and sport commitment. Results suggest that athletes who reported more positive perceptions of close friendship found sport more enjoyable



and were more committed to sport (Weiss & Smith, 2002). More work dedicated towards understanding the nature of close friendships in sport may be a fruitful line of research.

## CHAPTER 3: STUDY TWO

### Associations among Dimensions of Friendship Quality and Sport Commitment

#### Abstract

Previous research shows positive friendship quality dimensions to be associated with greater commitment to sport (Weiss & Smith, 2002). However, no study to date has examined friendship quality with the updated sport commitment model, which conceives commitment to exist in enthusiastic and constrained forms, respectively. The primary purpose of this study was to examine sport friendship quality dimensions as predictors of enthusiastic and constrained commitment. The secondary purpose was to explore whether peer acceptance and impression motivation (IM) predicted additional variance in sport commitment above and beyond friendship quality. University athletes ( $N = 198$ ;  $M$  age = 19.97 years) provided demographic information and completed established assessments of friendship quality, friendship conflict, peer acceptance, impression motivation, and sport commitment constructs. Multivariate multiple regression analysis showed greater loyalty and intimacy, lesser conflict resolution, and greater conflict to predict more constrained commitment. Adding peer acceptance and impression motivation to the multivariate model yielded two canonical functions, one dominated by enthusiastic commitment and the other by constrained commitment. Greater self-esteem enhancement and supportiveness, loyalty and intimacy, things in common, companionship and pleasant play, self-development IM, social identity development IM, and avoidance of negative consequences IM predicted greater enthusiastic commitment. Lesser things in common, conflict resolution, and peer acceptance, along with greater conflict and avoidance of damaging impressions IM predicted greater constrained commitment. Overall, findings suggest that positive friendship quality is most

meaningfully associated with sport commitment when considered alongside peer acceptance and impression motivation.

## **Introduction**

Sport and exercise psychology researchers have made concerted efforts to produce a developmental understanding of factors that contribute to and detract from quality sport experiences (Duda, 1987; Gould, 1996; Smith, 2003; Weiss & Bredemeier, 1983). Peer relationships are among these factors, and better understanding of them in sport has much potential to improve understanding of sport motivation. Two important aspects of peer relationships are friendship quality and peer acceptance. These peer constructs have been examined in concurrence with motivation-related variables in youth sport research (Smith et al., 2006). Results of this research reveal adaptive perceptions of friendship quality and peer acceptance in sport to share an association with various outcomes such as adaptive achievement goal orientations, greater perceived physical competence, greater sport enjoyment, and stronger sport commitment (McDonough & Crocker, 2005; Ommundsen, Roberts, Lemyre, & Miller, 2005; Smith et al., 2006; Ullrich-French & Smith, 2006; Weiss & Smith, 2002). Continued research on specific peer constructs in the sport domain is important because young people widely participate in sport, making it a noteworthy developmental context.

Extant work focused on the nature of friendship has largely been studied in school contexts (Hartup, 1995; Newcomb & Bagwell, 1995). Work in this area helped specify social provisions of quality friendship such as companionship, help and guidance, intimate self-disclosure, self-esteem support, and loyalty (Hartup, 1995; 1996). Young people who report friendship higher in these qualities have been found to show better academic achievement and psychosocial development (Berdnt, Hawkins, & Jiao, 1999; Ladd, Kochenderfer, & Coleman, 1996). Early research focused on friendships in the sport context was informed by this literature, which resulted in attention to friendship quality dimensions and their salience in sport.

Over the past few decades, research interest has flourished on the nature of friendships in the physical domain (Patrick et al., 1999; Smith, 1999; Weiss & Smith, 1999; Weiss & Smith, 2002; Weiss, Smith, & Theeboom, 1996). As particularly influential social agents in the physical activity and sport context, peers have been tied to affective components of the physical activity experience. Duncan's (1993) work helped address a lack of research examining the relationship between affect and motivation among adolescents. Specifically, Duncan (1993) investigated the mediational role of affect in understanding the influence of friendship provisions (e.g., companionship and esteem support) on future expectancies of success in a physical education setting. Duncan's (1993) findings suggest that higher levels of companionship and esteem support positively influence future expectations of success. These findings help show that friends play an important role in physical activity settings and could promote sustained participation.

Smith (1999) corroborated Duncan's (1993) findings with a sample of middle school students. He examined whether peer relationships predicted physical activity motivation. Results revealed that peers are important contributors to motivational processes in the physical domain (Smith, 1999). In addition, alternative models showed that higher perceptions of close friendships associated with more positive affect related to physical activity. Together, these early efforts suggest that peers are significant motivational agents in the physical activity domain. Friendships in particular may be critical to quality physical activity experiences, with sport being one of those settings where many young people engage.

In order to assess the degree of support for the study of friendship in the sport context itself, Weiss and colleagues (1996) utilized a qualitative approach to explore the positive and negative features of best sport friendships. Twelve positive qualities and 4 negative qualities emerged from this work, providing empirical support for future work examining friendship

quality in sport. Informed by these qualitative findings, Weiss and Smith (1999) developed a self-report measure tapping six dimensions of sport friendship quality. These dimensions included: self-esteem enhancement and supportiveness, loyalty and intimacy, things in common, companionship and pleasant play, conflict resolution, and conflict (Weiss & Smith, 1999).

With the established measure of sport friendship quality, Weiss and Smith (2002) further contributed to the literature base by examining dimensions of sport friendship quality as predictors of sport enjoyment and commitment in 10- to 18-year-old tennis players. Players who rated their best friend as higher in things in common, companionship and pleasant play, and conflict resolution showed greater enjoyment and commitment to tennis. These findings complement the broader physical activity and developmental literatures where positive friendship quality has been associated with positive social interactions with peers, higher peer acceptance, enjoyment, and adaptive psychosocial development (Berndt et al., 1999; Bagwell & Bukowski, 2018; Bukowski et al., 2018; Duncan, 1993; Ladd, 1999; Newcomb & Bagwell, 1995; Parker & Gottman, 1989).

Whereas Weiss and Smith's (2002) work was grounded in an early conception of sport commitment, the conceptualization of sport commitment has evolved since that time. More specifically, sport commitment is now viewed to be expressed in two forms. The first form is enthusiastic commitment, which is the psychological desire to persist in sport over time (Scanlan et al., 2016). The second form is constrained commitment, which is the psychological perception of obligation to persist in sport over time (Scanlan, et al., 2016). In light of this expansion of the sport commitment model, there may be value in revisiting Weiss and Smith's (2002) work. Investigating sport commitment and positive friendship quality is important in determining whether friendships are affirming of the enthusiastic or constrained form of commitment.

Positive friendship quality dimensions may link predominately to enjoyment in the sport context, encouraging athletes to engage in sport in a ‘want to’ manner that aligns with enthusiastic commitment. Positive friendships may alternatively be linked to constrained commitment due to peer pressure to remain involved in order to sustain friendships. Examining friendship dimensions with the expanded conception of sport commitment may provide a more nuanced understanding of how peers matter to sport commitment.

In addition to friendship quality, peer acceptance and impression motivation are important peer constructs to explore because this offers a more comprehensive representation of peer relationships that addresses not only specific peers, but also the peer group and peer referencing (Smith & McDonough, 2008). Considering friendships occur within a broader peer context, examining peer acceptance and impression motivation will allow for a more complete assessment of how peers matter to sport commitment above and beyond friendship dimensions alone. Peer acceptance is often examined alongside friendship quality because of its developmental importance beginning early in the lifespan (Sullivan, 1953). Impression motivation is important because of the public nature of sport engagement, which fosters social comparison with peers and concern with what others might think (Smith, Mellano, & Ullrich-French, 2019). The peer experience in sport, therefore, involves the close ties of specific friendships along with broader peer group acceptance and more generalized motivation to make positive impressions among peers. Altogether, examining a span of peer constructs may provide a more robust picture for the importance of peer relationships to sport commitment, above and beyond friendship quality dimensions alone.

The current study was designed to provide a more nuanced understanding of how peers tie to sport commitment, employing the updated conception of commitment that considers

enthusiastic and constrained forms with theoretically relevant peer constructs (i.e., friendship quality, peer acceptance, and impression motivation). Specifically, the primary purpose of this study was to examine sport friendship quality dimensions as predictors of enthusiastic and constrained commitment. The secondary purpose was to explore whether peer acceptance and impression motivation predicted additional variance in sport commitment above and beyond friendship quality. Three hypothesis were tested: 1) higher perceptions of friendship quality would positively associate with enthusiastic commitment and negatively associate with constrained commitment; 2) higher perceptions of friendship conflict would negatively associate with enthusiastic commitment and positively associate with constrained commitment; and 3) peer acceptance and impression motivation would predict additional variance in commitment above and beyond the friendship dimensions.

## **Method**

### **Participants**

Study participants were female and male collegiate track and field athletes ( $N = 198$ ; female 62.1%) ranging in age from 18 to 23 years ( $M_{age} = 19.97 \pm 1.26$  years) who were competing in their sport during the spring 2020 season. Participants reported an average of 7.31 years ( $SD = 3.00$ ) of track and field experience with 2.26 of those years spent with their current team ( $SD = 1.24$  years). On average, participants reported 14.40 hours ( $SD = 5.43$ ) of track and field training a week. The majority of the sample reported their ethnicity as Not Hispanic/Latino (95.5%). Approximately 88.4% of the participants reported being Caucasian, 5.1% African American, 3.5% More than One Race, 1.5% Asian, 0.5% American Indian, 0.5% Other, and 0.5% Preferred not to say (see Table 5 for a summary of demographic information).



## **Procedure**

Procedures for the protection of human subjects were reviewed and approved by the Michigan State University Institutional Review Board (IRB; see Appendix C). These protection safeguards were followed throughout the study. Data were collected via an online medium at one time point utilizing a self-report survey. Participants completed a series of established questionnaires that assessed sport commitment, friendship quality, friendship conflict, peer acceptance, and impression motivation. Collection occurred in the summer months following the end of the season. Spring season track and field athletes were specifically sought after due to team roster size and the understanding that these athletes shared interactions with one another before the completion of their season.

Coaches within the Midwestern US were emailed or called about the opportunity to include their team in the study. In the recruitment email or call to the coaches they received a description of the purpose of the study. Following approval from the coaches to include their team in the study, a follow-up email was sent instructing the coach to copy and paste the survey link and forward the survey link to their team (see Appendix D for study measures). This online collection procedure was employed instead of an in-person procedure because data were gathered during the COVID-19 pandemic, and in-person interaction with research participants was prohibited during the study time frame.

## **Measures**

**Demographic Information.** Demographic information was collected about participants' age, race, ethnicity, years participating in the sport, years with current team, and hours trained per week.

**Friendship Quality.** The Sport Friendship Quality Scale (SFQS; Weiss & Smith, 1999) assessed participants' perceptions of positive and negative aspects of their closest teammate relationship. Participants were prompted to report the initials of their best friend and instructed to think of that friend when responding to the items. The 22-item scale tapped five dimensions of friendship quality as well as friendship conflict: companionship and pleasant play (4 items; e.g., "My friend and I play well together."), things in common (4 items; e.g., "My friend and I have common interests."), loyalty and intimacy (4 items; e.g., "My friend and I stick up for each other in sports."), self-esteem enhancement/supportiveness (4 items; e.g., "My friend and I praise each other for doing sports well."), conflict resolution (3 items; e.g., "My friend and I try to work things out when we disagree."), and conflict (3 items; e.g., "My friend and I have arguments."). Response options fell on a 5-point Likert scale with anchors (1) not at all true, (3) somewhat true, and (5) really true, where higher scores indicate greater friendship quality. Reliability and validity of SFQS scores has been shown in previous work (see Weiss & Smith, 2002). In the present study, internal consistency of scores for the five dimensions of positive friendship quality was marginal to acceptable ( $\alpha = .65$  to  $.75$ ; see diagonal of Table 6) and for the dimension of friendship conflict was good ( $\alpha = .91$ ).

**Sport Commitment.** A subset of 11 items from the 58-item Sport Commitment Questionnaire-2 (SCQ-2; Scanlan, Chow, Sousa, Scanlan, & Knifsend, 2016) assessed sport commitment among collegiate track and field athletes. The 11-items tapped two forms of sport commitment: enthusiastic commitment (6 items; e.g., "I am dedicated to keep playing this sport."), and constrained commitment (5 items; e.g., "Staying in this sport is more of a necessity than a desire."). Response options fell on a 5-point Likert scale with anchors (1) strongly disagree, (3) neither agree nor disagree, and (5) strongly agree. Reliability and validity of sport

commitment scores has been supported in a series of previous studies (see Scanlan et al., 2016). In the present study, internal consistency reliability of scores on the two forms of sport commitment was good (enthusiastic commitment  $\alpha = .91$ ; constrained commitment  $\alpha = .81$ ).

**Peer Acceptance.** The social competence subscale of Harter's (2012) Self-Perception Profile for College Students (SPPCS; Harter, 1985; 2012) assessed participants' perceived peer acceptance. This subscale is measured using 4-point structured alternative items. The structured alternative format is designed to counter the tendency to report socially desirable responses (Harter, 1985; 2012). First, the participant was asked to decide which of two statements best describes themselves. An example item from the social competence subscale reads "Some young adults are not satisfied with their social skills BUT Other young adults think their social skills are just fine." Subsequently, the participant was asked if the chosen statement is "Really true" or "Sort of true" for them. Each item was scored from 1 to 4, with higher scores indicating greater social competence. Item scores were averaged to produce a peer acceptance score. Previous work with the social competence subscale has shown internal consistency reliability of scores ranging between .78 and .90. In the present study, internal consistency reliability of scores on the peer acceptance subscale was good ( $\alpha = .71$ ; Harter, 1985; 2012).

**Impression Motivation.** The Impression Motivation in Sport Questionnaire-Team (IMSQ-T; Payne, Hudson, Akehurst, & Ntoumanis, 2013) assessed impression motivation among team-sport athletes. The 15-item scale taps four dimensions of impression motivation including: self-development (3 items; e.g., "I am motivated to create a good impression because then other people's impressions of me will match how I would like to be thought of"), social identity development (4 items; e.g., "I am motivated to create an impression of an athlete who has a good attitude"), avoidance of negative outcomes (4 items; e.g., "I am motivated to appear to be able to

deal with pressure”), and avoidance of damaging impressions (4 items; e.g., “I am motivated to create a good impression to avoid embarrassment”). Each IMSQ-T item required the respondent to identify their strength of impression motivation using a 100-point sliding scale with descriptive anchor phrases at each extreme. The 0 extreme anchor read “This is not at all true of me” and the 100 extreme anchor read “This is extremely true of me”. Reliability and validity of impression motivation scores have been supported in previous work (see Payne et al., 2013). In the present study, internal consistency reliability of scores for the four dimensions of impression motivation was good ( $\alpha = .80$  to  $.87$ ; see Table 6).

### **Data Analysis**

Data screening and descriptive analyses were conducted according to recommended best practice (e.g., assessment of missing values, univariate and multivariate outliers, normality; see Tabachnick & Fidell, 2013). Overall there was less than 1% missing data within the entire data set. There were 12 multivariate outlier cases. All of these individuals were removed from final analyses, meaning analyzed data are from 198 individuals of 210 who completed the study measures. Data met normality assumptions. Internal consistency reliability of scores was assessed using Cronbach’s alpha. Self-Esteem Enhancement, Loyalty and Intimacy, and Conflict Resolution showed weak reliability scores (.68, .65 and .66 respectively). One item was removed from Self-Esteem Enhancement to help achieve acceptable reliability (.71). Loyalty and Intimacy and Conflict Resolution did not improve with the removal of any items. Both subscales remained in analyses in order to mirror Weiss and Smith’s (2002) statistical approach. Thus, results should be interpreted with caution.

To address the study purposes, first a multivariate multiple regression analysis (canonical correlation) was run to assess the relationship of friendship quality dimensions with

commitment. More specifically, the multivariate multiple regression analysis provided the strength of the relationship between the sets of variables, as well as identified which predictor and criterion variables contributed to the multivariate relationship (Tabachnick & Fidell, 2013). The predictor set included self-esteem enhancement/supportiveness, loyalty and intimacy, things in common, companionship and pleasant play, conflict resolution, and conflict. The criterion set included enthusiastic and constrained commitment. Peer acceptance and impression motivation dimensions were subsequently added to the predictor set in a second multivariate multiple regression analysis to identify whether these constructs provided additional explanatory value in the multivariate relationship.

## **Results**

### **Descriptive Statistics**

Descriptive statistics for the study variables are presented in Table 6. Data were assumed to be missing completely at random, as nothing systematic appeared to be driving the (very minimal) missing data. Univariate outliers were identified by assessing if scores were outside the range of  $\pm 3.29$  standard deviations from the mean. 7 scores identified as univariate outliers were removed. Multivariate outlier cases ( $n = 12$ ) had been removed from the sample as described previously. Tests suggested no concerns with the normality of the data.

Participants generally reported high perceptions of enthusiastic commitment and low perceptions of constrained commitment relative to the response set options available on the survey. Additionally, for friendship dimension subscale scores, participants reported high perceptions of positive friendship quality (e.g., self-esteem enhancement and supportiveness, loyalty and intimacy, things in common, companionship, and conflict resolution) and low perceptions of friendship conflict relative to the response set options available on the survey.

Participants reported moderate perceptions of peer acceptance relative to the response set options available on the survey. Lastly, participants reported high perceptions of self-development IM and social identity development IM along with moderate perceptions of avoidance of negative outcomes IM and avoidance of damaging impressions IM relative to the response set options available on the survey.

Significant associations among study variables were in theoretically consistent directions. Enthusiastic commitment showed a moderately strong negative association with constrained commitment. Additionally, enthusiastic commitment showed a positive association with loyalty and intimacy, things in common, companionship and pleasant play, self-development IM, social identity development IM, and avoidance of negative outcomes IM. Lastly, enthusiastic commitment was unrelated to self-esteem enhancement and supportiveness, conflict resolution, friendship conflict, peer acceptance, and avoidance of damaging impressions IM. Constrained commitment showed a negative association with conflict resolution and a positive association with avoidance of damaging impressions IM. Otherwise, constrained commitment was unrelated to peer acceptance and the other friendship and impression motivation dimensions.

**Table 5. Demographic Information (N = 198)**

	N	Minimum	Maximum	Mean (SD)
Sex				
Female	123 (62.1%)			
Male	75 (37.9%)			
Age		18.0	23.0	19.97 (1.26)
Years playing in sport		1.0	19.0	7.31 (3.00)
Years with team		0.0	4.0	2.26 (1.24)
Training hours (week)		4.0	40.0	14.40 (5.43)
Ethnicity (Hispanic/Latino)	9 (4.5%)			
Race				
Caucasian	175 (88.4%)			
African American	10 (5.1%)			
More than one race	7 (3.5%)			
American Indian	1 (0.5%)			
Asian	3 (1.5%)			
Other	1 (0.5%)			
Prefer not to say	1 (0.5%)			

**Table 6. Descriptive Statistics, Bivariate Correlations, and Internal Consistency Reliability Values (N = 198)**

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. EC	.91												
2. CC	-.49**	.81											
3. SES	.14	-.07	.71										
4. LI	.15*	.04	.47**	.65									
5. TC	.16*	-.11	.33**	.47**	.70								
6. CP	.16*	-.01	.39**	.58**	.49**	.75							
7. CR	.13	-.18*	.38**	.44**	.44**	.39**	.66						
8. Conflict	-.06	.10	-.20**	-.05	-.04	.02	-.18*	.91					
9. PA	.13	-.13	.14	.25**	.15*	.23**	.14	-.05	.71				
10. SelfDev	.16*	.03	.08	.10	.12	.21**	.05	.06	.11	.80			
11. SID	.18*	-.03	.23**	.19**	.19**	.23**	.14	-.07	.08	.48**	.87		
12. AVONO	.15*	.07	.16*	.13	.20**	.17*	.11	-.04	.05	.45**	.40**	.82	
13. AVODI	-.11	.16*	-.06	.05	.04	.08	.03	.02	-.08	.48**	.17*	.65**	.81
Mean	4.41	2.09	4.62	4.49	4.08	4.62	4.34	1.82	2.89	82.53	85.64	71.74	54.53
SD	.70	.91	.43	.50	0.56	.44	.64	.83	.76	14.88	16.09	24.46	26.77
Skewness	-1.37	1.06	-1.14	-.85	-.20	-1.14	-.86	.85	-.40	-1.16	-1.39	-.69	-.15
Kurtosis	1.31	.55	.55	.23	-.86	.92	.24	-.14	-.64	1.28	1.34	-.55	-1.04
Range	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-4	0-100	0-100	0-100	0-100

Notes. \* $p < .05$ ; \*\* $p < .01$ . Internal consistency reliability scores are presented along the main diagonal. EC, enthusiastic commitment; CC, constrained commitment; SES, self-Esteem Enhancement and Support; LI, Loyalty and Intimacy; TC, things in common; CP, companionship and pleasant play; CR, conflict resolution; PA, peer acceptance; SelfDev, self-development impression motivation, SID, self-identity development impression motivation; AVONO, avoidance of negative outcomes impression motivation; AVODI, avoidance of damaging impressions impression motivation.



## Multivariate Multiple Regression Analyses

A multivariate multiple regression analysis was conducted with friendship dimensions as the predictor variables and commitment (enthusiastic and constrained) as the criterion variables. Diagnostic tests were performed on the variables of interest and suggested no concerns with multicollinearity. A significant multivariate relationship emerged, Wilks' lambda = .89,  $F(12, 380) = 1.87$ ,  $p < .05$ , that indicated a weak association ( $R_c = .27$ ) between the two sets of variables. Using  $|.30|$  as a criterion value (Tabachnick & Fidell, 2013), the canonical loadings showed that the friendship dimensions of loyalty and intimacy, conflict resolution, and conflict contributed significantly to the multivariate relationship (see Table 7). Constrained commitment exhibited a significant loading while enthusiastic commitment did not show a significant loading. Higher perceptions of loyalty and intimacy and conflict along with lower perceptions of conflict resolution were associated with higher constrained commitment. The redundancy statistic revealed that 2.6% of the variance in the criterion variables was explained by friendship dimensions.

To address the second purpose, a separate multivariate multiple regression analysis was conducted with friendship dimensions, peer acceptance, and impression motivation variables within the predictor set and commitment (enthusiastic and constrained) variables within the criterion set. A significant multivariate relationship emerged, Wilks' lambda = .76,  $F(22, 370) = 2.49$ ,  $p < .001$ , that indicated a moderate association ( $R_c = .39$ ) between the two sets of variables for root 1 and a moderate association ( $R_c = .33$ ) between the two sets of variables for root 2. Using  $|.30|$  as a criterion value (Tabachnick & Fidell, 2013), the first root represents associations with enthusiastic commitment whereas the second root represents associations tied to both enthusiastic commitment and constrained commitment, with constrained commitment having the

dominant loading. The canonical loadings showed that the friendship dimensions of self-esteem enhancement and supportiveness, loyalty and intimacy, things in common, companionship and pleasant play along with the impression motivation subscales of self-development, social identity development, and avoidance of negative outcomes contributed significantly to the multivariate relationship explaining root 1 (see Table 8). The redundancy statistic revealed that 6.3% of the variance in the criterion variables was explained by the predictor set. Consistent with hypotheses, higher perceptions of these predictors were associated with higher enthusiastic commitment.

For root 2, the canonical loadings showed that the friendship dimensions of things in common, conflict resolution, conflict, and peer acceptance as well as the impression motivation dimension of avoidance of damaging impressions contributed significantly to the multivariate relationship (see Table 8). The redundancy statistic revealed that 6.2% of the variance in the criterion variables was explained by the predictor set. Things in common, conflict resolution, and peer acceptance were inversely associated with constrained commitment, whereas conflict and motivation to avoid damaging impressions were positively associated with constrained commitment.

**Table 7. Canonical Loadings for the Relationship of Friendship Quality Dimensions with Enthusiastic and Constrained Commitment (*N* = 198)**

---

Variables	Loadings
Predictor set	
Self-Esteem Enhancement and Supportiveness	-.033
Loyalty and Intimacy	.457
Things in Common	-.161
Companionship and Pleasant Play	.277
Conflict Resolution	-.520
Conflict	.338
Criterion set	
Enthusiastic Commitment	-.034
Constrained Commitment	.886

---

**Table 8. Canonical Loadings for the Relationship of Friendship Quality Dimensions, Peer Acceptance, and Impression Motivation Dimensions with Enthusiastic and Constrained Commitment (*N* = 198)**

Variables	Loadings	
	Root 1	Root 2
Predictor set		
Self-Esteem Enhancement and Supportiveness	.371	-.134
Loyalty and Intimacy	.476	.167
Things in Common	.322	-.305
Companionship and Pleasant Play	.449	.021
Conflict Resolution	.160	-.542
Conflict	-.034	.317
Peer Acceptance	.232	-.378
Self-Development IM	.492	.135
Social Identity Development IM	.484	-.042
Avoidance of Negative Outcomes IM	.524	.278
Avoidance of Damaging Impressions IM	-.115	.495
Criterion set		
Enthusiastic Commitment	.909	-.417
Constrained Commitment	-.086	.996

## Discussion

The purposes of this study were to examine the dimensions of sport friendship as they relate to sport commitment and identify whether peer acceptance and impression motivation would help explain additional variance in sport commitment above and beyond friendship dimensions. Findings for our primary purpose provide partial support for the link between friendship dimensions and sport commitment. Results addressing our secondary purpose provide support for the link of an array of peer constructs (e.g., friendship quality, friendship conflict, peer acceptance, and impression motivation) with sport commitment. Overall, this study adds to the growing body of literature that explores the role of peers in sport motivation processes. More specifically, our work broadens understanding for the importance of quality peer relationships in the sport context to sport commitment.

Findings addressing the primary purpose show sport friendship dimensions (e.g., friendship quality and friendship conflict) shared a significant multivariate relationship with sport commitment, with this relationship driven by the constrained form of sport commitment. This was contrary to our initial hypotheses which posited that friendship dimensions would show a significant multivariate relationship with both the enthusiastic and constrained forms of commitment in theoretically consistent directions. Nonetheless, findings suggested that higher perceptions of loyalty and intimacy, lower perceptions of conflict resolution, and higher perceptions of friendship conflict were associated with higher constrained commitment. Taken together, greater friendship loyalty along with conflict might make the nature of an athletes commitment more constrained (have to) due to perceptions of entrapment.

Findings are largely inconsistent with the hypotheses posited for the primary purpose of the study. For example, results do not support our first hypothesis that suggests greater

perceptions of friendship quality would be positively associated with enthusiastic commitment and negatively associated with constrained commitment. Greater perceived friendship conflict was not negatively associated with enthusiastic commitment, though it was positively associated with constrained commitment as expected, partially supporting our second hypothesis. The failure to support expectations largely resides in the weak overall support for the multivariate model. The redundancy statistic of 2.6% represents a small amount of variance explained in the commitment constructs, and enthusiastic commitment did not contribute meaningfully to the overall multivariate relationship. This is relatively low compared to Weiss and Smith's redundancy statistic that revealed 9.3% of the variance explained in the criterion variables (sport enjoyment and sport commitment) was explained by friendship quality. Thus, despite the significant findings, any conclusions must be drawn with a degree of caution.

The lack of clear support for the primary purpose of this study might be explained in a few ways. Most notably, there exist theoretical differences between the sport commitment model used in this study (Scanlan et al., 2016) and the model used in previous work (Carpenter et al., 1993; Scanlan et al., 1993; Weiss & Aloe, 2019; Weiss & Smith, 2002; Weiss, Weiss, & Amorose, 2010). To date, our work is one of the few studies that have explored sport commitment utilizing the updated sport commitment model. The original conception of the sport commitment model included sport enjoyment, involvement opportunities (valuable opportunities in updated version), attractive alternatives (other priorities in updated version), personal investments, and social constraints as predictors of a single subscale construct of sport commitment (Carpenter et al., 1993; Scanlan et al., 1993). Scanlan et al. (2016) provide an updated model suggesting a total of seven distinct sources (sport enjoyment, valuable opportunities, other priorities, personal investments, social constraints, social support, and desire

to excel) predicting two forms of commitment (enthusiastic and constrained). The updated sport commitment model was used in this study with the aim to provide a more nuanced perspective on how friendship dimensions relate to sport commitment than offered by Weiss and Smith (2002). Differences exist between the sport commitment model used by Weiss and Smith (2002) and used in the current dissertation. The model used in Weiss and Smith's (2002) study characterizes one construct of sport commitment (enthusiastic commitment) while the model used in the current dissertation characterizes sport commitment in two forms (enthusiastic and constrained commitment).

Aside from these different conceptions, Weiss and Smith (2002) completed a multivariate analysis with friendship dimensions constituting the predictor set and sport enjoyment and sport commitment within the criterion set. Results suggested a significant multivariate effect of things in common, companionship and pleasant play, and conflict resolution showing a positive multivariate relationship with enjoyment and commitment such that higher friendship quality was predictive of higher enjoyment and commitment for youth tennis players. From the conception of the original sport commitment model, sport enjoyment has emerged as the strongest predictor of sport commitment (Carpenter et al., 1993; Scanlan et al., 1993; Scanlan, Russell, Beals, & Scanlan, 2003; Scanlan, Russell, Magyar, & Scanlan, 2009; Scanlan, Russell, Scanlan, Klunchoo, & Chow, 2013; Scanlan, Russell, Wilson, & Scanlan, 2003). In a traditional test of the full sport commitment model, sport enjoyment is antecedent to commitment rather than at the same conceptual level of the model.

To test the importance of sport enjoyment within the sport commitment model, Weiss, Kimmel, and Smith (2001) tested three models. One model posited that sources exert a direct influence on sport commitment (original sport commitment model). The second model tested

whether sport enjoyment served as a mediator of the relationship between other sources and sport commitment. A third model assessed direct and indirect effects of sources of sport commitment on sport commitment. Overall, the findings supported sport enjoyment as a mediator of the relationship between sources of sport commitment and sport commitment. Thus, one could argue that the inclusion of sport enjoyment in the criterion set of the analyses may help explain why Weiss and Smith (2002) were able to predict more variance in their criterion set than was observed in the present study.

Findings addressing our secondary purpose are more consistent with previous research and theory. First, our findings for the second purpose of the study suggest that the predictor set (friendship quality, friendship conflict, peer acceptance, and impression motivation) shares a significant multivariate relationship with the criterion set (enthusiastic commitment and constrained commitment). Interestingly, the results support our two original hypotheses related to our primary purpose, which suggests the predictor set would explain each form of sport commitment in theoretically consistent directions (enthusiastic commitment and constrained commitment show opposite relationships). There were two significant multivariate solutions that were observed. The first predicted enthusiastic commitment. More specifically, higher self-esteem enhancement and supportiveness, loyalty and intimacy, things in common, companionship and pleasant play, self-development IM, social identity development IM, and avoidance of negative outcomes IM were related with higher enthusiastic commitment. Track and Field athletes who rated their best friend higher in friendship quality (excluding conflict resolution) and reported higher impression motivation (excluding avoidance of damaging impressions) felt a greater psychological desire to persist in sport over time. It would also appear that friendship conflict, peer acceptance, and avoidance of damaging impressions were unrelated



to the enthusiastic form of commitment. Together, this suggests that positive relationships with a close friend on the team combined with a higher motivation to impression manage is associated with a greater psychological desire to persist in sport over time.

The second significant multivariate solution predicted constrained commitment. For example, lower things in common, conflict resolution, and peer acceptance were associated with higher constrained commitment. Higher friendship conflict and levels of reported avoidance of damaging impressions was associated with higher constrained commitment. In essence, track and field athletes who rated higher conflict with their best friend, showed higher motivation to avoid damaging impressions, and felt less accepted by their teammates tended to feel a greater psychological perception of obligation to remain in sport over time. Importantly, both multivariate solutions predicted a notably higher proportion of variance in the commitment variables than did the friendship dimensions alone. This supports the third hypothesis, though it should be noted that the variance in commitment explained overall is modest.

Findings addressing our second purpose suggest that a “social tapestry” might be necessary to observe the relevance of friendship dimensions to sport commitment. This would align with extant work suggesting that friendship contributes more notably to prediction of motivational constructs when included within a broader set of peer relationship variables (Smith et al., 2006; Ullrich-French & Smith, 2006). The set of peer constructs selected for the current study were drawn from three broad conceptual categories: peer group, specific peers, and peer-referenced (Smith & McDonough, 2008). Within the peer group and specific peers categories, peer acceptance and friendship quality were selected respectively. Peer acceptance and friendship quality are often examined together in peer work, as they are emphasized as critical developmental constructs in Sullivan’s (1953) interpersonal psychiatry theory. Impression

motivation represents the peer-referenced category and has been relatively understudied to date, though athletes perform in a highly observable context that may predispose them to be concerned about how they are viewed by others. In the larger statistical model that we examined, all three categories of peer variables contributed in some way to the prediction of sport commitment. This suggests that careful selection of a span of peer constructs might provide the richest explanations for how peer relationships tie to motivation in sport.

The peer acceptance findings are consistent with extant theory. Results suggest that less perceived peer acceptance is associated with higher constrained commitment. This suggests that athletes who perceive lower acceptance by their teammates may also perceive a higher sense of obligation to remain in sport. Previous work examining peer acceptance in the sport context supports these findings, as lower perceived peer acceptance has been linked with less adaptive peer relationships (Smith et al., 2006). Interestingly, our findings also suggest that friendship dimensions may further explain the implications of low peer acceptance. For example, higher constrained commitment was associated with lower perceptions of positive friendship quality. These findings support Sullivan's (1953) notion that peer acceptance and friendship quality are distinct constructs in shaping developmental outcomes. Our findings suggest that low peer acceptance and less positive friendship quality combine to predict a sense of obligation to remain in sport.

Lastly, impression motivation appeared to play a salient role in examining peer relationships with this sample. Within the multivariate model, higher self-development IM, social identity development IM, and avoidance of negative outcomes IM were associated with higher enthusiastic commitment. Interestingly, these aspects of impression motivation are often tied to the development of the self or identity. Lamont-Mills and Christensen (2006) found that

most athletes often place a great amount of influence on their sport involvement to uphold their athletic identity. In essence, athletes in our sample may have surmised that the embodiment of being an athlete is characterized as an individual and highly invested in their craft. Thus, it is plausible that careful monitoring for development of self and/or athlete identity would be linked with the willingness to persist in sport over time. In addition, our findings relative to impression motivation suggest that concerns surrounding the management of social impressions among peers is important to how an athlete views their sport participation.

Altogether, despite our interesting findings, our study is not without limitations. First, participants were exclusively from track and field (also known as Athletics), which is widely considered an individual sport and may present generalizability issues with respect to team sport. This limitation may have been somewhat mitigated in two ways. One, the peer constructs examined would be expected to be salient across sport contexts. Two, we utilized the generalized peer acceptance measure which might have been helpful in light of the track and field sample. Respondents were free to consider ‘peer group’ as it resonated with them, rather than consider acceptance across the spectrum of subgroups present on a track team (e.g., jumps/sprints, middle/long distance, weight events, pole vault). Second, because our data was cross-sectional in nature, we are unable to fully examine the direction of our effects. This limitation is particularly important considering our assumption that various peer relationship variables predict sport commitment. Although it would be contrary to previous research, there is a possibility that our findings could be more of an interplay between variables. It is reasonable to expect that peers matter to physical activity participation and that physical activity participation matters to how young people relate to each other (Smith, 2019). Third, the method and timing of data collection could be an issue. Surveys were taken online and after the season had already finished because of

restrictions tied to COVID-19. The season for the teams in our sample had been cancelled prematurely. Athletes' physical isolation from teammates required them to offer responses based on memory of the season rather than current in-season experiences. Capturing data during the middle of the season is preferred because peer interactions with teammates then would be frequent, current, and in person. Lastly, this current research utilized a variable-centered approach. Although this approach does help us capture a quantitative means to identify how peer relationships matter to sport commitment, a person-centered approach can allow for the social tapestry of an athlete's experience to be captured in profiles, that in themselves may be meaningful to motivational outcomes independent of variable-specific associations (Smith et al., 2006).

In conclusion, the current study makes multiple contributions to the literature regarding sport peer relationships and sport commitment. To our knowledge, this is one of the first studies to investigate friendship variables utilizing the updated sport commitment model. Additionally, this is one of the first studies to examine a host of peer constructs in an attempt to predict sport commitment in a collegiate athlete sample. Collectively, our findings are insightful as they highlight the importance that peers play in shaping sport experiences and motivation.

## CHAPTER 4: GENERAL DISCUSSION

Considerable effort has been devoted to understanding the importance of social agents to physical activity behavior of young people (Van Der Horst, Chin A. Paw, Twisk, & Mechelen, 2007). The sport context affords athletes frequent interactions with key social agents who may facilitate or undermine quality sport experiences (Smith, 2003). Such agents have been found to transfer value systems, model active or inactive behavior, provide access to environments that promote or impede active living, and afford psychological support and reinforcement for active or sedentary behaviors (Sallis, Prochaska, & Taylor, 2000). The role of adults (e.g., coaches, parents, and teachers) and their impact on psychosocial and behavioral outcomes for athletes has seen much attention (Brustad, Babkes, & Smith, 2001; Sallis & Owen, 1999). More recently, broader consideration of the role and importance of peers in sport settings has garnered interest (Smith, 2003; Smith, Mellano, & Ullrich-French, 2019).

Peers are primary social agents deeply engaged in most athletes' day-to-day sport involvement (Smith, 2007). They are also known to be primary agents in the socialization process (Bugental & Grusec, 2006). To better understand what motivates athletes to participate in sport, researchers have examined reasons they report for sport involvement. This work indicates that interacting with others and deriving a sense of affiliation are among the prime reasons for sport involvement (Allender, Cowburn, & Foster, 2006; Weiss & Petlichkoff, 1989). Affiliating and interacting with peers can help cultivate friendships, foster social support, model different types of attitudes and behaviors towards physical activity, and structure norms (Smith, 2019).

Despite the centrality and motivational salience of peers in sport (Smith, Ullrich-French, Walker, & Hurley, 2006; Ullrich-French & Smith, 2009; Weiss & Smith, 2002), limited work

has examined how peer relationships tie to sport commitment. This dissertation was designed to closely examine peer relationships and sport commitment by incorporating impression motivation as a peer construct to help address inconsistent findings in the sport commitment literature, and examine a span of peer relationship constructs within the updated sport commitment model. The two studies in this dissertation addressed two knowledge gaps: (1) an understanding for the type of athlete who would be susceptible to social pressure to persist in sport over time; and (2) an understanding of how close friendships, along with peer acceptance and impression motivation, tie to sport commitment. Therefore, the purpose of Study 1 was to explore whether impression motivation moderates the association between social constraints and sport commitment. The purpose of Study 2 was to expand upon Weiss and Smith's (2002) sport friendship work by examining the dimensions of sport friendship quality, along with peer acceptance and impression motivation, as predictors of enthusiastic commitment and constrained commitment.

Both studies employed the updated conception of the sport commitment model and examined the relevance of peer constructs within a sport context. Collectively, the results of this dissertation support the updated conception of sport commitment that is broken into enthusiastic and constrained forms, highlight the relevance of impression motivation to sport commitment, suggest that exploring a span of peer constructs is necessary to enrich our understanding of peers and sport commitment, and reinforce the motivational salience of peers in the sport context. The following discussion will briefly summarize findings from the multi-study dissertation, highlight theoretical implications of the research, outline key limitations of the research, and offer potential avenues for future inquiry.

Study 1 findings largely suggested that impression motivation did not moderate the association between social constraints and sport commitment. One of the eight statistical models supported the moderation hypothesis. Specifically, higher self-development IM strengthened the association between social constraints and the enthusiastic form of commitment. Overall, our significant model accounted for an additional 4% of variance predicted above and beyond the main effect of impression motivation (8% variance predicted for the whole model). Although results should be interpreted with caution due to lack of robust support, we do contend that the significant model reflects a meaningful contribution. Within the context of our sample, social variables were modest predictors of sport commitment. The two-fold increase in explained variance for this particular model may be meaningful and suggest that close attention to self-development IM in future work is warranted.

Study 2 findings partially supported our primary hypotheses showing that higher perceptions of loyalty and intimacy, lower levels of conflict resolution, and higher perceptions of conflict were associated with higher constrained commitment. Findings yielded support for our third hypothesis related to the second purpose. For example, two significant multivariate solutions predicted a notably higher proportion of variance in the commitment variables than did the friendship dimensions alone, albeit modestly. The first significant multivariate solution predicted enthusiastic commitment. More specifically, higher self-esteem enhancement and supportiveness, loyalty and intimacy, things in common, companionship and pleasant play, self-development IM, social identity development IM, and avoidance of negative impressions IM were associated with higher enthusiastic commitment. The second significant multivariate solution predicted constrained commitment. Lower things in common, conflict resolution, and peer acceptance along with higher friendship conflict and levels of reported avoidance of

damaging impressions IM were associated with higher constrained commitment. Taken together, our findings for Study 2 suggest that the selected peer constructs combine to help predict both forms of sport commitment in theoretically consistent directions. In fact, findings addressing our second purpose suggest that examining the full social tapestry of an athlete may best enrich our understanding of how social relationships, such as those with peers, tie to sport commitment. Incorporating peer acceptance and impression motivation constructs helped make visible the contributions of friendship quality to commitment. Our results from Study 2 suggest that peers do matter to sport commitment.

### **Theoretical Contributions and Implications**

Each study in this dissertation was built upon a conceptual argument posited to address how peers tie to sport commitment. The first study was built on the conceptual argument that impression motivation moderates the association between social constraints and sport commitment. The second study was built on the conceptual argument that a span of peer constructs are necessary to fully capture the relevance of social influence in sport. Lastly, both studies addressed the extent to which peers are motivationally salient in the sport context. The updated sport commitment model (Scanlan et al., 2016) served as the conceptual foundation underpinning the studies, with the arguments above representing possible extensions of the framework with respect to the inclusion of peer relationships constructs.

In the first study impression motivation was introduced as a potential moderator for the inconsistent association between social constraints and sport commitment. The updated sport commitment model provides a framework that helps explain why athletes continue sport involvement (Scanlan et al., 2016) and posits that seven sources (sport enjoyment, valuable opportunities, other priorities, personal investments, social constraints, social support, and desire



to excel) predict two forms of sport commitment (enthusiastic and constrained commitment). Over the past few decades, all sources of sport commitment have been reasonably consistent in prediction of sport commitment, except for social constraints. Social constraints, the perception of the obligation to remain in sport due to perceived pressure from others (e.g., peers), has been inconsistent in predicting commitment with findings showing no effect (Scanlan et al., 1993; Scanlan et al., 2003; Sousa et al., 2007) or a weak negative effect (Carpenter et al., 1993). Considering the inconclusive findings, and the initial conceptualization of this construct as a positive predictor of commitment, it was considered possible that this relationship is moderated by other social constructs that make social constraints more or less salient to athletes. Thus, a moderation hypothesis was forwarded that as impression motivation is greater, the association between social constraints and sport commitment would be stronger. Results provided support of our moderation hypothesis for only one of the eight statistical models that were examined.

Findings suggest that in order for social constraints to be associated to enthusiastic commitment, a theoretically relevant social variable (e.g., self-development IM) is required to explain the association. Although this result must be interpreted with caution, adding self-development IM as a moderator accounted for twice the amount of variance predicted (from 4% to 8%) compared to the main effect of impression motivation on sport commitment. This may indicate that identity processes and the self are salient to the enthusiastic form of sport commitment. In broad terms, an athlete that shows higher impression motivation may be attempting to portray an ideal self within the bounds of their athletic identity. Thus, what it means to be an ideal athlete may be linked to stronger enthusiastic commitment. Moreover, this finding is in the context of several significant, albeit modest, correlations between the impression motivation dimensions and the respective forms of commitment. Due to the highly observable

nature of sport, athletes may be tuned into how they are viewed by their teammates. The collective findings suggest that impression motivation may be a useful social construct when attempting to determine an athlete's psychological desire to persist in sport over time.

The second conceptual argument addressed a span of peer constructs necessary to fully capture the relevance of social influence in sport. Peer-based research on sport and physical activity experiences have been assessed using a range of peer constructs representing three general categories: peer-group, specific peers, and peer-referenced (Smith & McDonough, 2008). Stemming from Sullivan's (1953) guiding interpersonal theory of psychiatry, a majority of peer relationship research has focused on peer acceptance and friendship quality. Thus, peer acceptance and friendship quality were selected from the peer-group and specific peers categories, respectively, to mirror guiding theory and to examine how quality peer relationships may predict sport motivation. The peer-referenced category represents how peers offer a frame of reference that can shape a young person's affect and experiences in a setting like sport. Surprisingly, despite the highly observable and social nature of sport, limited work has examined the process by which young athletes attempt to control how others view them. In addition, few studies have examined how this construct operates in a team context. Therefore, impression motivation, an important component of the conceptualization of impression management (Leary & Kowalski, 1990), was selected to address whether an athlete's motivation to control how they are viewed ties to sport commitment. Considered together, these theoretically-grounded peer constructs were selected to enrich our understanding of social influence in youth sport.

The first purpose for Study 2 was to examine whether the set of friendship quality dimensions would predict the two forms of sport commitment (enthusiastic and constrained) in theoretically consistent directions. Higher loyalty and intimacy and lower conflict

resolution were tied to higher levels of constrained commitment. Although not initially intuitive, these findings do provide evidence for a plausible explanation of collegiate sport participation. For example, the interplay between high levels of loyalty and intimacy and conflict with constrained commitment may speak to the relevance of team affiliation and identity comparisons among a collegiate sample of track and field athletes. It is plausible that athletes in our sample reported being loyal to their closest friend on the team because they are teammates who share common team goals. The heightened awareness and emphasis on promoting the team over self may contribute to why athletes would rate loyalty high. In the same vein, performance in track and field is highly objective which may lead to frequent comparisons of performance. This may contribute to higher conflict and less capacity for conflict resolution because teammates are objectively compared within sport. Athletes must reconcile strong loyalty to peers with the competitive comparisons, which could contribute to a more constrained conception of commitment. This is speculative, yet points to the possibility that future work assessing how athletes reconcile mixed peer dynamics could inform understanding of sport commitment.

The second purpose of this study was to address the potential additive value of including peer acceptance and impression motivation constructs with friendship quality in predicting sport commitment. Findings suggest that greater prediction of the commitment constructs is attained by adding these constructs. Most interestingly, after adding peer acceptance and impression motivation to the predictor set the friendship quality dimensions emerged as more salient predictors of commitment. This suggests that peer dynamics might be considered as a “social tapestry,” whereby an athlete’s range of peer experiences combine in ways that are salient to sport commitment. This concept is supported by extant work showing profiles of peer constructs to predict motivation-related constructs in sport (Smith et al., 2006) and also aligns with the

interpersonal theory of psychiatry (Sullivan, 1953). That perspective suggests that while friendship and peer acceptance offer unique contributions to psychological development, they also express an interplay with one another. For example, when relationships with the peer group are not developmentally adaptive, a friendship can take on greater developmental importance as a form of accommodation.

Overall this adds to our understanding of quality peer relationships and sport commitment. First, four of the five positive friendship quality dimensions were tied to enthusiastic commitment suggesting that greater friendship quality is predictive of a stronger psychological willingness to persist in sport over time. This supports previous work that provides evidence for the utility of adaptive sport friendships in shaping sport experiences (Ullrich-French & Smith, 2006; Weiss & Smith, 1996; Weiss & Smith, 1999; Weiss & Smith, 2002). Second, three of the four impression motivation dimensions were tied to higher enthusiastic commitment. This suggests that greater motivation to impression manage is predictive of a stronger enthusiastic commitment. Lastly, higher constrained commitment was tied to less things in common, conflict resolution, and peer acceptance as well as higher conflict and avoidance of damaging impressions IM. Things in common was the only friendship quality dimension found to predict both enthusiastic commitment (positively) and constrained commitment (negatively) in the multivariate analyses. Considering the multivariate roots represents orthogonal sets of multivariate relationships, this is a particularly interesting finding. It may suggest that things in common is a particularly critical construct of friendship quality as it relates to how someone will be committed to sport. Less peer acceptance and higher perceptions of conflict and avoidance of damaging impressions IM appear to be tied to constrained commitment as well. This finding is more complex in nature, but could be surmised as exemplifying athletes who report sharing

higher levels of conflict with their close friend, feeling less accepted by the peer group, and are mainly concerned with avoiding damaging impressions. Together, these findings suggest that more adaptive friendship quality appears to predict enthusiastic commitment while more friendship conflict and concern about not being accepted by the broader peer group seems to predict constrained commitment.

Considered as a whole, the studies in this dissertation enrich the knowledge base of sport commitment, expand the sport peer relationships literature, and open pathways for novel examination of sport motivation. Our findings for both studies support the updated conception of sport commitment that is broken into enthusiastic and constrained forms. The mean values for enthusiastic commitment and constrained commitment in the present research were comparable to past work (see Scanlan et al., 2016), suggesting the measurement of these constructs is consistent across sport samples. Our work also shows the relevance of the impression motivation construct within the sport commitment model framework. Lastly, we offer a foundation for future efforts that are designed to understand how peer dynamics impact sport commitment. Although we contend it is premature to draw practical implications, future research directions could help generate helpful recommendations to those who work with athletes. Through examination of a span of peer constructs, it is evident that peer relationships are important for predicting sport commitment. Future research investigating the role of social influence on sport motivation is warranted to capture the ways social agents shape sport experiences.

### **Limitations**

This multi-study dissertation highlights that peers and the relationships they share are important to consider when studying sport commitment. While the current dissertation makes meaningful contributions to the peer relationship and sport commitment literature bases,

limitations were present. First, the samples for both studies were largely White athletes of predominately Non-Hispanic descent from Midwestern United States. The demographics of participants may have played a role in the types of dyadic relationships the athletes were willing to share with teammates. In peer relationship research, homophily has begun to be discussed in reference to the interactions and relationships peers share with one another. Homophily is the tendency of individuals to be attracted to those who are similar to themselves (Maturo & Cunningham, 2013). Because our samples were highly homogeneous, it is likely that they share common interests based on demographics alone which may not be representative of the general population. This may explain, for example, the unique role that the things in common friendship quality dimension played in distinguishing forms of commitment in the second study. It is unclear if this finding would hold in a more heterogeneous group of athletes. Future work should seek to examine a diverse sample of athletes in order to show the full range of relationships and interactions to ensure generalizability.

Second, the current dissertation sampled college-aged athletes for both studies whereas the hypotheses in the current dissertation were generated from work predominately conducted with youth sport athletes (e.g., late childhood through adolescence; see Smith, 2003; Smith, 2019). For the purposes of our current work, college-aged athletes were considered to be late stage adolescents (Bukowski et al., 2018). We argued that peer comparisons would highly resemble that of youth sport athletes. Recent work has examined whether there are differences in psychological commitment to sport between high school and collegiate athletes (Weiss, 2015). Specific to our variables of interest within the sport commitment model (e.g., enthusiastic commitment, constrained commitment, social constraints), Weiss (2015) found no significant differences between high school and collegiate athletes. Also, it is important to note that sport

commitment researchers sampled adult-aged elite athletes in the development and testing of the revised sport commitment model (see Scanlan et al., 2013). The sample in the current dissertation highly resembles those athletes in terms of age and relative levels of sport commitment. This said, developmental differences of importance may exist with respect to social functioning that warrant attention in future work. A developmentally informed approach to future research on this topic will likely advance understanding (Smith, Dorsch, & Monsma, 2012).

Third, impression motivation was found to predict sport commitment, yet this measure was not specifically contextualized to peers. Findings relative to impression motivation in the current dissertation suggest this construct may be worth closer examination in future work for two reasons. First, Martin Ginis and Mack (2012) argue the study of impression management has the greatest value when theoretically aligned with sources of physical activity behavior. Previous theory-driven studies examining impression management in physical activity include the use of self-determination theory (Brunet & Sabiston, 2009), social cognitive theory (Brunet & Sabiston, 2011; Gammage, Martin Ginis, & Hall, 2004), and the theory of planned behavior (Latimer & Martin Ginis, 2005). Despite these studies providing evidence for a link between impression management and physical activity behavior, no study to date has examined impression management within the sport commitment framework and limited work has examined impression motivation within the sport setting. Based on the evidence provided in both studies, exploring the relevance of impression motivation in sport appears warranted. To the extent possible, future peer-focused research could benefit from more exclusive assessment of impression motivation as tied to peers (some items are related to the coach) and as tied to

concerns surrounding continued sport participation (being viewed as uncommitted, a quitter, and so forth).

Fourth, the peer acceptance variable in Study 2 was generalized rather than contextualized to the team. Peer acceptance typically shows a stronger association with sport involvement (Fitzgerald, Fitzgerald, & Ahrne, 2012), however the subscale was a modest predictor in Study 2. The generalized nature of the peer acceptance measure used in Study 2 may explain the weaker contribution of this variable to the statistical model. The lack of contextualization means we are unable to determine if the athletes reported according to perceptions of peer acceptance within their team or more broadly outside of the sport context. The disadvantage is that the peer acceptance variable showed a weaker contribution (than usual) within the statistical model due to lack of contextualization. Future work examining the role of peer acceptance must carefully address the type of sport the participants are engaged in and whether or not a contextualized or generalized measure is the best approach.

Fifth, the studies in the present investigation employed a variable-centered approach. A variable-centered approach has been the most common approach in peer relationship and sport commitment research. While variable-centered approaches help researchers provide a rich understanding of peer relationships and sport commitment, a limitation of this approach is that it is limited to the scales used and average values aggregated. Future work would benefit from a person-centered approach. Extant work suggests that there is a finite set of profiles based on perceptions of peer relationships (Smith, Ullrich-French, Walker, & Hurley, 2006). For example, Smith and colleagues (2006) were able to describe five profiles (e.g., alpha, isolate, reject, survive, thrive) based on youth perceptions of friendship quality, friendship conflict, and peer acceptance. The profiles themselves were shown to be motivationally salient, suggesting that the



tapestry of peer relationships that an athlete experiences is important and of independent value from the experience of the respective peer variables in themselves. Future work that seeks to complement the current traditional, variable-centered work with person-centered investigation holds much potential to expand understanding of sport commitment.

Sixth, the present studies were of cross-sectional design and therefore do not offer a causal understanding of relationships among peer and sport commitment constructs. Longitudinal research may be especially useful for understanding sport commitment research because it would provide researchers with an opportunity to assess whether this psychological construct produces insight into sport continuation behavior. Though past work has examined peer constructs as tied to sport continuation (Ullrich-French & Smith, 2009), expanding this work to be conducted specifically within the current sport commitment model holds promise for advancing understanding of sport motivation.

Lastly, the COVID-19 pandemic data collection was completed remotely because in-person data collection was not permitted. Data were collected after athletes already knew their track and field season was cancelled whereas normally the data would be collected in-season. Because few athletes had in-person interactions while completing the study measures, there is a possibility that our results may have been affected. Responses would be based on memory and the athletes would be at a distance from teammates. More reliable and less socially desirable responses may have been captured if the athletes completed the survey during their midseason, when most self-report measures are cast.

### **Directions for Future Research and Conclusion**

The above section speaks to various possibilities for future research to address study limitations. Additional future research directions are inspired by the findings and potential to

build upon the contributions of the current dissertation. There are numerous avenues to pursue to better understand the importance of peer relationships to sport commitment. For example, assumptions of directionality in the current dissertation were made based on the sport commitment model and extant peer research suggesting that functional peer relationships may strengthen sport commitment. However, future investigations could explore the possibility that possessing high sport commitment lends itself to forming more engaged and functional peer relationships in sport. It is plausible that athletes may initially be drawn to sport(s), and that involvement in sport(s) is what provides opportunities for affiliation and interaction with peers. Smith (2019) encourages consideration of mutually reinforcing pathways and suggests peers matter to sport and sport matters to how young people relate with one another. In addition, our work may encourage future investigations that explore how peer relationships can influence overt athlete behaviors in sport. Previous work in sport peer literature has examined sport continuation (Smith & Ullrich-French, 2009) along with other peer relationship constructs. Though the sport commitment model provides a useful framework for studying psychological forms of commitment, assessing overt behavior would be invaluable in addressing key questions in sport motivation literature.

Secondly, longitudinal research would be especially useful for understanding peers and sport commitment, as it would allow for researchers to study developmental changes over time. Peer relationships are highly dynamic and therefore require observations at multiple time points to capture the developmental significance of sport friendships, that may vary in quality over time. Utilizing a longitudinal design would also provide researchers with the opportunity to evaluate friendship stability. A potentially valuable path for future research would be to explore the benefits of enduring sport friendships compared to those with less stable friendships.

Lastly, the social nature of our world has continued to broaden through advances in technology. Electronic communication (e.g., texting, social media, email) has become a prominent feature of young people's lives and can help connect athletes even when they are away from the sport context. Because electronic communication is ubiquitous, there is potential for electronic communication to shape the nature of athlete's interactions with their teammates and potentially play a role in sport experiences. One method for addressing electronic communication among teammates is to assess: time spent interacting with teammates via electronic communication, identification of the primary tool used to interact with teammates (e.g., texting, social media, email), number of social media platforms used to interact with teammates, time spent specifically interacting with best/closest teammate through electronic communication, and whether athletes impression manage through electronic communication. In addition, technology may be used to help collect important information from participants through the Experience Sampling Method. The Experience Sampling Method is a technique used for collecting information on both content and context of daily lives. Utilizing this method may be useful in describing an athlete's interactions with their teammates both in and out of the sport context (Hektner, Schmidt, & Csikszentmihalyi, 2007). Short surveys can be sent via text or email to the athletes' phones to help capture a more in-the-moment appraisal of social interactions.

In conclusion, this multi-study dissertation offered novel insights into how peer relationships matter to sport commitment. These studies provide a foundation to pursue additional research examining how peers tie to sport commitment. Addressing the importance of peers to the sport experience has gained traction of the past few decades. As this research area continues to grow we will begin to learn more about distinct mutually reinforcing pathways that

would suggest peers matter to sport commitment and that the sport context matters to how peers interact with one another. Continued examination will help provide an understanding on the ways peer relationships shape sporting experiences and commitment.

## **APPENDICES**

## **APPENDIX A**

Study One – Human Research Protection Program Approval Letter

**MICHIGAN STATE**  
**UNIVERSITY**

**EXEMPT DETERMINATION**

May 29, 2018

To: Alan Lyle Smith

Re: **MSU Study ID:** STUDY00000606  
**Principal Investigator:** Alan Lyle Smith  
**Category:** Exempt 2  
**Exempt Determination Date:** 5/25/2018

Title: Sport Motivation and Young Adults

This project has been determined to be exempt under 45 CFR 46.101(b) 2.

**Principal Investigator Responsibilities:** The Principal Investigator assumes the responsibilities for the protection of human subjects in this project as outlined in Human Research Protection Program (HRPP) Manual Section 8-1, Exemptions. Your request to change personnel was processed.

**Continuing Review:** Exempt projects do not need to be renewed.

**Modifications:** In general, investigators are not required to submit changes to the Michigan State University (MSU) Institutional Review Board (IRB) once a research study is designated as exempt as long as those changes do not affect the exempt category or criteria for exempt determination (changing from exempt status to expedited or full review, changing exempt category) or that may substantially change the focus of the research study such as a change in hypothesis or study design. See HRPP Manual Section 8-1, Exemptions, for examples. If the project is modified to add additional sites for the research, please note that you may not begin the research at those sites until you receive the appropriate approvals/permissions from the sites.

**Change in Funding:** If new external funding is obtained for an active human research project that had been determined exempt, a new initial IRB submission will be required, with limited exceptions.

**Reportable Events:** If issues should arise during the conduct of the research, such as unanticipated problems that may involve risks to subjects or others, or any problem that may increase the risk to the human subjects and change the category of review, notify the IRB office promptly. Any complaints from participants that may change the level of review from exempt to expedited or full review must be reported to the IRB. Please report new information through the project's workspace and contact the IRB office with any urgent events. Please visit the Human Research Protection Program (HRPP) website to obtain more information, including reporting timelines.



**Office of  
Regulatory  
Affairs  
Human Research  
Protection Program**

4000 Collins Road  
Suite 136  
Lansing, MI 48910

517-355-2180  
Fax: 517-432-4503  
Email: [irb@msu.edu](mailto:irb@msu.edu)  
[www.hrpp.msu.edu](http://www.hrpp.msu.edu)

**Personnel Changes:** After determination of the exempt status, the PI is responsible for maintaining records of personnel changes and appropriate training. The PI is not required to notify the IRB of personnel changes on exempt research. However, he or she may wish to submit personnel changes to the IRB for recordkeeping purposes (e.g. communication with the Graduate School) and may submit such requests by submitting a Modification request. If there is a change in PI, the new PI must confirm acceptance of the PI Assurance form and the previous PI must submit the Supplemental Form to Change the Principal Investigator with the Modification request (<http://hrpp.msu.edu/forms>).

**Closure:** Investigators are not required to notify the IRB when the research study is complete. However, the PI can choose to notify the IRB when the project is complete and is especially recommended when the PI leaves the university.

**For More Information:** See HRPP Manual, including Section 8-1, Exemptions (available at <https://hrpp.msu.edu/msu-hrpp-manual-table-contents-expanded>).

**Contact Information:** If we can be of further assistance or if you have questions, please contact us at 517-355-2180 or via email at [IRB@ora.msu.edu](mailto:IRB@ora.msu.edu). Please visit [hrpp.msu.edu](http://hrpp.msu.edu) to access the HRPP Manual, templates, etc.

**Exemption Category.** This project has qualified for Exempt Category (ies) 2. Please see the appropriate research category below from 45 CFR 46.101(b) for the full regulatory text.<sup>123</sup>

**Exempt 1.** Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

**Exempt 2.** Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

**Exempt 3.** Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph (b)(2) of this section, if: (i) the human subjects are elected or appointed public officials or candidates for public office; or (ii) federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.



**Exempt 4.** Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

**Exempt 5.** Research and demonstration projects which are conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine: (i) Public benefit or service programs; (ii) procedures for obtaining benefits or services under those programs; (iii) possible changes in or alternatives to those programs or procedures; or (iv) possible changes in methods or levels of payment for benefits or services under those programs.

**Exempt 6.** Taste and food quality evaluation and consumer acceptance studies, (i) if wholesome foods without additives are consumed or (ii) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.

<sup>1</sup>Exempt categories (1), (2), (3), (4), and (5) cannot be applied to activities that are FDA-regulated.

<sup>2</sup> Exemptions do not apply to research involving prisoners.

<sup>3</sup> Exempt 2 for research involving survey or interview procedures or observation of public behavior does not apply to research with children, except for research involving observations of public behavior when the investigator(s) do not participate in the activities being observed.

## **APPENDIX B**

### Study One – Questionnaire Packet

**Information and Consent Form**  
*Sport Motivation and Young Adults*

**Primary Researcher:** Alan L. Smith, Ph.D., Professor and Chairperson, Department of Kinesiology, Michigan State University, IM Sports Circle, 308 West Circle Dr., East Lansing, MI 48824, alsmith@msu.edu or 517-355-4731.

You are invited to participate in a research study. We are studying sport experiences of collegiate athletes. We are required to provide a consent form to inform you about the research study, to convey that participation is voluntary, and to explain risks and benefits of participation. Feel free to ask us any questions.

**Purpose of the Research:** We want to better understand your reasons for participating in sport. You have been selected as a possible participant in this study because you are currently participating in collegiate athletics.

**What You Would Do:** If you are interested in participating, you will complete our survey. The survey asks questions about your current sport experience and will take about 15-20 minutes to complete. Once completed, you will seal your survey in an envelope and provide it to the researcher.

**Potential Benefits:** You will not directly benefit from your participation in this study. However, your participation in this study may help contribute to our understanding of sport experiences.

**Potential Risks:** The potential risks of participating in this study are minimal. You may be uncomfortable answering some questions. It is ok not to answer them, and you can stop participating at any time without penalty. A common risk of research is losing privacy. We have procedures in place (see below) to limit this risk.

**Privacy and Confidentiality:** Your coach will not be present while you complete the survey. Your name will not be on your survey and your responses will be kept confidential. Completed surveys will be stored in a locked closet and responses will be stored on password-protected computers in our lab. Our lab is locked at all times and is located on the campus of Michigan State University. All records will be kept at least three years after closing the study.

Research participant confidentiality will be protected to the maximum extent of the law. However, when required by law, government representatives and the Michigan State University's Human Research Protection Program (HRPP) may need to look at and/or copy your information. Finally, the results of our survey may be published in a manuscript or presented at professional meeting, but the identities of research participants will remain anonymous.

**Your Right to Participate, Say No, or Withdraw:** Participation is voluntary. You have the right to say no. There is no penalty to you if you decide not to participate, or if you start the survey but then decide to stop before finishing it.

**Compensation and Costs for Being in the Study:** There are no costs involved in the study. You will not receive compensation for your participation.

**Contact Information:** If you have concerns or questions about this study, such as scientific issues, how to do any part of it, or to report an injury (i.e., physical, psychological, social, financial, or otherwise) please contact the researcher: Femi Oluyedun, Department of Kinesiology, Michigan State University, IM Sports Circle, 308 W. Circle Drive, East Lansing, MI 48823. Mr. Oluyedun can be reached at [oluyedun@msu.edu](mailto:oluyedun@msu.edu) or 317-332-9962. The supervising faculty member, Dr. Smith, can be reached at [alsmith@msu.edu](mailto:alsmith@msu.edu) or 517-355-4731.

If you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Program at 517-355-2180, Fax 517-432-4503, e-mail [irb@msu.edu](mailto:irb@msu.edu), or regular mail at 4000 Collins Rd., Suite 136, Lansing, MI 48910.

**Thank you for your consideration. If you wish to participate in this study, please remove this information and consent page from the survey packet and keep for your records. You may begin answering the survey questions. Proceeding with the survey constitutes your consent to participate in this research.**

**Remember - please do NOT include your name anywhere on the survey. When you have completed the survey please check to be sure that you answered each item (except any that you choose not to answer) and then place in the attached unmarked envelope. Please seal the envelope and then hand to the researcher.**

**Thank you again for your consideration.**

**MICHIGAN STATE**  

---

**U N I V E R S I T Y**

**Sport Motivation and Young Adults**

**INSTRUCTIONS:** We are interested in the impressions you would like people to form of you in sport, and we would appreciate it if you would answer some questions about this. Please be honest with yourself when responding to the questions, and the best way to do that is to respond quickly without over-thinking the answer. For each of the following items, please put a mark through the line which indicates your feeling for what the item is asking you.

**1. I am motivated to create a good impression because then other people's impressions of me will match how I'd like to be thought of**

This isn't at all true of me      0      \_\_\_\_\_      100      This is extremely true of me

**2. I am motivated to create a good impression because I wish to be respected by my team-mates**

This isn't at all true of me      0      \_\_\_\_\_      100      This is extremely true of me

**3. I am motivated to create a good impression because the positive feedback I'll get makes me feel good**

This isn't at all true of me      0      \_\_\_\_\_      100      This is extremely true of me

**4. I am motivated to create an impression of an athlete who has a good attitude**

This isn't at all true of me      0      \_\_\_\_\_      100      This is extremely true of me

**5. I am motivated to create an impression of an athlete who is professional in their conduct**

This isn't at all true of me      0      \_\_\_\_\_      100      This is extremely true of me

**6. I am motivated to create an impression of an athlete who is fair and a "good sport"**

This isn't at all true of me      0      \_\_\_\_\_      100      This is extremely true of me

**7. I am motivated to create an impression of an athlete who is professional in their play**

This isn't at all true of me      0      \_\_\_\_\_      100      This is extremely true of me

**8. I am motivated to create a good impression on my coach, so that he/she doesn't demote me to a lower team**

This isn't at all true of me      0      \_\_\_\_\_      100      This is extremely true of me

**9. I am motivated to create a good impression to avoid embarrassment**

This isn't at all true of me      0      \_\_\_\_\_      100      This is extremely true of me

**10. I am motivated to create a good impression when I am competing for selection**

This isn't at all true of me      0      \_\_\_\_\_      100      This is extremely true of me

**11. I am motivated to create a good impression on my coach, so that he/she doesn't sub me out of the game in crucial situations**

This isn't at all true of me      0      \_\_\_\_\_      100      This is extremely true of me

**12. I am motivated to avoid being criticized by coach as this will create a bad impression in the eyes of my team-mates**

This isn't at all true of me      0      \_\_\_\_\_      100      This is extremely true of me

**13. I am motivated to appear to be able to deal with pressure**

This isn't at all true of me      0      \_\_\_\_\_      100      This is extremely true of me

**14. I am motivated to perform to the best of my ability, because I don't want to be ridiculed at the next practice**

This isn't at all true of me      0      \_\_\_\_\_      100      This is extremely true of me

**15. I am motivated to give reasonable excuses for *poor* performance, so that my team-mates don't view me negatively**

This isn't at all true of me      0      \_\_\_\_\_      100      This is extremely true of me



**INSTRUCTIONS:** Based on the sport that you are currently playing, please rate how much you agree/disagree to each statement by circling a number from 1 to 5 using the scale given below. There are no right or wrong answers. We only want your honest opinion about the following statements.

<b>The sport that I am currently playing and basing my responses is:</b>	<b>Strongly disagree</b>	<b>Somewhat disagree</b>	<b>Neither agree nor disagree</b>	<b>Somewhat agree</b>	<b>Strongly agree</b>
_____					
1. Playing this sport is fun.	1	2	3	4	5
2. I have spent a lot of time in this sport.	1	2	3	4	5
3. Other things in my life make it difficult to play this sport.	1	2	3	4	5
4. I try to dominate in this sport.	1	2	3	4	5
5. In this sport, I am constantly trying to improve my skills.	1	2	3	4	5
6. The mental effort I have put into this sport makes it difficult to stop playing.	1	2	3	4	5
7. Staying in this sport is more of a necessity than a desire.	1	2	3	4	5
8. There are future events in this sport that I would really miss experiencing if I no longer played.	1	2	3	4	5
9. I am being pulled away from this sport by other things in my life.	1	2	3	4	5
10. The physical effort I have put into this sport makes it difficult to stop playing.	1	2	3	4	5
11. I like playing this sport.	1	2	3	4	5
12. I am dedicated to playing this sport.	1	2	3	4	5

13. Once I attain a goal in this sport, I challenge myself to continue improving.	1	2	3	4	5
14. I would really miss the travel experiences I have if I no longer played this sport.	1	2	3	4	5
15. People would be upset if I didn't keep playing this sport because they have invested so much.	1	2	3	4	5
16. In this sport, I strive for the perfect performance.	1	2	3	4	5
17. In this sport, I have to put in a lot of training.	1	2	3	4	5
18. People would be disappointed if I didn't keep playing this sport.	1	2	3	4	5
19. I have a mentor who provides guidance in this sport.	1	2	3	4	5
20. People who are important to me attend the majority of my competitions in this sport.	1	2	3	4	5
21. I feel trapped in this sport.	1	2	3	4	5
22. People who are important to me are there for me after I perform poorly in this sport.	1	2	3	4	5
23. The time I have spent in this sport makes it difficult to stop playing.	1	2	3	4	5
24. I constantly try to learn from my mistakes in this sport.	1	2	3	4	5
25. When things get tough in this sport, people who are important to me provide comfort.	1	2	3	4	5
26. It is almost impossible to play this sport because of other things in my life.	1	2	3	4	5
27. People who are important to me teach me the strategies of this sport.	1	2	3	4	5
28. I love to play this sport.	1	2	3	4	5
29. In this sport, I strive to be better than my opponents.	1	2	3	4	5

30. I would really miss the things I learn in this sport if I didn't play.	1	2	3	4	5
31. I am willing to overcome any obstacle to keep playing this sport.	1	2	3	4	5
32. Although I think about quitting this sport, I feel I must keep playing.	1	2	3	4	5
33. I push myself to win every time I compete in this sport.	1	2	3	4	5
34. I have put a great deal of mental effort into this sport.	1	2	3	4	5
35. People who are important to me teach me about the mental side of this sport.	1	2	3	4	5
36. There are other things in my life that limit my participation in this sport.	1	2	3	4	5
37. Because people who are important to me also play this sport, it is assumed that I will keep playing.	1	2	3	4	5
38. In this sport, I strive to improve every aspect of my performance.	1	2	3	4	5
39. I feel I am forced to keep playing this sport.	1	2	3	4	5
40. Other things in my life compete with playing this sport.	1	2	3	4	5
41. I push myself to reach my full potential in this sport.	1	2	3	4	5
42. It is difficult to stop playing because of the personal discipline I have maintained in this sport.	1	2	3	4	5
43. I feel I have to keep playing this sport, even though I don't want to.	1	2	3	4	5
44. To improve in this sport, I push myself to achieve the goals that I have set.	1	2	3	4	5
45. Playing this sport is very pleasurable.	1	2	3	4	5

46. I am determined to keep playing this sport.	1	2	3	4	5
47. In this sport, I challenge myself to be better than everyone else.	1	2	3	4	5
48. I have put a great deal of physical effort into this sport.	1	2	3	4	5
49. I am very attached to this sport.	1	2	3	4	5
50. I would really miss the competition in this sport if I no longer played.	1	2	3	4	5
51. When I compete in this sport, people who are important to me cheer me on.	1	2	3	4	5
52. People who are important to me expect me to keep playing this sport.	1	2	3	4	5
53. I will continue to play this sport for as long as I can.	1	2	3	4	5
54. People give me trustworthy advice about this sport.	1	2	3	4	5
55. Playing this sport makes me happy.	1	2	3	4	5
56. It is difficult to stop playing because of the training I have put into this sport.	1	2	3	4	5
57. In this sport, people provide useful instruction to improve my performance.	1	2	3	4	5
58. I am willing to do almost anything to keep playing this sport.	1	2	3	4	5

**INSTRUCTIONS:** Please read each statement carefully and decide which young adults you are more like. Then decide if that is “really true” for you or “sort of true” for you and check the corresponding box. Select only one box per row/question. Please make sure you answer all items.

	Really True for Me	Sort of True for Me			Sort of True for Me	Really True for Me	
<b>Sample Sentence</b>							
	<input type="checkbox"/>	<input type="checkbox"/>	Some young adults like to go to the movies in their spare time	BUT	Other young adults would rather go to sports events	<input type="checkbox"/>	<input type="checkbox"/>
1.	<input type="checkbox"/>	<input type="checkbox"/>	Some young adults do very well at all kinds of sports	BUT	Other young adults <i>don't</i> feel that they are very good when it comes to sports.	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	Some young adults think they could do well at just about any new athletic activity	BUT	Other young adults are afraid they might not do well at a new athletic activity.	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	Some young adults feel that they are better than others their age at sports	BUT	Other young adults don't feel they can play as well.	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	Some young adults don't do well at new outdoor games	BUT	Other young adults are good at new games right away.	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	Some young adults do not feel that they are very athletic	BUT	Other young adults feel that they <i>are</i> very athletic.	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	Some young adults find it hard to make friends	BUT	Other young adults find it pretty easy to make friends	<input type="checkbox"/>	<input type="checkbox"/>

7.	<input type="checkbox"/>	<input type="checkbox"/>	Some young adults know how to make classmates like them	BUT	Other young adults <i>don't</i> know how to make classmates like them	<input type="checkbox"/>	<input type="checkbox"/>
8.	<input type="checkbox"/>	<input type="checkbox"/>	Some young adults <i>don't</i> have the social skills to make friends	BUT	Other young adults do have the skills to make friends	<input type="checkbox"/>	<input type="checkbox"/>
9.	<input type="checkbox"/>	<input type="checkbox"/>	Some young adults understand how to get peers to accept them	BUT	Other young adults <i>don't</i> understand how to get peers to accept them	<input type="checkbox"/>	<input type="checkbox"/>
10.	<input type="checkbox"/>	<input type="checkbox"/>	Some young adults know how to become popular	BUT	Other young adults <i>do not</i> know how to become popular	<input type="checkbox"/>	<input type="checkbox"/>

**INSTRUCTIONS:** Please read each statement carefully and decide how true the statement is when thinking about your best or closest friend on your current team. Write your best friend's first initial in the box below and think about him/her as you respond to the statements below. When you respond to the statement, indicate how true each statement is when thinking about your friend, where 1 means "Not at all true for my best friend and me" and 5 means "Really true for my best friend and me". There are no right or wrong answers, so please answer each question as honestly as you can.

My best friend's first initial:
------------------------------------

**Circle the answer below each statement that best indicates how you feel about you and your best friend in soccer.**

	<b>Not at all True</b>	<b>A Little True</b>	<b>Somewhat True</b>	<b>Mostly True</b>	<b>Really True</b>
1. My friend gives me a second chance to perform a skill.	1	2	3	4	5
2. My friend and I can talk about anything.	1	2	3	4	5
3. My friend and I have common interests.	1	2	3	4	5
4. My friend and I do fun things.	1	2	3	4	5
5. My friend and I make up easily when we have a fight.	1	2	3	4	5
6. My friend and I get mad at each other.	1	2	3	4	5
7. My friend and I praise each other for doing sports well.	1	2	3	4	5
8. My friend and I stick up for each other in sports.	1	2	3	4	5
9. My friend and I do similar things.	1	2	3	4	5
10. I like to play with my friend.	1	2	3	4	5

	<b>Not at all True</b>	<b>A Little True</b>	<b>Somewhat True</b>	<b>Mostly True</b>	<b>Really True</b>
11. My friend and I try to work things out when we disagree.	1	2	3	4	5
12. My friend and I fight.	1	2	3	4	5
13. My friend looks out for me.	1	2	3	4	5
14. After I make mistakes, my friend encourages me.	1	2	3	4	5
15. My friend and I have the same values.	1	2	3	4	5
16. When we have an argument, my friend and I talk about how to reach a solution.	1	2	3	4	5
17. My friend and I play well together.	1	2	3	4	5
18. My friend and I have arguments.	1	2	3	4	5
19. My friend and I think the same way.	1	2	3	4	5
20. My friend and I tell each other secrets.	1	2	3	4	5
21. My friend and I spend time together.	1	2	3	4	5
22. My friend has confidence in me during sports.	1	2	3	4	5



**INSTRUCTIONS:** Please answer all of the following questions.

1. What is your age? \_\_\_\_\_
2. What is your sex?    Female                      Male
3. What is your ethnicity?    Hispanic or Latino              NOT Hispanic or Latino
4. What is your race?
  - a. American Indian or Alaska Native
  - b. Asian
  - c. Black or African American
  - d. Native Hawaiian or Other Pacific Islander
  - e. White
  - f. More than one race
  - g. Other
  - h. Prefer not to say
5. How many years have you participated in your sport? \_\_\_\_\_
6. What position do you play on your team? \_\_\_\_\_
7. How many years have you been a member of your current team? \_\_\_\_\_
8. Approximately how many hours a week do you spend playing your sport? \_\_\_\_\_

## **APPENDIX C**

Study Two – Human Research Protection Program Approval Letter

**MICHIGAN STATE**  
**U N I V E R S I T Y**

**EXEMPT DETERMINATION**  
**Revised Common Rule**

May 26, 2020

To: Alan Lyle Smith

Re: **MSU Study ID:** STUDY00004611  
**Principal Investigator:** Alan Lyle Smith  
**Category:** Exempt 2(i)  
**Exempt Determination Date:** 5/26/2020  
**Limited IRB Review:** Not Required.

Title: Sport Motivation and Collegiate Athletes

This study has been determined to be exempt under 45 CFR 46.104(d) 2(i).

Temporary institutional restrictions are in place until further notice for human subject research conducted by MSU employees or agents. All MSU human research activities conducted by MSU employees or agents that take place in Michigan and cannot be done at home or place of residence with no inter-personal interaction with participants and others like research staff must stop unless the project is a clinical trial activity, that if discontinued, would negatively impact the patient's care, or is urgently related to the COVID-19 pandemic. Ongoing clinical trial activity, which if discontinued, would negatively impact the patient's care may continue with already enrolled participants. New enrollment in clinical trials conducted in Michigan is not permitted without additional institutional approval.



**Office of  
Regulatory  
Affairs  
Human Research  
Protection Program**

4000 Collins Road  
Suite 136  
Lansing, MI 48910

517-355-2180  
Fax: 517-432-4503  
Email: [irb@msu.edu](mailto:irb@msu.edu)  
[www.hrpp.msu.edu](http://www.hrpp.msu.edu)

For MSU human research activities that take place outside of Michigan, unless there is the potential for direct therapeutic benefit to the participant (drug or device), any in-person participant interaction must immediately pause. This applies to both exempt and non-exempt research studies.

For all human research studies, research procedures involving no direct in-person interactions with participants may continue (e.g. data analysis, online surveys, telephone interviews) in otherwise permissible venues, so long as State and local requirements are met.

Please note that the situation is rapidly evolving and may further change. Visit <http://hrpp.msu.edu/COVID-19/index.html> for the latest information and updates, including the restrictions and their duration as the situation evolves.

**Principal Investigator (PI) Responsibilities:** The PI assumes the responsibilities for the protection of human subjects in this study as outlined in Human Research Protection Program (HRPP) Manual Section 8-1, Exemptions.

**Continuing Review:** Exempt studies do not need to be renewed.

**Modifications:** In general, investigators are not required to submit changes to the Michigan State University (MSU) Institutional Review Board (IRB) once a research study is designated as exempt as long as those changes do not affect the exempt category or criteria for exempt determination (changing from exempt status to expedited or full review, changing exempt category) or that may substantially change the focus of the research study such as a change in hypothesis or study design. See HRPP Manual Section 8-1, Exemptions, for examples. If the study is modified to add additional sites for the research, please note that you may not begin the research at those sites until you receive the appropriate approvals/permissions from the sites.

Please contact the HRPP office if you have any questions about whether a change must be submitted for IRB review and approval.

**New Funding:** If new external funding is obtained for an active study that had been determined exempt, a new initial IRB submission will be required, with limited exceptions. If you are unsure if a new initial IRB submission is required, contact the HRPP office. IRB review of the new submission must be completed before new funds can be spent on human research activities, as the new funding source may have additional or different requirements.

**Reportable Events:** If issues should arise during the conduct of the research, such as unanticipated problems that may involve risks to subjects or others, or any problem that may increase the risk to the human subjects and change the category of review, notify the IRB office promptly. Any complaints from participants that may change the level of review from exempt to expedited or full review must be reported to the IRB. Please report new information through the study's workspace and contact the IRB office with any urgent events. Please visit the Human Research Protection Program (HRPP) website to obtain more information, including reporting timelines.

**Personnel Changes:** After determination of the exempt status, the PI is responsible for maintaining records of personnel changes and appropriate training. The PI is not required to notify the IRB of personnel changes on exempt research. However, he or she may wish to submit personnel changes to the IRB for recordkeeping purposes (e.g. communication with the Graduate School) and may submit such requests by submitting a Modification request. If there is a change in PI, the new PI must confirm acceptance of the PI Assurance form and the previous PI must submit the Supplemental Form to Change the Principal Investigator with the Modification request (available at [hrpp.msu.edu](http://hrpp.msu.edu)).

**Closure:** Investigators are not required to notify the IRB when the research study can be closed. However, the PI can choose to notify the IRB when the study can be closed and is especially recommended when the PI leaves the university. Closure indicates that research activities with human subjects are no longer ongoing, have stopped, and are complete. Human research activities are complete when investigators are no longer obtaining information or biospecimens about a living

person through interaction or intervention with the individual, obtaining identifiable private information or identifiable biospecimens about a living person, and/or using, studying, analyzing, or generating identifiable private information or identifiable biospecimens about a living person.

**For More Information:** See HRPP Manual, including Section 8-1, Exemptions (available at [hrpp.msu.edu](http://hrpp.msu.edu)).

**Contact Information:** If we can be of further assistance or if you have questions, please contact us at 517-355-2180 or via email at [IRB@msu.edu](mailto:IRB@msu.edu). Please visit [hrpp.msu.edu](http://hrpp.msu.edu) to access the HRPP Manual, templates, etc.

**Exemption Category.** The full regulatory text from 45 CFR 46.104(d) for the exempt research categories is included below. <sup>1234</sup>

**Exempt 1.** Research, conducted in established or commonly accepted educational settings, that specifically involves normal educational practices that are not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special education instructional strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

**Exempt 2.** Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:

- (i) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects;
- (ii) Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation; or
- (iii) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by 45 CFR 46.111(a)(7).

**Exempt 3.** (i) Research involving benign behavioral interventions in conjunction with the collection of information from an adult subject through verbal or written responses (including data entry) or audiovisual recording if the subject prospectively agrees to the intervention and information collection and at least one of the following criteria is met:

(A) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects;

(B) Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation; or

(C) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by 45 CFR 46.111(a)(7).

(ii) For the purpose of this provision, benign behavioral interventions are brief in duration, harmless, painless, not physically invasive, not likely to have a significant adverse lasting impact on the subjects, and the investigator has no reason to think the subjects will find the interventions offensive or embarrassing. Provided all such criteria are met, examples of such benign behavioral interventions would include having the subjects play an online game, having them solve puzzles under various noise conditions, or having them decide how to allocate a nominal amount of received cash between themselves and someone else.

(iii) If the research involves deceiving the subjects regarding the nature or purposes of the research, this exemption is not applicable unless the subject authorizes the deception through a prospective agreement to participate in research in circumstances in which the subject is informed that he or she will be unaware of or misled regarding the nature or purposes of the research.

**Exempt 4.** Secondary research for which consent is not required: Secondary research uses of identifiable private information or identifiable biospecimens, if at least one of the following criteria is met:

(i) The identifiable private information or identifiable biospecimens are publicly available;

(ii) Information, which may include information about biospecimens, is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained directly or through identifiers linked to the subjects, the investigator does not contact the subjects, and the investigator will not re-identify subjects;

(iii) The research involves only information collection and analysis involving the investigator's use of identifiable health information when that use is regulated under 45 CFR parts 160 and 164, subparts A and E, for the purposes of "health care operations" or "research" as those terms are

defined at 45 CFR 164.501 or for "public health activities and purposes" as described under 45 CFR 164.512(b); or

(iv) The research is conducted by, or on behalf of, a Federal department or agency using government-generated or government-collected information obtained for nonresearch activities, if the research generates identifiable private information that is or will be maintained on information technology that is subject to and in compliance with section 208(b) of the E-Government Act of 2002, 44 U.S.C. 3501 note, if all of the identifiable private information collected, used, or generated as part of the activity will be maintained in systems of records subject to the Privacy Act of 1974, 5 U.S.C. 552a, and, if applicable, the information used in the research was collected subject to the Paperwork Reduction Act of 1995, 44 U.S.C. 3501 et seq.

**Exempt 5.** Research and demonstration projects that are conducted or supported by a Federal department or agency, or otherwise subject to the approval of department or agency heads (or the approval of the heads of bureaus or other subordinate agencies that have been delegated authority to conduct the research and demonstration projects), and that are designed to study, evaluate, improve, or otherwise examine public benefit or service programs, including procedures for obtaining benefits or services under those programs, possible changes in or alternatives to those programs or procedures, or possible changes in methods or levels of payment for benefits or services under those programs. Such projects include, but are not limited to, internal studies by Federal employees, and studies under contracts or consulting arrangements, cooperative agreements, or grants. Exempt projects also include waivers of otherwise mandatory requirements using authorities such as sections 1115 and 1115A of the Social Security Act, as amended. (i) Each Federal department or agency conducting or supporting the research and demonstration projects must establish, on a publicly accessible Federal Web site or in such other manner as the department or agency head may determine, a list of the research and demonstration projects that the Federal department or agency conducts or supports under this provision. The research or demonstration project must be published on this list prior to commencing the research involving human subjects.

**Exempt 6.** Taste and food quality evaluation and consumer acceptance studies: (i) If wholesome foods without additives are consumed, or (ii) If a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.

**Exempt 7.** Storage or maintenance for secondary research for which broad consent is required: Storage or maintenance of identifiable private information or identifiable biospecimens for potential secondary research use if an IRB conducts a limited IRB review and makes the determinations required by 45 CFR 46.111(a)(8).

**Exempt 8.** Secondary research for which broad consent is required: Research involving the use of identifiable private information or identifiable biospecimens for secondary research use, if the following criteria are met:

- (i) Broad consent for the storage, maintenance, and secondary research use of the identifiable private information or identifiable biospecimens was obtained in accordance with 45 CFR 46.116(a)(1) through (4), (a)(6), and (d);
- (ii) Documentation of informed consent or waiver of documentation of consent was obtained in accordance with 45 CFR 46.117;
- (iii) An IRB conducts a limited IRB review and makes the determination required by 45 CFR 46.111(a)(7) and makes the determination that the research to be conducted is within the scope of the broad consent referenced in paragraph (d)(8)(i) of this section; and
- (iv) The investigator does not include returning individual research results to subjects as part of the study plan. This provision does not prevent an investigator from abiding by any legal requirements to return individual research results.

<sup>1</sup>Exempt categories (1), (2), (3), (4), (5), (7), and (8) cannot be applied to activities that are FDA-regulated.

<sup>2</sup> Each of the exemptions at this section may be applied to research subject to subpart B (Additional Protections for Pregnant Women, Human Fetuses and Neonates Involved in Research) if the conditions of the exemption are met.

<sup>3</sup> The exemptions at this section do not apply to research subject to subpart C (Additional Protections for Research Involving Prisoners), except for research aimed at involving a broader subject population that only incidentally includes prisoners.

<sup>4</sup> Exemptions (1), (4), (5), (6), (7), and (8) of this section may be applied to research subject to subpart D (Additional Protections for Children Involved as Subjects in Research) if the conditions of the exemption are met. Exempt (2)(i) and (ii) only may apply to research subject to subpart D involving educational tests or the observation of public behavior when the investigator(s) do not participate in the activities being observed. Exempt (2)(iii) may not be applied to research subject to subpart D.



## **APPENDIX D**

### Study Two – Questionnaire Packet

# Sport Motivation and Collegiate Athletes

---

Start of Block: Default Question Block

## Information and Consent Form

*Sport Motivation and Collegiate Athletes*

**Primary Researcher:** Olufemi Oluyedun, M.S., Doctoral Candidate, Department of Kinesiology, Michigan State University, IM Sports Circle, 308 W. Circle Dr., East Lansing, MI 48824, oluyedun@msu.edu or 517-353-6497.

**Supervisor:** Alan L. Smith, Ph.D., Professor and Chairperson, Department of Kinesiology, Michigan State University, IM Sports Circle, 308 W. Circle Dr., East Lansing, MI 48824, alsmith@msu.edu or 517-355-4731.

You are invited to participate in a research study. We are studying sport experiences of collegiate athletes. We are required to provide a consent form to inform you about the research study, to convey that participation is voluntary, and to explain risks and benefits of participation.

**Purpose of the Research:** We want to better understand your reasons for participating in sport. You have been selected as a possible participant in this study because you are currently participating in collegiate athletics.

**What You Would Do:** If you are interested in participating, you will complete our survey. The survey asks questions about your current sport experience and will take about 10-15 minutes to complete.

**Potential Benefits:** Your participation in this study may help contribute to our understanding of sport experiences. You will not directly benefit from your participation in this study.

**Potential Risks:** The potential risks of participating in this study are minimal. You may be uncomfortable answering some questions. It is ok not to answer them, and you can stop participating at any time without penalty. A common risk of research is losing privacy. We have procedures in place (see below) to limit this risk.

**Privacy and Confidentiality:** You will complete this survey electronically and will not include your name. Your responses will be kept confidential and will be stored on password-protected computers, accessible only to the research team. All records will be kept at least three years after closing the study.

Research participant confidentiality will be protected to the maximum extent of the law. However, when required by law, government representatives and the Michigan State

University's Human Research Protection Program (HRPP) may need to look at and/or copy your information. Finally, the results of our survey may be published in a manuscript or presented at professional meeting, but the identities of research participants will not be disclosed.

**Your Right to Participate, Say No, or Withdraw:** Participation is voluntary. You have the right to say no. There is no penalty to you if you decide not to participate, or if you start the survey but then decide to stop before finishing it.

**Compensation and Costs for Being in the Study:** There are no costs involved in the study. You will not receive compensation for your participation.

**Contact Information:** If you have concerns or questions about this study, such as scientific issues, how to do any part of it, or to report an injury (i.e., physical, psychological, social, financial, or otherwise) please contact the primary researcher: Olufemi Oluyedun, Department of Kinesiology, Michigan State University, IM Sports Circle, 308 W. Circle Drive, East Lansing, MI 48824. Mr. Oluyedun can be reached at oluyedun@msu.edu or 317-332-9962. The supervising faculty member, Dr. Smith, can be reached at alsmith@msu.edu or 517-355-4731.

If you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Program at 517-355-2180, Fax 517-432-4503, e-mail irb@msu.edu, or regular mail at 4000 Collins Rd., Suite 136, Lansing, MI 48910.

**Thank you for your consideration. If you wish to participate in this study, please select the next button to begin answering the survey questions. Proceeding with the survey constitutes your consent to participate in this research.**

**Remember - please do NOT include your name anywhere on the survey. When you have completed the survey please check to be sure that you answered each item (except any that you choose not to answer) and select the next button to submit. Thank you again for your consideration.**

End of Block: Default Question Block

---

Start of Block: Block 11

Please write which sport you currently participate in and will be using as reference for answering questions in this study:

---

On the next page you will be asked to respond to questions based on your relationship with your best or closest friend on your current team. Please write the first initial of your best or closest friend on your team here:

---

End of Block: Block 11

---

Start of Block: Block 1

**INSTRUCTIONS:** Please read each statement carefully and decide how true the statement is when thinking about your best or closest friend on your current team. When you respond to the statement, indicate how true each statement is when thinking about your friend. There are no right or wrong answers, so please answer each question as honestly as you can.

*Respond with reference to your best friend in your current sport.*

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>My friend gives me a second chance to perform a skill.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Respond with reference to your best friend in your current sport.*

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>My friend and I can talk about anything.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Respond with reference to your best friend in your current sport.

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>My friend and I have common interests.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Respond with reference to your best friend in your current sport.

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>My friend and I do fun things.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Respond with reference to your best friend in your current sport.

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>My friend and I make up easily when we have a fight.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Respond with reference to your best friend in your current sport.

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>My friend and I get mad at each other.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Respond with reference to your best friend in your current sport.

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>My friend and I praise each other for doing sports well.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Respond with reference to your best friend in your current sport.

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>My friend and I stick up for each other in sports.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Respond with reference to your best friend in your current sport.

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>My friend and I do similar things.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Respond with reference to your best friend in your current sport.*

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>I like to play with my friend.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

*Respond with reference to your best friend in your current sport.*

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>My friend and I try to work things out when we disagree.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

*Respond with reference to your best friend in your current sport.*

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>My friend and I fight.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

*Respond with reference to your best friend in your current sport.*

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>My friend looks out for me.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Respond with reference to your best friend in your current sport.*

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>After I make mistakes, my friend encourages me.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

*Respond with reference to your best friend in your current sport.*

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>My friend and I have the same values.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

*Respond with reference to your best friend in your current sport.*

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>When we have an argument, my friend and I talk about how to reach a solution.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Respond with reference to your best friend in your current sport.

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>My friend and I play well together.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Respond with reference to your best friend in your current sport.

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>My friend and I have arguments.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Respond with reference to your best friend in your current sport.

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>My friend and I think the same way.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Respond with reference to your best friend in your current sport.

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>My friend and I tell each other secrets.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Respond with reference to your best friend in your current sport.

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>My friend and I spend time together.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Respond with reference to your best friend in your current sport.

	Not at all True	A Little True	Somewhat True	Mostly True	Really True
<b>My friend has confidence in me during sports.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Block 1

Start of Block: Block 2

**INSTRUCTIONS:** Based on the sport that you are currently playing, please rate how much you agree/disagree to each statement by indicating how true each statement is when thinking about your current sport. There are no right or wrong answers. We only want your honest opinion about the following statements.

Respond with reference to your current sport.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
<b>Staying in sport is more of a necessity than a desire.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Respond with reference to your current sport.*

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
<b>I am dedicated to keep playing this sport.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Respond with reference to your current sport.*

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
<b>I feel trapped in this sport.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Respond with reference to your current sport.*

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
<b>I am willing to overcome any obstacle to keep playing this sport.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Respond with reference to your current sport.*

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
<b>Although I think about quitting this sport, I feel I must keep playing.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

*Respond with reference to your current sport.*

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
<b>I feel I am forced to keep playing this sport.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

*Respond with reference to your current sport.*

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
<b>I feel I have to keep playing this sport, even though I don't want to.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Respond with reference to your current sport.*

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
<b>I am determined to keep playing this sport.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

*Respond with reference to your current sport.*

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
<b>I am very attached to this sport.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

*Respond with reference to your current sport.*

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
<b>I will continue to play this sport for as long as I can.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Respond with reference to your current sport.


	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
<b>I am willing to do almost anything to keep playing this sport.</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Block 2

Start of Block: Block 3

**INSTRUCTIONS:** We are interested in the impressions you would like people to form of you in your current sport, and we would appreciate it if you would answer some questions about this. Please be honest with yourself when responding to the questions, and the best way to do that is to respond quickly without over-thinking the answer. For each of the following items, please select a point on the scale (by clicking on scale or sliding the dot) to indicate your feeling for what the item states. And remember, respond with reference to your current sport.

Select any point on the scale (by clicking on scale or sliding the dot).

	0	100
<b>I am motivated to create a good impression because then other people's impressions of me will match how I'd like to be thought of</b>		

Select any point on the scale (by clicking on scale or sliding the dot).

	0	100
<b>I am motivated to create a good impression because I wish to be respected by my team-mates</b>		

Select any point on the scale (by clicking on scale or sliding the dot).

0 100

**I am motivated to create a good impression because the positive feedback I'll get makes me feel good**



Select any point on the scale (by clicking on scale or sliding the dot).

0 100

**I am motivated to create an impression of an athlete who has a good attitude**



Select any point on the scale (by clicking on scale or sliding the dot).

0 100

**I am motivated to create an impression of an athlete who is professional in their conduct**



Select any point on the scale (by clicking on scale or sliding the dot).

0 100

**I am motivated to create an impression of an athlete who is fair and a "good sport"**



Select any point on the scale (by clicking on scale or sliding the dot).

0 100

**I am motivated to create an impression of an athlete who is professional in their play**



Select any point on the scale (by clicking on scale or sliding the dot).

0 100

**I am motivated to create a good impression on my coach, so that he/she doesn't demote me to a lower team**



Select any point on the scale (by clicking on scale or sliding the dot).

0 100

**I am motivated to create a good impression to avoid embarrassment**



Select any point on the scale (by clicking on scale or sliding the dot).

0 100

**I am motivated to create a good impression when I am competing for selection**



Select any point on the scale (by clicking on scale or sliding the dot).

0 100

**I am motivated to create a good impression on my coach, so that he/she doesn't sub me out of the game in crucial situations**





Select any point on the scale (by clicking on scale or sliding the dot).

0 100

**I am motivated to avoid being criticized by coach as this will create a bad impression in the eyes of my team-mates**



Select any point on the scale (by clicking on scale or sliding the dot).

0 100

**I am motivated to appear to be able to deal with pressure**



Select any point on the scale (by clicking on scale or sliding the dot).

0 100

**I am motivated to perform to the best of my ability, because I don't want to be ridiculed at the next practice**



Select any point on the scale (by clicking on scale or sliding the dot).

0 100

**I am motivated to give reasonable excuses for poor performance, so that my team-mates don't view me negatively**



**INSTRUCTIONS:** For the following questions, please complete both parts. First, read both statements in PART 1 and select which statement is more like you. Then move on to PART 2 and select whether the statement from PART 1 is “sort of true” for you or “really true” for you. Please make sure to have an answer for PART 1 and an answer for PART 2. And remember, respond with reference to your current sport.

End of Block: Block 10

---

Start of Block: Block 12

**PART 1**

	Some young adults are not satisfied with their social skills	Other young adults think their social skills are just fine
Read both statements and decide which one is more like you	<input type="radio"/>	<input type="radio"/>

**PART 2**

	Sort of True for Me	Really True for Me
Based on the statement you chose above, select whether it is "Sort of True" for you or "Really True" for you	<input type="radio"/>	<input type="radio"/>

End of Block: Block 12

---

Start of Block: Block 11

**PART 1**

	Some young adults find it hard to make new friends	Other young adults are able to make new friends easily
Read both statements and select which statement is more like you	<input type="radio"/>	<input type="radio"/>

**PART 2**

	Sort of True for Me	Really True for Me
Based on the statement you selected above, select whether it is "Sort of True" for you or "Really True" for you	<input type="radio"/>	<input type="radio"/>

End of Block: Block 11

Start of Block: Block 10

**PART 1**

	Some young adults like the way they interact with other people	Other young adults wish their interactions with other people were different
Read both statements and select which statement is more like you	<input type="radio"/>	<input type="radio"/>

**PART 2**

	Sort of True for Me	Really True for Me
Based on the statement you selected above, select whether it is "Sort of True" for you or "Really True" for you	<input type="radio"/>	<input type="radio"/>

**PART 1**

	Some young adults feel that they are socially accepted by many people	Other young adults wish more people accepted them
Read both statements and select which statement is more like you	<input type="radio"/>	<input type="radio"/>

**PART 2**

	Sort of True for Me	Really True for Me
Based on the statement you selected above, select whether it is "Sort of True" for you or "Really True" for you	<input type="radio"/>	<input type="radio"/>

End of Block: Block 10

Start of Block: Block 6

What is your age?

---

What is your sex?

- Male
- Female

What is your ethnicity?

- Hispanic or Latino
- NOT Hispanic or Latino

---

What is your race?

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White or Caucasian
- More than one race
- Other
- Prefer not to say

---

How many years have you participated in your sport?

---

---

How many years have you been a member of your current team?

---

---

Approximately how many hours a week do you spend playing your sport?

---

## REFERENCES

## REFERENCES

- Aiken, L. S., & West, S. G. (1991). *Multiple Regression: Testing and interpreting interactions*. Newbury Park, CA: Sage Publications.
- Allender, S., Cowburn, G., & Foster, C. (2006). Understanding participation in sport and physical activity among children and adults: A review of qualitative studies. *Health Education Research, 21*, 826-835.
- Anderssen, N., & Wold, B. (1992). Parental and peer influences on leisure-time physical activity in young adolescents. *Research Quarterly for Exercise and Sport, 63*, 341-348.
- Bagwell, C. L., & Bukowski, W. M. (2018). Friendship in childhood and adolescence: Features, effects, and processes. In W. M. Bukowski, B. Laursen, K. H. Rubin (Eds.), *Handbook of peer interactions, relationships, and groups* (pp. 371-391). The Guilford Press.
- Becker, H. S. (1960). Notes on the concept of commitment. *American Journal of Sociology, 66*, 32-40.
- Berdnt, T. J., Hawkins, J. A., & Jiao, Z. (1999). Influences of friends and friendships on adjustment to junior high school. *Merrill-Palmer Quarterly, 45*, 13-41.
- Brickman, P. (1987). *Commitment, conflict, and caring*. Englewood Cliffs, NJ: Prentice Hall.
- Brunet, J., & Sabiston, C. M. (2009). Social physique anxiety and physical activity: A self-determination theory perspective. *Psychology of Sport and Exercise, 10*, 329-335.
- Brunet, J., & Sabiston, C. M. (2011). Self-presentation and physical activity in breast cancer survivors: The moderating effect of social cognitive constructs. *Journal of Sport and Exercise Psychology, 33*, 759-778.
- Brustad, R. J., Babkes, M. L., & Smtih, A. L. (2001). Youth in sport: Psychological considerations. In R. N. Singer, H. A. Hausenblas, & C. M. Janelle (Eds.), *Handbook of sport psychology* (2<sup>nd</sup> ed.), (p.604-635). New York: John Wiley & Sons.
- Bugental, D. B., & Grusec, J. E. (2006). Socialization processes. In N. Eisenberg (Ed.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (6th ed., pp. 366-428) Hoboken, NJ: Wiley.
- Bukowski, W. M., Hoza, B., & Boivin, M. (1993). Popularity, friendship, and emotional adjustment during early adolescence. In B. Laursen (Ed.), *Close friendships in adolescence* (pp. 23-37). San Francisco: Jossey-Bass.
- Bukowski, W. M., Laursen, B., & Rubin, K H. (2018). *Handbook of Peer Interactions, Relationships, and Groups* (2nd ed.). New York, NY: The Guilford Press.

- Carpenter, P. J., Scanlan, T. K. (1998). Changes over time in the determinants of sport commitment. *Pediatric Exercise Science, 10*, 356-365.
- Carpenter, P. J., Scanlan, T. K., Simons, J. P., & Lobel, M. (1993). A test of the sport commitment model using structural equation modeling. *Journal of Sport and Exercise Psychology, 15*, 119-133.
- Casper, J. M., & Andrew, D. P. S. (2008). Sport commitment differences among tennis players on the basis of participation and outlet and skill level. *Journal of Sport Behavior, 31*, 201-219.
- Chase, M. A., & Dummer, G. M. (1992). The role of sports as a social status determinant for children. *Research Quarterly for Exercise and Sport, 63*, 418-424.
- Duda, J. L. (1987). Toward a developmental theory of children's motivation in sport. *Journal of Sport Psychology, 9*, 130-145.
- Duncan, S. E. (1993). The role of cognitive appraisal and friendship provisions in adolescents' affect and motivation toward activity in physical education. *Research Quarterly for Exercise and Sport, 64*, 314-323.
- Ewing, M. E., & Seefeldt, V. (1996). Patterns of participation and attrition in America agency sponsored youth sports. In F. L. Smoll & R. E. Smith (Eds.), *Children and youth in sport: A biopsychosocial perspective* (pp. 31-45). Madison, WI: Brown & Benchmark.
- Fitzgerald, A., Fitzgerald, N., & Aherne, C. (2012). Do peers matter? A review of peer and/or friends' influence on physical activity among American adolescents. *Journal of Adolescence, 35*, 941-958.
- Fraser, J. L., Cote, J., & Deakin, J. (2005). Youth sport programs: an avenue to foster positive youth development. *Physical Education and Sport Psychology, 10*, 19-40.
- Gammage, K. L., Martin Ginis, K. A., & Hall, C. R. (2004). Self-presentational efficacy: Its influence on social anxiety in an exercise context. *Journal of Sport and Exercise Psychology, 26*, 179-190.
- Gould, D. (1996). Sport Psychology: Future directions in youth sport research. In F. L. Smoll, & R. E. Smith (Eds.), *Children and youth in sport: A biopsychosocial perspective* (pp.405-422). Madison, WI: Brown & Benchmark.
- Harter, S. (1988). *The self-perception profile for adolescents*. Unpublished manual, University of Denver, Denver, CO.
- Harter, S. (1999). *The construction of the self: A developmental perspective*. New York: Guilford.



- Hartup, W. W. (1995). The three faces of friendship. *Journal of Personal and Social Relationships, 12*, 569-574.
- Hartup, W. W. (1996). The company they keep: Friendships and their developmental significance. *Child Development, 67*, 1-13.
- Hektner, J. M., Schmidt, J. A., & Csikszentmihalyi, M. (2007). *Experience sampling method: Measuring the quality of everyday life*. Thousand Oaks, CA US: Sage Publications.
- Horn, T. S. (2004). Developmental perspectives on self-perceptions in children and adolescent. In M.R. Weiss (Ed.), *Developmental sport and exercise psychology: A lifespan perspective* (pp. 101-143). Morgantown, WV: Fitness Information Technology.
- Horn, T. S., & Amorose, A. J. (1998). Sources of competence information. In J. L. Duda (Ed.), *Advances in sport and exercise psychology measurement* (pp. 49-63). Morgantown, WV: Fitness Information Technology.
- Horn, T. S., Glenn, S. D., & Wentzell, A. B. (1993). Sources of information underlying personal ability judgments in high school athletes. *Pediatric Exercise Science, 5*, 263-274.
- Horn, T. S., & Hasbrook, C. A. (1987). Psychological characteristics and the criteria children use for self-evaluation. *Journal of Sport Psychology, 9*, 208-221.
- Horn, T. S., & Weiss, M. R. (1991). A developmental analysis of children's self-ability judgments in the physical domain. *Pediatric Exercise Science, 3*, 310-326.
- Howle, T. C., Jackson, B., Conroy, D. E., & Dimmock, J. A. (2015). Winning friends and influencing people: self presentation motives in physical activity settings. *International Review of Sport and Exercise Psychology, 1*, 44-70.
- Kelley, H. H. (1983). Love and commitment. In H. H. Kelley, E. Berscheid, A. Christensen, J. H. Harvey, T. L. Huston, G. Levinger, E. McClintock, L. A. Peplau, and D. R. Petersen (Eds.), *Close relationships* (pp. 265-314). New York: W. H. Freeman.
- Kline, T. J. B. (2005). *Psychological testing: A practical approach to design and evaluation*. Thousand Oaks, CA: Sage Publications, Inc.
- Klint, K. A., & Weiss, M. R. (1987). Perceived competence and motives for participating in youth sports: A test of Harter's competence motivation theory. *Journal of Sport Psychology, 9*, 55-65.
- Laad, G. W. (1999). Peer relationships in social competence during early and middle childhood. *Annual Review of Psychology, 50*, 333-359.

- Ladd, G. W., Kochenderfer, B. J., & Coleman, C. C. (1996). Friendship quality as a predictor of young children's early school adjustment. *Child Development, 67*, 1103-1118.
- Lamont-Mills, A., & Christensen, S. A. (2006). Athletic identity and its relationship to sport participation levels. *Journal of Science and Medicine in Sport, 9*, 472-478.
- Latimer, A. E., & Martin Ginis, K. A. (2005). The importance of subjective norms for people who care what others think of them. *Psychology and Health, 20*, 53-62.
- Laursen, B., & Bukowski, W. M. (1997). A developmental guide to the organisation of close relationships. *International Journal of Behavioral Development, 21*, 747-770.
- Laursen, B., & Hartup, W. W. (2002). The origins of reciprocity and social exchange in friendships. *New Directions for Child and Adolescent Development, 95*, 27-40.
- Leary, M. R. (1992). Self-presentational processes in exercise and sport. *Journal of Sport & Exercise Psychology, 14*, 339-351.
- Leary, M. R., & Kowalski, R. M. (1990). Impression management: A literature review and two component model. *Psychological Bulletin, 107*, 34-47.
- Leary, M. R., Tchividjian, L. R., & Kraxberger, B. E. (1999). Self-presentation can be hazardous to your health: Impression management and health risk. In R. F. Baumeister (Ed.), *The self in social psychology* (pp. 182-194). Philadelphia, PA: Psychology Press.
- Martin Ginis, K. A., & Mack, D. (2012). Understanding exercise behavior: A self-presentational perspective. In G. Roberts, and G. Treasure (Eds.), *Advances in motivation in sport and exercise* (pp. 327-356). Champaign, IL: Human Kinetics.
- Maturo, C. C., & Cunningham, S. A. (2013). Influence of friends on children's physical activity: A review. *American Journal of Public Health, 103*, 23-38.
- McDonough, M. H., & Crocker, R. E. (2005). Sport participation motivation in young adolescent girls: The role of friendship quality and self-concept. *Research Quarterly for Exercise and Sport, 76*, 456-467.
- Newcomb, A. F., & Bagwell, C. L. (1995). Children's friendship relations: A meta-analytic review. *Psychological Bulletin, 117*, 306-347.
- Ommundsen, Y., Roberts, G. C., Lemyre, P., & Miller, B. W. (2005). Peer relationships in adolescent competitive soccer: Associations to perceived motivational climate, achievement goals and perfectionism. *Journal of Sports Sciences, 23*, 977-989.
- Parker, J. G., & Gottman, J. M. (1989). Social and emotional development in a relational context: Friendship interaction from early childhood and adolescence. In T.J. Berndt &

- G.W. Ladd (Eds.), *Peer relationships in child development* (pp. 95-131). New York: Wiley.
- Patrick, H., Ryan, A. M., Alfeld-Liro, C., Fredricks, J. A., Huda, L. Z., & Eccles, J. S. (1999). Adolescents' commitment to developing talent: The role of peers in continuing motivation for sports and arts. *Journal of Youth and Adolescence*, *28*, 741-763.
- Payne, S. M., Hudson, J., Akehurst, S., Ntoumanis, N. (2013). Development and initial validation of the impression motivation in sport questionnaire-team. *Journal of Sport and Exercise Psychology*, *35*, 281-298.
- Rusbult, C. E. (1980). Satisfaction and commitment in friendships. *Representative Research and in Social Psychology*, *11*, 96-105.
- Rusbult, C. E., & Farrell, D. (1983). A longitudinal test of the investment model: The impact on job satisfaction, job commitment, and turnover of variations in rewards, costs, alternatives, and investments. *Journal of Applied Psychology*, *68*, 429-438.
- Sallis, J. F., & Owen, N. (1999). *Physical activity and behavioral medicine*. Thousand Oaks, CA.: Sage.
- Sallis, J. F., Prochaska, J. J., & Taylor, W. C. (2000). A review of correlates of physical activity of children and adolescents. *Medicine and Science in Sports and Exercise*, *32*, 963-975.
- Scanlan, T. K., Carpenter, P. J., Schmidt, G. W., Simons, J. P., & Keeler, B. (1993). An introduction to the sport commitment model. *Journal of Sport and Exercise Psychology*, *15*, 1-15.
- Scanlan, T. K., Chow, G. M., Sousa, C., Scanlan, L. A., & Knifsend, C. A. (2016). The development of the sport commitment questionnaire-2. *Psychology of Sport and Exercise*, *22*, 233-246.
- Scanlan, T. K., Russell, D. G., Beals, K. P., Scanlan, & L. A. (2003). Project on elite athlete commitment (PEAK): II. A direct test and expansion of the sport commitment model with elite amateur sportsmen. *Journal of Sport and Exercise Psychology*, *25*, 377-401.
- Scanlan, T. K., Russell, D. G., Scanlan L. A., Klunchoo, T. J., & Chow, G. M. (2013). Project on elite athlete commitment (PEAK): IV. Identification of new candidate commitment sources for the sport commitment model. *Journal of Sport and Exercise Psychology*, *35*, 525-535.
- Scanlan, T. K., Russell, D. G., Magyar, T. M., & Scanlan, L. A. (2009). Project on elite athlete commitment (PEAK): III. An examination of the external validity across gender, and the expansion and clarification of the sport commitment model. *Journal of Sport and Exercise Psychology*, *31*, 685-705.

- Scanlan, T. K., Russell, D. G., Wilson, N. C., & Scanlan, L. A. (2003). Project on elite athlete commitment (PEAK): I. Introduction and methodology. *Journal of Sport and Exercise Psychology, 25*, 360-376.
- Scanlan, T. K., Simmons, J. P. (1992). The construct of sport enjoyment. In G. C. Roberts (Ed.), *Motivation in sport and exercise* (pp. 199-215). Champaign IL: Human Kinetics.
- Schlenker, B. R. (1980). *Impression management: The self-concept, social identity, and interpersonal relations*. Monterey, CA. Brooks/Cole.
- Schmidt, G. W., & Stein, G. L. (1991). Sport commitment: A model integrating enjoyment, dropout, and burnout. *Journal of Sport and Exercise Psychology, 8*, 254-265.
- Sousa, C., Terragrosa, M., Viladrich, C., Villamarin, F., Cruz, J. (2007). The commitment of young soccer players. *Psicothema, 19*, 256-262.
- Smith, A. L. (1999). Perceptions of peer relationships and physical activity participation in early adolescence. *Journal of Sport and Exercise Psychology, 21*, 329-350.
- Smith, A. L. (2003). Peer relationships in physical activity contexts: a road less traveled in youth sport and exercise psychology research. *Psychology of Sport and Exercise, 4*, 25-39.
- Smith, A. L. (2019). A case for peer-focused efforts to understand and promote physical activity in young people. *Kinesiology Review, 8*, 32-39.
- Smith, A. L., Dorsch, T. E., & Monsma, E. V. (2012). Developmentally informed measurement in sport and exercise psychology research. In G. Tenenbaum, R. C. Eklund, & A. Kamata (Eds.), *Measurement in sport and exercise psychology* (pp. 131-141). Champaign, IL: Human Kinetics.
- Smith, A. L., & McDonough, M. H. (2008). Peers. In A. L. Smith, & S. J. Biddle (Eds.), *Youth Physical Activity and Sedentary Behavior: Challenges and Solutions* (pp. 295-320). Human Kinetics.
- Smith, A. L., Mellano, K. T., & Ullrich-French, S. (2019). Peers and psychological experiences in physical activity settings. In T.S. Horn & A. L. Smith (Eds.), *Advances in sport and exercise psychology* (4<sup>th</sup> ed., pp. 133-150). Champaign, IL: Human Kinetics.
- Smith, A. L., Ullrich-French, S., Walker, E., & Hurley K. S. (2006). Peer relationship profiles and motivation in youth sport. *Journal of Sport and Exercise Psychology, 28*, 362-382.
- Smith, A. L. (2007). Youth peer relationships in sport. In S. Jowett, & D. Lavallee (Eds.), *Social psychology in sport* (10<sup>th</sup> ed. pp. 41-55). Champaign, IL: Human Kinetics.
- Sullivan, H. S. (1953). *The interpersonal theory of psychiatry*. New York: Norton.

- Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (5<sup>th</sup> ed.). Needham Heights, MA: Allyn & Bacon.
- Tetlock, P. E., & Manstead, A. S. (1985). Impression management verses intrapsychic explanations in social psychology: A useful dichotomy. *Psychological review*, *92*, 59-77.
- Thibaut, J. W., & Kelley, H. H. (1959). *The social psychology of groups*. New York: Wiley.
- Ullrich-French, S., & Smith, A. L. (2006). Perceptions of relationships with parents and peers in youth sport: Independent and combined prediction of motivational outcomes. *Psychology of Sport and Exercise*, *7*, 193-214.
- Ullrich-French, S. & Smith, A. L. (2009). Social and motivational predictors of continued youth sport participation. *Psychology of Sport and Exercise*, *10*, 87-95.
- Van Der Horst, K., Chin A. Paw, M. J., Twisk, J. W., & Van Mechelen, W. (2007). A brief review on correlates of physical activity and sedentariness in youth. *Medicine and Science in Sports and Exercise*, *34*, 1241-1250.
- Vilhjalmsson, R., & Kristjansdottir, G. (2003). Gender differences in physical activity in older children and adolescents: The central role of organized sport. *Social Science and Medicine*, *56*, 363-374.
- Weiss, M. R., & Amorose, A. J. (2008). Motivational orientations and sport behavior. In T. S. Horn (Ed.) *Advances in sport psychology* (3<sup>rd</sup> ed. pp. 115-155). Champaign, IL: Human Kinetics.
- Weiss, M. R., & Aloe, A. M. (2019). Revisiting meditational models of sport commitment with female gymnasts. *International Journal of Sport and Exercise Psychology*, *17*, 600-616.
- Weiss, M. R., & Bredemeier, B. J. (1983). Developmental sport psychology: A theoretical perspective for studying children in sport. *Journal of Sport Psychology*, *5*, 216-230.
- Weiss, M. R., & Duncan, S. C. (1992). The relationship between physical competence and peer acceptance in the context of children's sports participation. *Journal of Sport and Exercise Psychology*, *14*, 177-191.
- Weiss, M. R., & Ferrer-Caja, E. (2002). Motivational orientations and sport behavior. In T. S. Horn (Ed.), *Advances in sport psychology* (2<sup>nd</sup> ed. pp. 101-183). Champaign, IL: Human Kinetics.
- Weiss, M. R., Ebbeck, V., & Horn, T. S. (1997). Children's self-perceptions and sources of physical competence information: A cluster analysis. *Journal of Sport and Exercise Psychology*, *19*, 52-70.

- Weiss, M. R., Kimmel, L. A., Smith, A. L. (2001). Determinants of sport commitment among junior tennis players: enjoyment as a mediating variable. *Pediatric Exercise Science, 13*, 131-144.
- Weiss, M. R., & Petlichkoff, L. M. (1989). Children's motivation for participation in and withdrawal from sport: Identifying the missing links. *Pediatric Exercise Science, 1*, 195-211.
- Weiss, M. R., & Raedeke, T. D. (2004). Research status on youth and directions toward a lifespan perspective. In M. R. Weiss (Ed.), *Developmental sport and exercise psychology: A lifespan perspective* (pp. 1-26). Morgantown, WV: Fitness Information Technology.
- Weiss, M. R., & Smith, A. L. (1999). Quality of youth sport friendships: Measurement development and validation. *Journal of Sport and Exercise Psychology, 21*, 145-166.
- Weiss, M. R., & Smith, A., L. (2002). Friendship quality in youth sport: Relationship to age, gender, and motivation variables. *Journal of Sport & Exercise Psychology, 24*, 420-437.
- Weiss, M. R., & Stuntz, C. P. (2004). A little friendly competition: Peer relationships and psychosocial development in youth sport and physical activity contexts. In M.R. Weiss (Ed.), *Developmental sport and exercise psychology: A lifespan perspective* (pp. 165-196). Morgantown, WV: Fitness Information Technology.
- Weiss, M. R., Smith, A. L., & Theeboom, M. (1996). "That's what friends are for": Children's and teenagers perceptions of peer relationships in the sport domain. *Journal of Sport and Exercise Psychology, 18*, 347-379.
- Weiss, W. M. (2015). Competitive level differences on sport commitment among high school and collegiate level athletes. *International Journal of Sport and Exercise Psychology, 13*, 286-303.
- Weiss, W. M., & Weiss, M. R. (2003). Attraction- and entrapment- based commitment among competitive female gymnasts. *Journal of Sport and Exercise Psychology, 25*, 229-247.
- Weiss, W. M., & Weiss, M. R. (2006). A longitudinal analysis of commitment among competitive female gymnasts. *Psychology of Sport and Exercise, 7*, 309-323.
- Weiss, W. M., & Weis, M. R. (2007). Sport commitment among competitive female gymnasts: A developmental perspective. *Research Quarterly for Exercise and Sport, 78*, 90-102.
- Weiss, W. M., Weiss, M. R., & Amorose, A. J. (2010). Sport commitment among competitive female athletes: Test of an expanded model. *Journal of Sports Sciences, 28*, 423-424.

Wilson, P. M., Rodgers, W. M., Carpenter, P. J., Hall, C., Hardy, J., & Fraser, S. N. (2004). The relationship between commitment and exercise behavior. *Psychology of Sport and Exercise, 5*, 405-421.

Young, B. W., & Medic, N. (2011). Examining social influences on the sport commitment of masters swimmers. *Psychology of Sport and Exercise, 12*, 168-175.