

THE COACH-ATHLETE RELATIONSHIP: A CROSSFIT PERSPECTIVE

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## **DEDICATION**

This is dedicated to Sarah. Thank you for your constant moral support during the writing of this paper...and during any WOD that consists of squats, double-unders, running, box-jumps, clean and jerks, snatches, thrusters, sit-ups, pull-ups, wall-balls, wall-walks, etc.

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## **ABSTRACT**

### **THE COACH-ATHLETE RELATIONSHIP: A CROSSFIT PERSPECTIVE**

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The purpose of this study was to examine how CrossFit athletes and coaches perceived the quality of the coach-athlete relationship based on the 3+1Cs model (Jowett, 2007). 110 participants (93 athletes, 17 coaches) reported on their direct and meta-perceptions of relationship quality by taking Jowett and Clark-Carter's (2006) version of the Coach-Athlete Relationship Questionnaire (CART-Q), and direct and meta-perceptions of satisfaction with training/instruction, performance, and personal treatment, by taking a modified version of Reimer and Chelladurai's (1998) Athlete Satisfaction Questionnaire (ASQ). Results showed that athletes and coaches did not differ on their perceptions of relationship quality and the three satisfaction variables. Neither gender nor relationship duration had a significant effect on athletes and coaches' perceptions. Athletes' meta-perceptions of the three Cs significantly predicted their perceptions of all three satisfaction variables. Implications and future research directions are discussed.

*Keywords:* relationship quality, direct and meta-perceptions, relationship duration, gender, satisfaction, CrossFit

## CHAPTER 1: INTRODUCTION

“Relationship” is a term that, because it is so common, we often overlook the complexity of its function and of the people that comprise it. In the book *Close Relationships*, Kelley (1983) attempts to simplistically define a relationship between two people as each person’s “chain of events...that are causally interconnected” (p. 27). The broad nature of this definition is useful because of its ability to apply to other various contexts and areas of study, particularly in sports and the coach-athlete relationship. Gregg Popovich, NBA head coach for the four-time champion San Antonio Spurs, described in an interview his relationship with his star forward Tim Duncan as one of “respect and understanding of each other. Almost like we were soul mates” (Ballard, 2012, p. 40). When interpreting this description, it is evident that Coach Popovich applies Kelley’s definition to his relationship with Duncan in regards to *interconnectedness* (i.e. the mutual respect and understanding). However, other variables (such as situational factors, the personalities of the coach and athlete, the duration of the relationship, etc.) played a major role in the overall success of the team and the success of the relationship between Popovich and Duncan. Furthermore, it is the strong bond between Popovich and Duncan that may contribute to that team’s success over the course of many years; thus, it is useful to study coach-athlete relationships because of its practical implications to sports.

The dynamics between a coach and an athlete have been primarily researched from a leadership perspective (Chelladurai, 1990; Reimer & Chelladurai, 1998), and how those dynamics influence outcome variables such as relationship satisfaction and performance satisfaction (Reimer & Toon, 2001; Philippe & Seiler, 2005). Research on the coach-athlete relationship also looked at athletes' perceptions of the quality of the coach-athlete relationship (Jowett & Ntoumanis, 2004; Jowett, 2009; Olympiou, Jowett, & Duda 2008; Philippe & Seiler, 2005; Yang, 2012), but few studies attempted to examine perceptions of relationship quality from both the athlete and the coach (Jowett, 2006). By evaluating both members' perceptions, it may give researchers better insight into what makes for an effective coach-athlete relationship.

### ***Statement of the Problem***

An effective coach-athlete relationship yields numerous psychosocial (Potrac, Jones, & Armour, 2002) and performance-based benefits (Cote, Salmela, & Russell, 1995). However, poor coaching (or at least athletes' perceptions of poor coaching) may inhibit such desirable results. Gearity (2009) explored athletes' perceptions of poor coaching, and discovered that athletes associated poor coaching with specific coaching behaviors that include not fulfilling the role of teacher, not caring about them, being unfair, and inhibiting their athletic development. The study also found that athletes did not associate poor coaching with winning, and that athletes used coping strategies to help them persist and succeed in sport in spite of poor coaching (2009).

The burden of a strained coach-athlete relationship is not always placed on the coach. Athletes may be held just as accountable since poor communication from both the

coach and the athlete contributes to negative athletic performance during competition (Gould et al., 2000; Gould, Guinan, Greenleaf, Medbery, and Peterson, 1999).

Poor coaching and poor athletic behavior, while not popularly studied and verified, does exist and should be evaluated and remedied. The empirical evidence that does exist explains that performance success is positively influenced by a stable and harmonious relationship (Jowett & Cockerill, 2003).

### *Definitions*

The following terms are used throughout the proposal, and are defined as follows:

**Accuracy.** Accuracy (also referred to as “understanding”) is when a partner’s perception of the other corresponds to the other’s self-perception (Iafate, Bertoni, Margola, Cigoli, & Acitelli, 2012). Using the coach-athlete relationship as an example, if an athlete claims “I trust my coach” and a coach claims “My athlete trusts me,” then members’ perceptions of the athlete’s trust of the coach are accurate.

**Actual similarity.** Actual similarity is the congruence between two partners’ self-perceptions (Iafate, Bertoni, Margola, Cigoli, & Acitelli, 2012). Using the coach-athlete relationship as an example, when an athlete claims “I trust my coach,” and the coach claims, “I trust my athlete,” members’ self-perceptions of trust are deemed actually similar.

**Assumed similarity.** Assumed similarity corresponds to the congruence between self-perceptions and the perceptions of the other (Iafate, Bertoni, Margola, Cigoli, & Acitelli, 2012). Using the coach-athlete relationship as an example, when an athlete

claims “I trust my coach” and “My coach trusts me,” the athlete’s perception of trust is assumed to be similar with the coach’s, based on the athlete’s self-perception.

**Closeness.** This is a construct of the 3+1Cs model that represents relationship members’ affective ties, such as liking (Jowett, 2010).

**Coach-athlete relationship.** Jowett (2010) defines a relationship as members’ feelings, thoughts, and behaviors being interdependent. Thus, when discussing the coach-athlete relationship, the study is implying the coach’s and the athlete’s affect, cognition, and behavior being causally linked.

**Commitment.** Commitment is a construct of the 3+1Cs model that indicates relationship members’ cognitive attachment and intent for long-term orientation (Jowett, 2010).

**Complementarity.** Complementarity is a construct of the 3+1Cs model that refers to members’ ability to invite or elicit cooperation, responsiveness, and affiliation (Jowett, 2010).

**Co-orientation.** Co-orientation is the ability for a coach or an athlete to perceive the relationship from two perceptual perspectives (Jowett, 2006). For example, an athlete can view “trust” from his or her own perspective (I trust my coach) and from their coach’s viewpoint (My coach trusts me). Co-orientation uses the direct perspective and the meta-perspective to capture the interdependence that exists between relationship members.

**Direct perspective.** This perspective refers to how an athlete or a coach perceives his or her own closeness, commitment, and complementarity (Jowett, 2010).

For instance, “I trust my coach” is an indication of the athlete’s direct perspective on the construct of Closeness.

**Meta-perspective.** This describes how one member of the relationship believes the other member perceives that person’s closeness, commitment, and complementarity (Jowett, 2010). For instance, “My coach trusts me” is an indication of the athlete’s meta-perspective on the construct of Closeness.

### ***Theoretical Lens***

Past research on relationships were grounded in psychological theory. Dryer and Horowitz (1997) claimed that relationships contain two fundamental propositions: that 1) interpersonal relationships can be described along two dimensions (affiliation and control), and 2) people influence each other’s behavior in predictable ways as they interact. The latter proposition is referred to as the *principle of complementarity*, which states that each interpersonal behavior invites, but does not necessarily elicit, a particular class of responses (1997). When a relationship member’s behavior invites a response that is congruent with that member’s goals, interpersonal satisfaction may result (1997).

Kelley et al. (1983) focused on a particular class of relationships, defined as “close,” referring to a dyad’s causal interconnections as being strong, frequent, and diverse over a considerable period of time, and having a high potential for emotion and involvement. While the potential for such affect and involvement in a close relationship exists, it may not fully manifest itself throughout the course of the relationship (1983).

Close relationships can lead to other interdependence characteristics that fundamentally change the relationship members. Rusbult’s (1983) investment theory

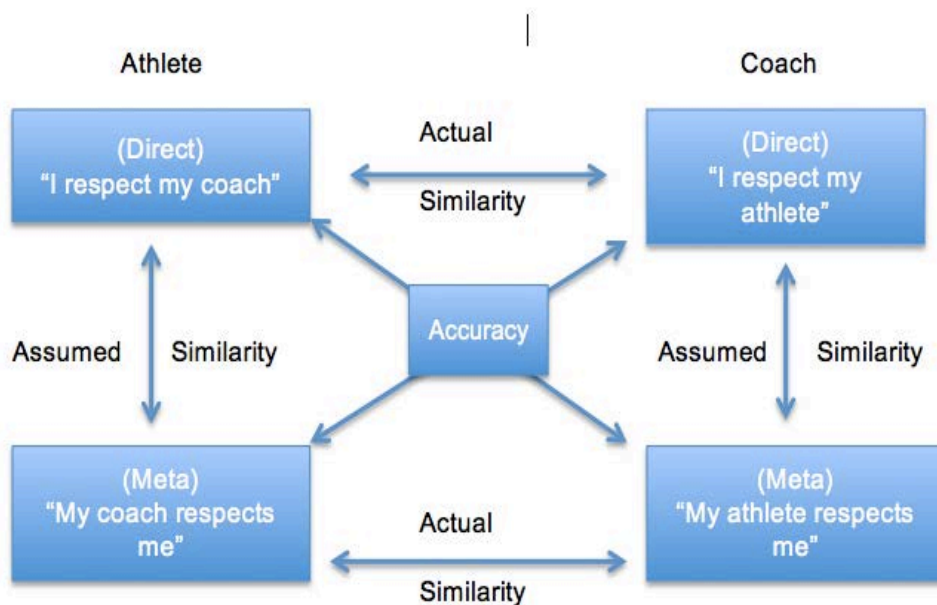
suggests that dependence produces the psychological experience of commitment, which is described in respect to conation (intent to persist), cognition (long-term orientation), and affection (psychological attachment). In a study that investigated romantic relationships, Agnew, Van Lange, Rusbult, & Langston (1998) found that the more romantically committed individuals became, the more likely they were to think of the relationship in a pluralistic, other-inclusive manner, indicated by the use of plural pronouns to describe one's self and one's relationship. Additionally, the more romantically committed individuals became, the more likely they were to think of themselves as blended individuals (indicated by perceived overlap in mental representations of the self and the partner), and the more likely they were to regard their relationships as central to who they are (1998).

Based on these psychological concepts, Jowett (2007) combined the constructs of closeness, commitment, and complementarity (known as the "three Cs"), and applied it to a sports context to form the 3+1Cs model that will provide the theoretical lens for this study. Closeness represents coaches' and athletes' affective ties, such as liking, respecting, trusting, and appreciating each other. Commitment describes a cognitive attachment and a long-term orientation toward one another. Complementarity denotes coaches and athletes' behavioral transactions of cooperation, responsiveness, and affiliation. The suggested interconnectedness of the three constructs implies that, not only is a member's three Cs interrelated (for example, an athlete's closeness is linked to his or her commitment), but that a member's three Cs are interrelated to the other



member's three Cs (an athlete's complementarity is related to the coach's complementarity).

Jowett (2005, 2006, 2007) introduced a fourth construct to the model, delineated as Co-Orientation, in order to capture the interdependence that exists between the coach and athlete. Specifically, Jowett (2006) explains that members are capable of perceiving their relationship from two different perceptual perspectives, both of which describe the quality and function of the coach-athlete relationship. The direct perspective reflects a member's perception of personal feelings, thoughts, and behaviors relative to the other member (i.e. "I trust my coach"). The meta-perspective describes a member's perception of how the other member in the relationship feels, thinks, and behaves toward him or her (e.g., "My coach trusts me"). The different combination of these perspectives can yield three distinct dimensions of co-orientation: (1) the dimension at which relationship members are actually similar in the ways they view their relationship; (2) the dimension that the members assume similarity in terms of how they view their relationship; and (3) the dimension that each member accurately understands the other's view regarding the quality of the relationship. The following is a diagram that visualizes this construct.



**Figure 1 Three Dimensions of Co-Orientation**

Jowett's (2007) 3+1Cs model is relevant to this study because of its application to research in sports. It provides an appropriate lens to understanding the coach-athlete relationship, with theory grounded in psychological research that allows results to apply to other areas of study.

***Purpose of the Study***

The purpose of this study was to investigate athletes and coaches' perceptions of the quality of the coach-athlete relationship in the sport of CrossFit. Specifically, the study intended to uncover how perceptions of the quality of this relationship influences perceptions of various satisfaction variables, as well as how the duration of the relationship and gender played a role in perceptions of the quality of the relationship.

## *Research Questions*

This study is guided by the following research questions:

- Is there a difference in how CrossFit athletes and coaches perceive the quality of their relationship (from both a direct and a meta-perspective)?
- Do coaches' and athletes' meta-perceptions of the quality of the relationship predict perceptions of satisfaction with training/instruction, satisfaction with the athlete's performance, and satisfaction with personal treatment?
- Does the duration of the coach-athlete relationship influence coaches' and athletes' perceptions of the quality of the relationship?
- Is there a difference in how male and female athletes and coaches perceive the quality of their relationship?

Based on these research questions, this study tested the following hypotheses:

1. H<sub>0</sub>: There will not be a difference in how CrossFit athletes and coaches perceive (from both a direct and meta-perspective) the quality of their relationship.  
H<sub>1</sub>: There will be a difference in how CrossFit athletes and coaches perceive (from both a direct and meta-perspective) the quality of their relationship.
2. H<sub>0</sub>: Athletes' and coaches' meta-perceptions of the quality of the relationship will not predict their perceptions of the three satisfaction variables.  
H<sub>2</sub>: Athletes' and coaches' meta-perceptions of the quality of the relationship will predict the three satisfaction variables.

3. H<sub>0</sub>: There will be no significant effect between the duration of the coach-athlete relationship and perceptions of the quality of the relationship.

H<sub>3</sub>: There will be a significant effect between the duration of the coach-athlete relationship and perceptions of the quality of the relationship.

4. H<sub>0</sub>: There will not be a significant difference in how male and female athletes and coaches perceive (from both a direct and a meta-perspective) the quality of their relationship.

H<sub>4</sub>: There will be a significant difference in how male and female athletes and coaches perceive (from both a direct and meta-perspective) the quality of their relationship.

### ***Limitations***

Findings were limited by the study's sample size. While the plan was to conduct research in as many CrossFit gyms as possible, the study was susceptible to dropouts, resulting in issues with generalizability. Furthermore, CrossFit's conceptualization as a sport is relatively new, considering the first CrossFit Games was held in 2007 ("What is CrossFit?"). While this study's sample population may have limited results, the sample size's proportion compared to the total CrossFit population should be considered. It was also understood that the lack of variability from the study's sample population limited findings; however, specific demographic information (such as age, ethnic background, experience in CrossFit, etc.) was not the interest of this study.

### *Delimitations*

Delimitations also existed as a result of the study's interest in the topic of coach-athlete relationships. While the research questions strived to include both the athletes and coaches' direct and meta-perceptions, the only other variables the study was interested in were relationship duration and the outcome variables of satisfaction with the coach's training/instruction, satisfaction with athletic performance, and satisfaction with the coach's personal treatment of the athlete. Focusing on CrossFit athletes and coaches was also a function of interest for this study, and choosing to explore coaches and athletes from other sports would make the data unmanageable and the overall study unfeasible.

## CHAPTER 2: LITERATURE REVIEW

The realization that the coach-athlete relationship is central to effective coaching created a surge in empirical and theoretical research on the coach-athlete dyad (Lyle, 2002). The quality of the coach-athlete relationship is an important aspect of sport performance and still needs sufficient research in all areas of sport, including CrossFit.

### *Purpose of the Literature Review*

The search strategy mainly consisted of reviewing numerous articles via searching the SPORTDiscus and PsycINFO databases (accessed through the George Mason University Library's website), conducting ancestral research from previously reviewed articles, and researching articles from the CrossFit Journal webpage. From evaluating these articles based on their relevance to the topic, 43 were chosen and eight are examined in this literature review. Of these articles, seven used quantitative methods as their form of research and one used qualitative methods. Upon reading these articles, three major themes emerged: Athletes and coaches' direct and meta-perceptions, the role of relationship duration on perceiving the quality of the coach-athlete relationship, and the relationship between coach-athlete interdependence and performance/relationship satisfaction.

### *Athlete and Coach's Direct and Meta-Perceptions*

Much of the research pertaining to examining the athlete's direct perception (Jowett & Ntoumanis, 2004) and the athlete's direct and meta-perceptions (Jowett, 2006) of the quality of the coach-athlete relationship was spent on validating the CART-Q. However, researchers have used other approaches to discover what and how athletes feel about their coaches (and vice versa).

**Athlete's direct perceptions.** Qualitative research provides unique contributions to studying the quality of the coach-athlete relationship, as those studies are capable of uncovering more depth and detail to athlete responses. Philippe & Seiler (2006) used this approach by interviewing five male Swiss national team swimmers, using the constructs of closeness, co-orientation, and complementarity to guide their semi-structured interview questions. Researchers asked 14 questions concerning closeness, and responses yielded two sub-domains of the construct: essential coach-athlete requirements (respect, esteem, admiration, appreciation, and professional relationship) and social relationship (friendship and love). Responses showed that each athlete felt that the establishment of an affective relationship with his coach was important. For instance, one athlete responded "I respect his decisions but I also respect him as a person," which the researchers used as the anchor example for the essential coach-athlete requirement of respect (p. 164). The study addressed co-orientation by asking 18 questions specific to that construct. Results yielded two sub-domains of communication (delineated by technical communication/instruction, social skills, verbal interchange, and problem resolution) and setting objectives and goals (which includes having common goals and

respecting the goal set). One response anchors the social skills (or “savoir-être,” as the researchers referred to) theme in this way: the coach “reassur[es] that I have what it takes to achieve my goals” (p. 165). Researchers asked 15 questions to obtain responses relating to complementarity. Results yielded two sub-domains of acceptance (seeing the positive side and using the differences) and respect of the roles (with themes of assuming responsibilities and respecting the task). One athlete commented on the theme of using the differences by responding, “Everyone is different: you have to know how to make use of these differences” (p. 166). The researchers concluded that swimmer responses indicated the type of relationship formed with their coach played a central role in improving their performance.

**Athlete’s meta-perceptions.** Meta-perceptions are useful for athletes since it supplies them with information concerning the degree to which the coach is perceived to be interconnected with them. Jowett (2010) hypothesized that athletes in a functional coach-athlete relationship will relate positively to adopting mastery-approach goals (MAp, or goals that focus on striving to attain task/self-referenced competence), as defined by their high meta-perceptions of the three Cs. Consequently, athletes in non-optimal functioning relationships – as defined by their low meta-perceptions of the three Cs – were assumed to have a strong relationship with adopting mastery-avoidance goals (MAv, or goals concerning the avoidance of self-/task-referenced incompetence) or performance-avoidance goals (PAv, or goals that avoid normative competence). Researchers examined 194 track-and-field athletes affiliated with various British University Athletic Clubs. They employed an adapted version of the CART-Q (Jowett &



Ntoumanis, 2004) to measure athletes' meta-perceptions of the three Cs, as well as a 12-item Achievement Goal Questionnaire for Sport (AGQ-A; Conroy, Elliot, & Hofer, 2003) to assess the degree to which athletes endorsed the various achievement goals. Results indicated that athletes' meta-perceptions of a high-functioning relationship with their coach are strongly related to MAp goal adoption ( $r = .36, p < .01$ ). Additionally, athletes' meta-perceptions of a low-functioning coach-athlete relationship were associated with PAv goal adoption ( $r = -.24, p < .01$ ). There was not a significant relationship with athletes' meta-perceptions and the adoption of MAv goals ( $r = -.01$ , p-value not reported). These findings indicate that relationally based variables (i.e. coach-athlete relationship) determine the type of achievement goal adoption, specifically to mastery-approach and performance-avoidance goals.

**Coach's direct perceptions.** In the coach-athlete dyad, the coach is usually the member who is best resourced in creating high quality working relationships within which their athletes learn the sport, as well as develop emotionally and psychosocially (Jowett & Cockerill, 2003). A recent study examined the psychometric properties of the quality of the coach-athlete relationship from solely the coach's direct perspective. Specifically, Balduck and Jowett (2010) developed a valid, psychometrically sound questionnaire that accurately assessed Belgian coaches' perceptions of the quality of the coach-athlete relationship. The sample consisted of 144 participants of a variety of team sports (including soccer, volleyball, handball, basketball, korfbal, rugby, ice hockey, and water polo) who coached at the national and provincial levels. Coaches answered questions from Jowett and Ntoumanis' (2004) British CART-Q (which was translated

into Dutch for this study) and Chelladurai & Saleh's (1978) Leadership Scale for Sport. Researchers implemented the latter instrument to measure coaches' perceptions of three leadership behaviors: training and instruction, autocratic behaviors, and positive feedback behaviors. Results indicated that a structural equation modeling the three Cs subsumed under a higher factor is an acceptable model for measuring Belgian coaches' perceptions of the coach-athlete relationship quality. Specifically, the higher-order factor (i.e. relationship quality) accounted for a relatively large percentage of the variance in participants' responses of complementarity (48%), commitment (59%), and closeness (71%). Furthermore, concurrent validity testing revealed that the Belgian CART-Q and the three C's are capable of predicting coach leadership behaviors. Closeness predicted the leadership dimensions of training and instruction ( $\beta = .205, p < .01$ ), autocratic behavior ( $\beta = -.293, p < .01$ ), and positive feedback ( $\beta = .333, p < .01$ ), while commitment predicted the dimension of training and instruction ( $\beta = .225, p < .01$ ). Complementarity was unable to predict any of the leadership behaviors in Belgian coaches. Researchers believed that complementarity concerns the affiliation element (or coaches' interpersonal behaviors that reflect responsiveness, friendliness, and easiness) of the coach-athlete relationship, and thus a lack of association means a coach may be dominant and hostile at times throughout the course of the relationship. Overall, the coach version of the Belgian CART-Q is a valid and reliable instrument in measuring the psychometric properties of the coach's direct perceptions of the quality of the coach-athlete relationship, as well as predicting various leadership behaviors in terms of closeness and commitment.

**Athlete and coach's direct and meta-perceptions.** One study (Jowett & Clark-Carter, 2006) sought to explore both athletes and coaches' direct and meta-perceptions pertaining to the quality of the coach-athlete relationship. Researchers hypothesized that (1) coaches' and athletes' perceptions were expected to contain a mix of empathic accuracy and assumed similarity, and (2) the variation in the relative amounts of empathic accuracy and assumed similarity would be observed based on what is being perceived, with the targets of perceptions being: the three C's, feelings of satisfaction with performance and training/instruction, and feelings of satisfaction with external agents (media, fans, and governing body). 242 Greek Caucasian coaches and athletes (121 dyads) from various individual sports (such as archery, boxing, fencing, judo, rowing, shooting, tennis, tae-kwon-do, track and field, and weightlifting) took a modified version of the Greek Coach-Athlete Relationship Questionnaire (GrCART-Q; Jowett & Ntoumanis, 2003) to answer questions about their self-perceptions and meta-perceptions of the quality of their relationship. Additionally, participants took Reimer and Chelladurai's (1998) Athlete-Satisfaction Questionnaire, which was also modified to include athletes' meta-perceptions of satisfaction. Both questionnaires utilized a 7-point Likert scale for participants to rate their responses. Researchers estimated assumed similarity and accuracy using structural equations modeling, where the values for each of the four accuracy and assumed similarity paths were found. For the first hypothesis, results indicated a presence of both assumed similarity and empathic accuracy in coach-athlete relationships. For instance, in terms of closeness, similarity was present from the athlete's perspective (self closeness  $M = 6.49$ ,  $SD = 0.661$ ; meta-closeness  $M = 6.17$ ,  $SD$

= 0.870) and the coach's perspective (self-closeness  $M = 6.14$ ,  $SD = 0.833$ ; meta-closeness  $M = 6.37$ ,  $SD = 0.770$ ). Athletes and coaches' perceptions also displayed accuracy in regards to closeness: Athlete self-closeness ( $M = 6.49$ ,  $SD = 0.661$ ) and Coach meta-closeness ( $M = 6.37$ ,  $SD = 0.770$ ); coach self-closeness ( $M = 6.14$ ,  $SD = 0.833$ ) and athlete meta-closeness ( $M = 6.37$ ;  $SD = 0.770$ ). In regards to the second hypothesis, empathic accuracy was evident in athletes and coaches' commitment ( $r = .21$ ,  $p < .001$ ), complementarity ( $r = .13$ ,  $p < .01$ ), satisfaction with training and instruction ( $r = .24$ ,  $p < .001$ ), satisfaction with performance ( $r = .17$ ,  $p < .001$ ), and satisfaction with external agents ( $r = .17$ ,  $p < .001$ ). Athletes and coaches also displayed assumed similarity for the three Cs and satisfaction variables: closeness ( $r = .71$ ,  $p < .001$ ), commitment ( $r = .61$ ,  $p < .001$ ), complementarity ( $r = .82$ ,  $p < .001$ ), satisfaction with training and instruction ( $r = .67$ ,  $p < .001$ ), satisfaction with performance ( $r = .69$ ,  $p < .001$ ), and satisfaction with external agents ( $r = .80$ ,  $p < .001$ ). Researchers concluded that the presence of assumed similarity and empathic accuracy in athletes and coaches' responses is indicative of the effectiveness of the quality of the coach-athlete relationship on the athletes' satisfaction of their performance and of the relationship.

### ***Relationship Duration***

Studying the effects of relationship duration is mostly done under the context of romantic and marital relationships. Conceptual and empirical evidence suggest that empathic accuracy is more evident at the early stages of the relationship, but declines as the relationship progresses (Kenny & DePaulo, 1993; Thomas, Fletcher, & Lange, 1997).

Kilpatrick, Bissonnette, and Rusbult (2002) expanded on this topic by examining empathic accuracy and accurate understanding in newly married couples. Specifically, the researchers predicted that (1) empathic accuracy would decline over time in marriage, and (2) the strength of the associations of other variables with empathic accuracy would decline over time in marriage. Researchers tested their hypotheses on 123 married couples from the University of North Carolina Marriage Study, which gathered data from couples on six different occasions over the first three years of their marriage. Videotaping couple interactions, obtaining reports of own and partner thoughts and feelings during interaction, and obtaining ratings of empathic accuracy were the ways researchers measured empathic accuracy. For obtaining ratings, research assistants rated the similarity between what the participant thought and felt, and what the partner actually reported thinking and feeling. Based on multiple research assistants' ratings, an unadjusted empathic accuracy measure ranged from 0-100. For the first hypothesis, results indicated that the main effect of time on empathic accuracy was significant ( $p < .01$ ). Specifically, mean empathic accuracy was greater at Time 2 ( $M = 18.74$ ) than at Time 4 ( $M = 12.71$ ) and Time 6 ( $M = 11.85$ ). Standard deviations for empathic accuracy did not differ significantly as a function of time. Results for the second hypothesis showed a marginally significant main effect of Time 2 ( $M = 40.23$ ), Time 4 ( $M = 36.59$ ), and Time 6 ( $M = 35.02$ ) on unadjusted empathic accuracy ( $p < .10$ ). Differences between levels of baseline empathic accuracy and adjusted empathic accuracy for Time 2 ( $M = 21.49$ ), Time 4 ( $M = 23.88$ ), and Time 6 ( $M = 23.18$ ) were not statistically significant. Thus, associations with empathic accuracy were only descriptively stronger during the first year

of marriage than later years, and a member's ability to accurately infer the specific content of a partner's thoughts and feelings declined following the first year of marriage.

While empathic accuracy tends to decline following the first year of a couple's marriage, assumed similarity seems to dominate perceptions of those members in longer relationships. This is important because assumed similarity can protect the relationship from conflict and enhance the capacity to resolve problems – a strategy that is a critical in a coach-athlete relationship. In a sport context, relationship duration moderates effects on assumed similarity and empathic accuracy. Referring again to Jowett and Clark-Carter (2006), researchers hypothesized that the duration of the coach-athlete relationship affected the proportion of empathic accuracy and assumed similarity. Researchers categorized relationship duration into two stages - moderately developed (6 months to 2 years) and established (3 years to 12 years) – based on previous research on relationship duration (Aune, Buller, & Aune, 1996). The study examined 121 Greek coach-athlete dyads ( $N = 242$ ) from various individual sports, 87 of the dyads being “moderately developed” and 34 being “established” ones. Participants answered questions from a modified version of the GrCART-Q (Jowett & Ntoumanis, 2003) followed by a modified version of the Athlete-Satisfaction Questionnaire (Riemer & Chelladurai, 1998). Results showed that athletes in moderately developed relationships with their coaches were capable of accurately inferring the content of their coaches' commitment ( $p < .001$ ) and complementarity ( $p < .001$ ) more so than athletes in established relationships. Furthermore, athletes and coaches in established relationships recorded higher levels of assumed similarity in interpersonal commitment ( $p < .001$ ). These results are consistent

with studies done on marital and romantic relationships, suggesting that empathic accuracy is more evident at the early stages of a relationship, but declines as the relationship progresses (Kenny & DePaulo, 1993; Kilpatrick, Bissonnette, & Rusbult, 2002; Thomas, Fletcher, & Lange, 1997). Coaches and athletes tend to resort to their own perceptions to infer the other member's thoughts, feelings, and behaviors, resulting in higher levels of assumed similarity or perceptual bias. Such assumption and bias may be an attempt to protect the relationship and/or self-concept from conflicts and hurt feelings.

Researchers have found other explanations for the decline of empathic accuracy in the coach-athlete relationship, other than time itself. Olympiou, Jowett, and Duda (2008) investigated the motivational significance of the coach-athlete relationship. 591 British athletes who participated in a variety of team sports (including football, rugby, volleyball, basketball, and hockey) took Jowett and Ntoumanis's (2004) 11-item Coach-Athlete Relationship Questionnaire (CART-Q) to measure direct and meta-perceptions of the three Cs. Participants also answered questions on the 29-item Perceived Motivational Climate in Sport Questionnaire (PMCSQ-2; Newton, Duda, & Yin, 2000) to assess athletes' perceptions of the motivational climate typically experienced on their teams. Results indicated that athletes' direct ( $p < .00$ , canonical correlation = .55) and meta-perceptions ( $p < .001$ , canonical correlation = .50) of their relationship with the coach were highly associated with the perceived coach-created motivational climate. While researchers discovered significant associations between athletes' perceptions of the quality of their relationships with the coach and the perceived motivational climate of the

coach, they discussed limitations to the study in regard to relationship length. Specifically, situational factors (such as performance level, athletes in pre/mid/post-season, and amount of time spent in training) were not considered in the study, which could play a role over the course of the coach-athlete relationship. For example, athletes who reach the highest level possible in their sport or who become injured will no longer need to be coached. Thus, the relationship quality may plateau or begin to decline at some point over the coach-athlete life cycle.

### ***Coach-Athlete Interdependence and Satisfaction***

While the intention of this project is to determine the relationship between the quality of the coach-athlete relationship and satisfaction with training/instruction, satisfaction with athlete performance, and satisfaction with personal treatment, previous research shows other ways to measure satisfaction.

At times, an athlete gauges their satisfaction level based on how the coach behaves. Specifically, if an athlete prefers his or her coach to act a certain way (and the coach actually behaves based on those preferences), satisfaction is met. In their study, Reimer and Toon (2001) focused on the Multidimensional Model of Leadership (MML) that Chelladurai (1993) developed, which is a theoretical framework for studying leadership in an athletic context. The researchers state that the MML hypothesizes that team member satisfaction is a function of the congruence between the leadership behavior preferred by the members and the actual leadership behavior displayed. However, researchers discovered a lack of variance associated with the primary dependent variable based on previous studies, and sought to validate the congruence



hypothesis by measuring member satisfaction of coaching behavior. 148 NCAA tennis players were given the Leadership Scale of Sports (LSS: Chelladurai & Salleh, 1980; Zhang, Jensen, & Mann, 1997) to measure athlete's preferred leadership behavior of the coach, and the actual behavior perceived. The LSS measured leadership behavior under the dimensions of training and instruction, democratic behavior, autocratic behavior, social support, and positive feedback. Member satisfaction was evaluated using Riemer & Chelladurai's (1998) Athlete Satisfaction Questionnaire, which measures athlete satisfaction based on dimensions such as individual performance, team performance, training and instruction, and personal treatment. To test the congruence hypothesis, the researchers calculated two sets of five multiple regression equations for each satisfaction subscale. This allowed the researchers to assess the variance found in each subscale based on the athlete's preference for leadership behavior, their perception of the behavior exhibited, and the interaction of the two. What the researchers found was that the amount of variance accounted for by leadership behaviors was greater in the satisfaction variables of training and instruction and personal treatment than the satisfaction variables of team and individual performance. Specifically, training and instruction behavior accounted for 32.9% of the variance in training and instruction satisfaction; positive feedback behavior accounted for 51.7% of personal treatment satisfaction and 16.3% of team performance satisfaction; and democratic behavior accounted for 12.2% of individual performance satisfaction. As a result, the MML's hypothesis that satisfaction is dependent on the congruence between preferred and actual behaviors was refuted. In general, leadership behaviors accounted more for satisfaction variables classified as "process"

(training/instruction and personal treatment) than variables classified as “outcome” (individual and team performance).

Other research showed a positive correlation between a coach’s and an athlete’s interdependence (as measured by the three Cs) and satisfaction with training and instruction, performance accomplishments, and dedication to sport and social support. Certain variables, like an athlete’s competition level, moderate the association between the quality of the coach-athlete relationship and outcome variables such as satisfaction with training and instruction. Jowett and Nezlek (2012) hypothesized that those dyads competing at higher levels (such as nationally and internationally) will have a stronger association with satisfaction than dyads that compete at lower levels. 138 British coach-athlete dyads (N = 276) responded to questions from the CART-Q (Jowett & Ntoumanis, 2004) and the ASQ (Riemer & Chelladurai, 1998). Participants coached and performed in individual sports such as swimming, track and field, cycling, golf, and racket sports. The study’s results supported previous research and found a significant relationship between interdependence and satisfaction with training (M = 5.83, SD = .05,  $p < .001$ ), satisfaction with personal treatment (M = 6.11, SD = .29,  $p < .001$ ), and satisfaction with performance (M = 5.52, SD = .10,  $p < .001$ ). Researchers confirmed their hypothesis and discovered that associations between interdependence and satisfaction with training ( $p < .001$ ) and personal treatment ( $p < .001$ ) were weaker for lower level competitors than for competitors at the regional, national, and international levels. Researchers concluded that, to be satisfied, coaches and athletes might have to establish interdependence to act as a buffer against actual or potential stress, particularly in high-level competition.

### ***What is CrossFit?***

CrossFit is a fitness regimen developed by Greg Glassman in 2000 (“What is CrossFit?” n.d.). He describes the strength and conditioning program as “constantly varied, functional movement” performed at a “high intensity” (“What is CrossFit?”) CrossFit workouts vary in the sense that workouts are not regularly repeated (unlike segmented training). Functional movements refer to the body weight exercises (squats, push-ups, pull-ups, etc.), distance movements (running and rowing), and weightlifting movements (snatch, clean and jerk, deadlift, etc.) that translate to how one’s body moves on a daily basis. These movements are combined in a workout and performed at a high intensity (rather than a moderate or low intensity) in order to improve physical fitness and overall health. The idea behind performing such movements in such a way is to develop “general physical preparedness”: CrossFit athletes are much more likely to overcome safely and effectively the everyday physical challenges that may occur (“What is CrossFit?”)

Along with these fitness regimen guidelines, CrossFit preaches the importance of the community. CrossFit affiliate gyms (known as “boxes”) coach its athletes in classes and perform workouts together as a group. Although individuals may be doing a scaled version of the workout (because of differences in skill, strength, experience, etc.), athletes perform the workout of the day (WOD) together in order to reap the benefits of exercising in a communal environment. When one athlete completes the workout, he or she continues to support the others until the workout is complete.

## *Summary*

Upon review of the aforementioned literature and those studies left out of this review, it is very clear how important the role is of perceiving the quality of the coach-athlete relationship in sports. Examining direct and meta-perceptions of athletes and coaches provides insight to how the constructs of the three Cs are interconnected with those perceptions. Such examination is much more valuable, though, if both athletes and coaches' direct and meta-perceptions are incorporated in order to grasp a larger scope of the theoretical and empirical applications of the framework.

How coaches and athletes perceive the quality of the relationship will depend on the duration of the relationship. Athletes in the early stages of their relationship will experience higher empathic accuracy (or be more motivated to observe their coaches more closely) in hopes of getting to know them better. As the relationship progresses over time, the quality of the relationship may plateau or even decline as a result of various situational factors (injuries, burnout, performance peak reached, etc.). These conclusions are consistent with research performed in other contexts, such as marital and romantic relationships.

The quality of the coach-athlete relationship may also have an effect on outcome variables such as satisfaction of the relationship and satisfaction of performance. While satisfaction may not be dependent on the congruence of preferred and actual behaviors of the coach, the level of competition the athlete is training in has an effect on satisfaction with aspects of the relationship.

## ***Limitations***

Generally speaking, the studies discussed in the literature review encountered procedural and sampling-related problems that led to limitations to their research. For instance, Philippe & Seiler's (2006) qualitative approach utilized a semi-structured interview technique employed at one point in time and using a recall technique, thus limiting the depth and breadth of the athletes' subjective experiences. Studying the quality of the coach-athlete relationship from a quantitative standpoint also has its limitations. Jowett and Clark-Carter (2006) stated that measuring empathic accuracy by using generalized judgments (or making athletes generate inferences about the coach's thoughts, feelings, and behaviors by choosing from a set of items on a questionnaire) does not allow the coach to generate his/her own inferences about the specific content of the athlete's thoughts and feelings over time. However, the researchers still claim this method to be viable since it provides important insights into people's empathic accuracy, or the degree to which one member's inferences are congruent with other's actual thoughts and behaviors (2006). This holds true in studies done on married couples, as the use of self-report instruments tend to skew results, but the validation of such instruments proves noteworthy (Kilpatrick, Bissonnette, & Rusublt, 2002). Balduck and Jowett (2010) felt that sampling predominantly male coaches from team sports limited their ability to generalize the validity of their instrument to coaches of individual sports and female coaches. The cross-sectional research performed by Jowett (2010) and Olympiou, Jowett, and Duda (2008) provided partial support for their theoretical models, but the

researchers suggested replicating the study by using a prospective-longitudinal design in order to imply causality between relational variables and achievement goal adoption.

The sample size limited the other studies in this literature review. Reimer and Toon (2001) expressed concern with the lack of responses from coaches compared to athletes, and how this discrepancy may have influenced the lower preferences and perceptions of social support behavior. Jowett and Nezlek (2012) attempted to sample female coach – male athlete dyads (along with other gender combinations), however the limited number could have influenced the weak correlation between interdependence and satisfaction for this specific group, thus limiting its ability to generalize to the rest of the population.

### ***Filling the Gaps***

Jowett (2006) argues that concentrating on predictors, processes, and consequences of the coach-athlete relationship will contribute to understanding the role of the relationship in the coaching process. Additionally, determining whether direct or meta-perceptions are better predictors of outcome variables (such as satisfaction with performance) will help clarify some of the complexities of the coach-athlete relationship and ultimately offer effective interventions for improving such outcome variables.

To this study's knowledge, no research has been done using CrossFit athletes and coaches as samples. The study wishes to contribute to the area of study by conducting research on this growing sport.

## CHAPTER 3: METHOD

This study employed a quantitative approach when selecting participants, devising a procedure to collect data, and analyzing results

### *Participants*

The participants derived from a convenience sample of CrossFit athletes and coaches from CrossFit gyms across the United States. A total of 182 CrossFit athletes and coaches participated in this study, hailing from various states across the United States, including California, Colorado, Florida, Illinois, Massachusetts, Missouri, North Carolina, Ohio, Pennsylvania, South Carolina, Texas, Virginia, Wisconsin, and Washington, D.C. Of the 182 participants, 110 of them completed the survey with usable data ( $N = 110$ ). Of these 110 participants, 17 were coaches and 93 were athletes. Of the 17 coaches, 7 have been coaching for less than 6 months (6 males and 1 female), 9 have been coaching for 6 months to 2 years (4 males and 5 females), and 1 female has been coaching for 3 years or longer (two coaches did not report the length of their relationship). Of the 93 athletes, 25 have been in relationships with their current coach for less than 6 months (15 males and 10 females), 46 have been in a relationship for 6 months to 2 years (18 males and 28 females), and 3 athletes have been in a relationship with their current coach for at least 3 years (1 male and 2 females). 19 athletes did not report the length of their relationship.

### *Setting*

Participants hailed from various CrossFit gyms across the United States. However, data analysis was conducted at a public university in Northern Virginia. The region of Northern Virginia is comprised of Arlington County, Fairfax County, Loudoun County, Prince William County, Alexandria City, Fairfax City, Falls Church City, Manassas City, and Manassas Park City. The Virginia Employment Commission (2013) reported the following demographic data for Northern Virginia:

**Table 1 Northern Virginia Demographic Data**

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Age	Under 5 years	162,008
	5 to 9 years	156,401
	10 to 14 years	146,964
	15 to 19 years	132,832
	20 to 24 years	128,707
	25 to 29 years	186,171
	30 to 34 years	180,949
	35 to 39 years	180,413
	40 to 44 years	179,535
	45 to 49 years	180,015
	50 to 54 years	161,907
	55 to 59 years	132,992
	60 to 64 years	109,140

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	65 to 69 years	70,109
	70 to 74 years	44,723
	75 to 79 years	31,487
	80 to 84 years	22,960
	85 years and over	23,310
Racial/Ethnic Background	American Indian or Alaskan Native	9,179
	Asian	302,133
	Black or African-American	259,890
	Hispanic or Latino	363,610
	White	1,415,898
	Other	147,755
	Multiple Races	93,793
Gender	Female	1,128,420
	Male	1,102,203
<b>Total</b>		<b>2,230,623</b>

Furthermore, three counties in Northern Virginia reported median household incomes greater than \$100,000, and one county reported the highest share of people ages 25 and older who had a bachelor's degree or higher (Young, 2010).

### ***Data Collection***

Data was collected quantitatively using the following instruments and procedures.

**Instruments.** Two main questionnaires were used to facilitate data collection. One assessed the quality of the coach-athlete relationship, and the other examined the level of satisfaction with specific variables.

*Coach-Athlete Relationship Questionnaire (CART-Q).* The study used Jowett and Clark-Carter's (2006) version of the Coach-Athlete Relationship Questionnaire (CART-Q), which the researchers translated from Greek, to measure coaches and athletes' direct and meta-perceptions of closeness (eight items), commitment (eight items), and complementarity (10 items). This study used two versions of the questionnaire: an athlete and a coach version. The questionnaire was modified to accommodate the study's intent to sample individual athletes and coaches, not coach-athlete pairs. It is common for a CrossFit athlete to have more than one coach, in which case participants were asked to think of their current primary coach. Since CrossFit is considered a team sport for this study, it was understood that coaches train more than one athlete, so items on the survey were modified appropriately. Furthermore, this study modified some items from the original versions of the CART-Q and the ASQ to make the statements more personable. For instance, an item from the athlete's direct perspective in regards to satisfaction with his/her performance would be "I am satisfied with *my* skill improvement thus far."

An item that measured the closeness subscale from the direct perspective was "I respect my coach" (athlete version) or "I respect my athletes" (coach version). From the meta-perspective, it was "My coach respects me" (athlete version) or "My athletes respect me" (coach version). An item from the direct perspective of the commitment

subscale was “I appreciate my coach’s sacrifice in order to improve performance” (athlete version) or “I appreciate my athletes’ sacrifices in order to improve performance” (coach version). From the meta-perspective, it was “My coach appreciates my sacrifice in order to improve performance” (athlete version) or “My athletes appreciate my sacrifice in order to improve their performance” (coach version). An item that measured the direct perspective of complementarity was “When I am coached by my coach, I am ready to do my best” (athlete version) or “When I coach my athletes, I am ready to do my best” (coach version). From the meta-perspective, it was “My coach is ready to do his/her best when he/she coaches me” (athlete version) or “My athletes are ready to do their best when I coach them” (coach version). The items were assigned a score ranging from “strongly disagree” (1) to “strongly agree” (7). Refer to Appendices B and C for complete versions of the athlete and coach survey.

*Athlete and coach satisfaction questionnaires.* The study’s second set of variables mirrored Jowett and Clark-Carter’s (2006) adoption of the 56-item Athlete Satisfaction Questionnaire (ASQ; Riemer & Chelladurai, 1998). Coaches and athletes’ self and meta-perceptions of three of the 15 satisfaction dimensions were included in this study. The questionnaire was modified to accommodate the study’s intent to sample individual athletes and coaches, not coach-athlete pairs. Items relating to athletes’ and coaches’ direct and meta-perceptions covered: (a) athletes’ satisfaction with training/instruction (six items; e.g. “I am satisfied with my coach’s training program this season” or “My coach is satisfied with his/her training program this season) and coaches’ satisfaction with training and instruction (six items; e.g. “I am satisfied with my training

program this season” or “My athletes are satisfied with my training program this season); and (b) athletes’ satisfaction with performance (four items; e.g. “I am satisfied with my skill improvement thus far” or “My coach is satisfied with my skill improvement thus far) and coaches’ satisfaction with performance (four items; e.g. “I am satisfied with my athletes’ skill improvement thus far” or “My athletes are satisfied with their skill improvement thus far”). While Jowett and Clark-Carter (2006) used a third dimension of satisfaction with external agents, this study replaced that subscale with athletes’ satisfaction with personal treatment (ten items; e.g. “I am satisfied with the recognition I receive from my coach” or “My coach is satisfied with the recognition he/she gives me”) and coaches’ satisfaction with personal treatment (ten items; e.g. “I am satisfied with the recognition I give my athletes” or “My athletes are satisfied with the recognition I give them”). The items were assigned a score ranging from “strongly disagree” (1) to “strongly agree (7). Refer to Appendices B and C for complete versions of the athlete and coach survey.

**Procedures.** This study contacted CrossFit gym owners (whose contact information are made publicly available online) and requested participation from their athletes and coaches. If owners agreed to have their members participate, an e-mail that included the survey’s web address was sent, which the owners e-mailed to their athletes and coaches or posted on their gym’s website or social media page. Additionally, the survey’s web address was posted on the researcher’s social media websites (Facebook and Twitter) to solicit a more diverse CrossFit population. The following information was emphasized: participation was voluntarily; no identifiable information was asked, so

there was no way to link responses to the participants; and if at any point during the survey a participant decided to drop out, he or she could do so and their results would be excluded from the study. Follow-up e-mails were sent to owners and the survey's link was re-posted on Facebook and Twitter.

### ***Data Analysis***

For the first research question concerning differences in how CrossFit athletes and coaches perceive the quality of the coach-athlete relationship, a comparison of means and an independent t-test was used to analyze results. A correlation analysis was used for the second research question when determining inter-item correlation between perceptions of relationship quality and perceptions of satisfaction. Regression analyses determined if meta-perceptions of relationship quality predicted perceptions of the three satisfaction variables. For the third research question, a comparison of means and an analysis of variance (ANOVA) was used to determine the effect of relationship duration on perceptions of the coach-athlete relationship. Finally, a comparison of means and an independent t-test was used to determine a difference between male and female coaches and athletes' perceptions of relationship quality.

### ***Confidentiality***

Each participant's identity remained confidential throughout this study. The survey did not ask for participants' names, only basic demographic information (gender, location of gym, and length of participation at the current CrossFit gym). The first page of the survey served as the informed consent page, detailing the survey's objective and contact information of the researcher. Here, participants were given the opportunity to

agree or disagree to take the survey. If participants disagreed, the survey linked participants to a page that thanked them for their time. To view the complete informed consent form, refer to Appendix A.

### ***Validity***

According to Jowett (2006), the internal consistency estimates (Cronbach's alpha) for the Coach-Athlete Relationship Questionnaire were found across all three of the relationship constructs from both athletes and coaches' direct and meta- perceptions: athlete direct (closeness - .75, commitment - .80, complementarity - .83) and athlete meta (closeness - .82, commitment - .90, complementarity - .92); coach direct (closeness - .80, commitment - .90, complementarity - .91) and coach meta (closeness - .88, commitment - .91, complementarity - .94). Based on these scores, past researchers concluded that the items on the CART-Q were indeed measuring the constructs of closeness, commitment, and complementarity from both the direct and meta-perspective.

Jowett and Clark-Carter (2006) also tested the Athlete and Coach Satisfaction Questionnaire for internal consistency. The mean Cronbach's alpha across the three satisfaction subscales (athlete performance, coach instruction/training, and external agents) was 0.76 for athletes' self-perceptions, 0.82 for athletes' meta-perceptions, 0.78 for coaches' self-perceptions, and 0.83 for coaches' meta-perceptions (Jowett & Clark-Carter, 2006). Since this study replaced the satisfaction subscale of external agents with personal treatment, the original ASQ was referred to and researchers reported a Cronbach's alpha of .92 for satisfaction with personal treatment (Reimer & Chelladurai, 1998). It is the researcher's belief that the items in this study's version of the ASQ are

measuring participants' direct and meta-perceptions of satisfaction with athlete performance, coach instruction/training, and personal treatment, based on previous research's results.

The study's intention to sample CrossFit athletes and coaches from around the country limited threats to internal validity. The study attempted to limit the effect of selection bias by sampling a large and diverse group within the CrossFit population (which would address any issues to external validity as well). Additionally, since participants took the questionnaires only once, threats to internal validity that are related to time or repeated testing did not apply. The study expected experimenter bias to influence data analyses and interpretations of the results. However, such expectation is justified since the research questions and hypotheses derived from the interest of the researcher, which served as the foundation for the purpose of this study.

### ***Reliability***

It is this study's belief that the modifications to the questionnaires did not affect reliability. By having participants consider the coaches they work with or the athletes they train as a whole as opposed to individually should not have altered the intended measurement of each construct's items. Previous studies developed their own modified version of the original CART-Q and obtained significant results with limited threats to the reliability of the study (Aide & Jowett, 2010; Balduck & Jowett, 2010; Jowett, 2006; Jowett & Clark-Carter, 2006; Jowett, 2009, Yang, 2012). Therefore, future research that wishes to utilize this study's version of the CART-Q and ASQ should obtain similar results. Refer to Table 5 for the CART-Q and the ASQ's inter-item correlation scores.

## CHAPTER 4: RESULTS

A total of 182 CrossFit athletes and coaches participated in this study. Of the 182 participants, 110 of them completed surveys with usable data (N = 110).

**Table 2 Athlete Descriptive Statistics for Three Cs and Satisfaction**

---

	<i>M</i>	<i>SD</i>
Closeness (D)	6.44	.99
Closeness (M)	6.08	1.12
Commitment (D)	5.99	1.16
Commitment (M)	5.87	1.29
Complementarity (D)	6.24	1.23
Complementarity (M)	6.19	1.11
Satisfaction with Training and Instruction (D)	6.13	1.31
Satisfaction with Training and Instruction (M)	6.28	1.07
Satisfaction with Athlete's Performance (D)	5.75	1.30
Satisfaction with Athlete's Performance (M)	5.66	1.30
Satisfaction with Personal Treatment (D)	6.18	1.28
Satisfaction with Personal Treatment (M)	6.25	1.11



**Table 3 Coach Descriptive Statistics for Three Cs and Satisfaction**

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	<i>M</i>	<i>SD</i>
Closeness (D)	6.65	.39
Closeness (M)	6.49	.57
Commitment (D)	6.59	.46
Commitment (M)	6.31	.60
Complementarity (D)	6.55	.40
Complementarity (M)	6.27	.64
Satisfaction with Training and Instruction (D)	5.92	.72
Satisfaction with Training and Instruction (M)	6.20	.72
Satisfaction with Athlete's Performance (D)	5.97	.83
Satisfaction with Athlete's Performance (M)	6.09	.61
Satisfaction with Personal Treatment (D)	6.56	.47
Satisfaction with Personal Treatment (M)	6.58	.49

**Table 4 Athlete and Coach Comparison of Means for Three Cs and Satisfaction**

	<b>Athlete</b>		<b>Coach</b>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Closeness (D)	6.44	.99	6.65	.39
Closeness (M)	6.08	1.12	6.49	.57
Commitment (D)	5.99	1.16	6.59	.46
Commitment (M)	5.87	1.29	6.31	.60
Complementarity (D)	6.24	1.23	6.55	.40
Complementarity (M)	6.19	1.11	6.27	.64
Satisfaction with Training and Instruction (D)	6.13	1.31	5.92	.72
Satisfaction with Training and Instruction (M)	6.28	1.07	6.20	.72
Satisfaction with Athlete's Performance (D)	5.75	1.30	5.97	.83
Satisfaction with Athlete's Performance (M)	5.66	1.30	6.09	.61
Satisfaction with Personal Treatment (D)	6.18	1.28	6.56	.47
Satisfaction with Personal Treatment (M)	6.25	1.11	6.58	.49

Table 2 displays the means and standard deviations of the athletes' direct and meta-perceptions of the three Cs (closeness, commitment, and complementarity) and three satisfaction variables (satisfaction with training and instruction, satisfaction with athlete performance, and satisfaction with personal treatment). Table 3 displays the means and standard deviations of the coaches' direct and meta-perceptions of the three Cs (closeness, commitment, and complementarity) and three satisfaction variables

(satisfaction with training and instruction, satisfaction with athlete performance, and satisfaction with personal treatment). Table 4 compares the means and standard deviations of athletes and coaches' scores on the CART-Q and ASQ. Athletes and coaches exhibited high scores for all variables, as indicated by mean values greater than the midpoint (i.e., >3.5; range = 1 - 7). Furthermore, an independent t-test determined that athletes and coaches did not score significantly different on items relating to the three Cs and the three satisfaction variables, except for the construct of Direct Commitment,  $t(107) = 2.04, p < .05$ , where coaches scored higher than athletes

**Table 5 Inter-Item Correlation Among Three Cs and Satisfaction Variables**

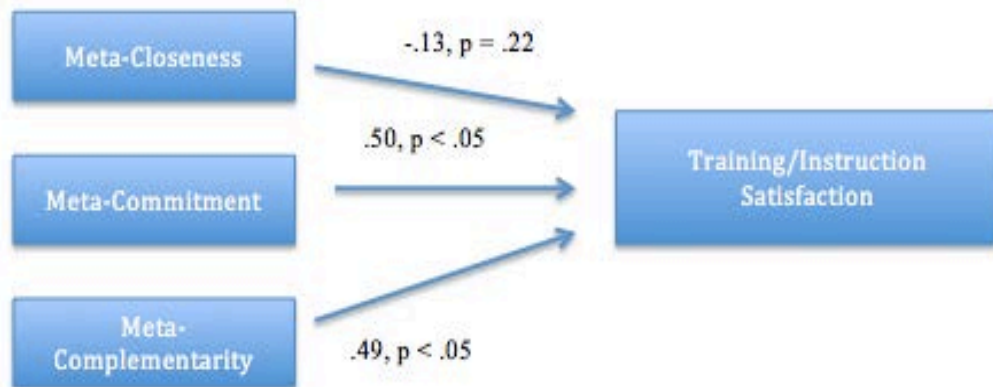
<b>Variable</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
1. Closeness (D)	--											
2. Closeness (M)	.82*	--										
3. Commitment (D)	.80*	.79*	--									
4. Commitment (M)	.79*	.82*	.94*	--								
5. Complementarity (D)	.87*	.71*	.80*	.80*	--							
6. Complementarity (M)	.78*	.72*	.81*	.85*	.90*	--						
7. Satisfaction with Training/Instruction (D)	.83*	.63*	.75*	.74*	.90*	.79*	--					
8. Satisfaction with Training/Instruction (M)	.67*	.59*	.61*	.64*	.74*	.82*	.70*	--				
9. Satisfaction with Performance (D)	.71*	.59*	.70*	.70*	.78*	.72*	.78*	.63*	--			
10. Satisfaction with Performance (M)	.63*	.73*	.77*	.76*	.66*	.70*	.61*	.61*	.78*	--		
11. Satisfaction with Personal Treatment (D)	.84*	.80*	.78*	.79*	.87*	.82*	.80*	.63*	.75*	.73*	--	
12. Satisfaction with Personal Treatment (M)	.75*	.75*	.73*	.76*	.79*	.84*	.67*	.75*	.68*	.70*	.90*	--

Simple correlations are presented in Table 5. A Pearson correlation test showed that each of the three relationship variables (from both the direct and meta-perspectives) positively correlated with each of the three satisfaction variables. Specifically, closeness positively correlated with satisfaction with training and instruction, satisfaction with athlete performance, and satisfaction with personal treatment; commitment positively correlated with satisfaction with training and instruction, satisfaction with athlete performance, and satisfaction with personal treatment; and complementarity positively correlated with satisfaction with training and instruction, satisfaction with athlete performance, and satisfaction with personal treatment. Additionally, significant correlations were observed between the three Cs and between the three satisfaction variables. Results were consistent with previous research, confirming the instruments' reliability.

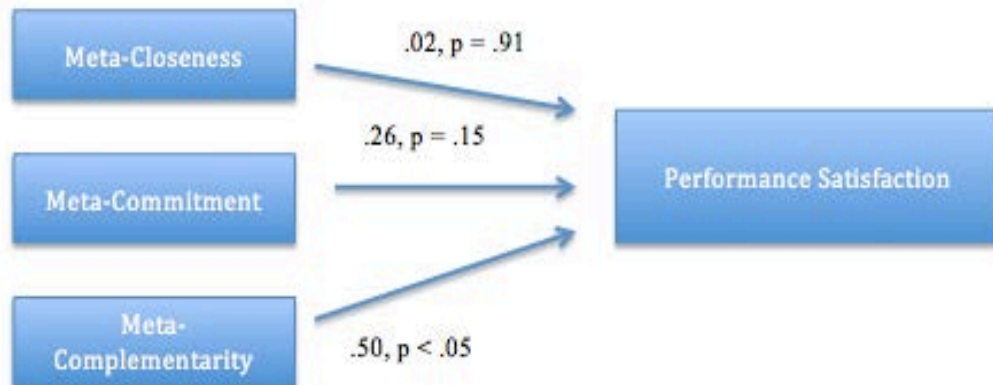
Since strong associations were discovered between the three Cs and the three satisfaction variables, standard multiple regression analyses were conducted to see which of the relationship quality constructs significantly predicted the outcome variables of satisfaction with training and instruction, satisfaction with performance, and satisfaction with personal treatment. When meta-closeness, meta-commitment, and meta-complementarity were regressed on athletes' satisfaction with training and instruction, the results were as follows:  $F(3, 86) = 70.50, p < .05, r = .85, R^2 = .72$ . When athletes' satisfaction with performance was the outcome variable for the three meta-relationship components, the results were as follows:  $F(3, 87) = 35.47, p < .05, r = .75, R^2 = .56$ . Finally, all three meta-relationship components predicted athletes' satisfaction with the

coach's personal treatment:  $F(3, 85) = 116.10, p < .05, r = .90, R^2 = .81$ . The standardized beta coefficients for the athlete regression analyses are presented in Figure 2.

A. Outcome Variable: Athlete's Satisfaction with Training



B. Outcome Variable: Athlete's Satisfaction with Performance



C. Outcome Variable: Athlete's Satisfaction with Personal Treatment

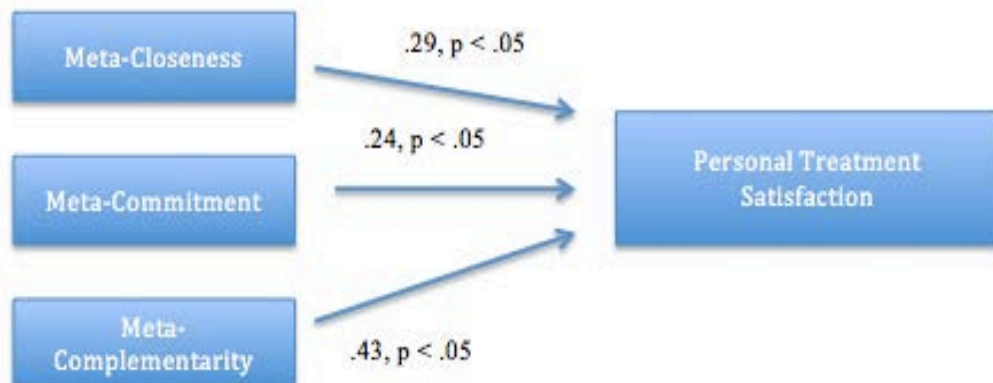
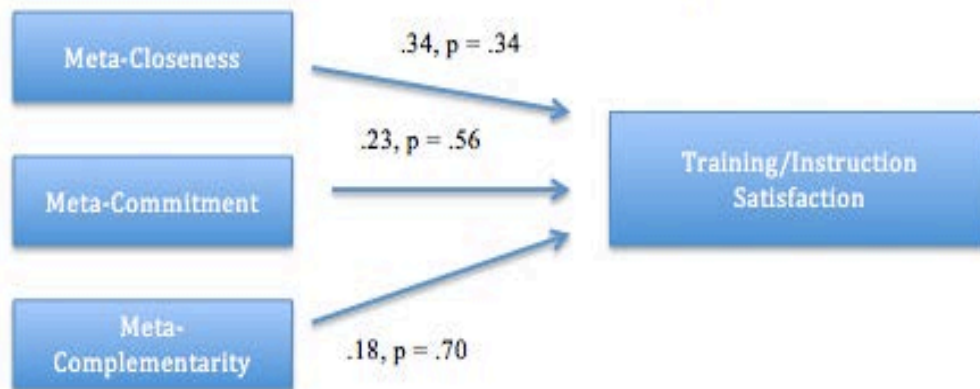
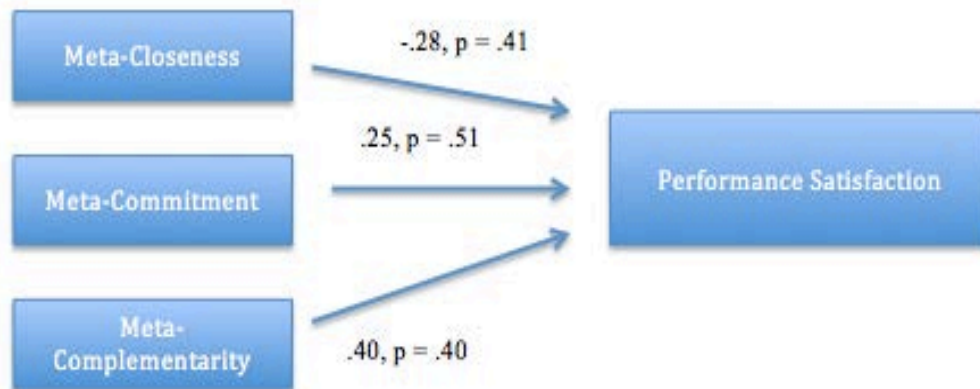


Figure 2 Standardized Regression Coefficients for Athletes

A. Outcome Variable: Coach's Satisfaction with Training



B. Outcome Variable: Coach's Satisfaction with Athlete Performance



C. Outcome Variable: Coach's Satisfaction with Personal Treatment

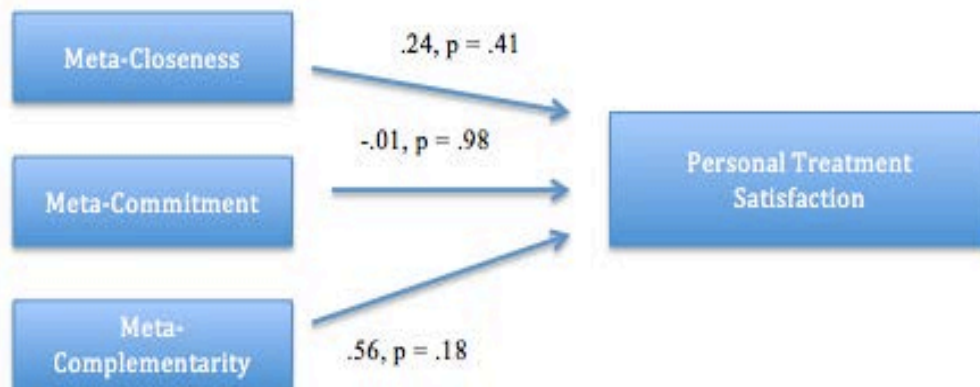


Figure 3 Standardized Regression Coefficients for Coaches



For the coaches, the results of the three meta-relationship components predicting the three satisfaction variables are as follows: when meta-closeness, meta-commitment, and meta-complementarity were regressed on coach's satisfaction with training and instruction,  $F(3, 16) = 2.15$ ,  $p = .14$ ,  $r = .58$ ,  $R^2 = .33$ ; when the meta-relationship components were regressed on the coaches' satisfaction with athletes' performance,  $F(3, 16) = 2.02$ ,  $p = .16$ ,  $r = .56$ ,  $R^2 = .32$ ; and when the meta-relationship components were regressed on satisfaction with personal treatment,  $F(3, 16) = 4.65$ ,  $p < .05$ ,  $r = .72$ ,  $R^2 = .52$ . The standardized beta coefficients for the coach regression analyses are presented in Figure 3.

**Table 6 Effect of Relationship Duration on Three Cs**

	<b>Duration</b>	<b><i>M</i></b>	<b><i>SD</i></b>	<b><i>df</i></b>	<b><i>F</i></b>	<b><i>Sig</i></b>
Closeness (D)	< 6 months	6.42	1.09	(2, 89)	.29	.75
	6 months – 2 years	6.50	.97			
	3 years +	6.81	.38			
Closeness (M)	< 6 months	5.98	1.35	(2, 88)	.23	.59
	6 months – 2 years	6.23	.98			
	3 years +	6.00	.94			
Commitment (D)	< 6 months	6.14	1.13	(2, 88)	.28	.82
	6 months – 2 years	5.98	1.19			
	3 years +	6.13	1.42			
Commitment (M)	< 6 months	5.96	1.25	(2, 87)	.07	.97
	6 months – 2 years	5.87	1.27			
	3 years +	5.91	.94			
Complementarity (D)	< 6 months	6.30	1.16	(2, 87)	.18	.84
	6 months – 2 years	6.18	1.30			
	3 years +	6.50	.66			
Complementarity (M)	< 6 months	6.10	1.17	(2, 88)	.15	.87
	6 months – 2 years	6.23	1.09			
	3 years +	6.10	.89			

A multivariate analysis of variance (ANOVA) was performed to discover an effect a participant's relationship duration has on the three Cs. According to the analysis, relationship duration did not have a significant effect on participants' scores on the CART-Q (significance was evaluated at  $p < .05$ ).

**Table 7 Athlete Descriptive Statistics for Three Cs by Gender**

	Male		Female	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Closeness (D)	6.58	.48	6.40	1.23
Closeness (M)	6.06	.89	6.12	1.31
Commitment (D)	5.99	.99	6.06	1.21
Commitment (M)	5.92	1.10	5.91	1.39
Complementarity (D)	6.28	.89	6.34	1.32
Complementarity (M)	6.15	.98	6.27	1.23

**Table 8 Coach Descriptive Statistics for Three Cs by Gender**

	Male		Female	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Closeness (D)	6.75	.27	6.54	.55
Closeness (M)	6.78	.34	6.17	.73
Commitment (D)	6.61	.37	6.54	.64
Commitment (M)	6.19	.58	6.54	.62
Complementarity (D)	6.56	.37	6.50	.52
Complementarity (M)	6.36	.58	6.17	.88

**Table 9 Athlete and Coach Comparison of Means for Three Cs by Gender**

	Athlete				Coach			
	Male		Female		Male		Female	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Closeness (D)	6.58	.48	6.40	1.23	6.75	.27	6.54	.55
Closeness (M)	6.06	.89	6.12	1.31	6.78	.34	6.17	.73
Commitment (D)	5.99	.99	6.06	1.21	6.61	.37	6.54	.64
Commitment (M)	5.92	1.10	5.91	1.39	6.19	.58	6.54	.62
Complementarity (D)	6.28	.89	6.34	1.32	6.56	.37	6.50	.52
Complementarity (M)	6.15	.98	6.27	1.23	6.36	.58	6.17	.88

Table 7 displays the means and standard deviations of athletes' perceptions of the quality of the coach-athlete relationship, as it pertains to gender. Table 8 displays the

means and standard deviations of coaches' perceptions of relationship quality, as it pertains to gender. Table 9 displays a comparison of means of athletes and coaches' perceptions of relationship quality, according to gender. 57 of the participants were male and 52 were female (one participant did not report his or her gender). Furthermore, there were 10 male coaches and 7 female coaches, as well as 47 male athletes and 45 female athletes. Male and female athletes scored above the midpoint (i.e. >3.5, range = 1-7) on items pertaining to the direct and meta-perceptions of closeness, commitment, and complementarity. Male and female coaches also scored above the midpoint on items pertaining to the direct and meta-perceptions of closeness, commitment, and complementarity. An independent t-test showed that gender did not significantly affect how participants scored on the CART-Q (significance was evaluated at  $p < .05$ ).

## CHAPTER 5: DISCUSSION OF RESULTS

For the first research question, this study hypothesized that coaches and athletes would not score significantly different on the CART-Q and the ASQ. Results failed to reject the null hypothesis, except when dealing with athletes and coaches' direct perspective on the construct of commitment. Specifically, athletes tended to score lower than their coaches when answering the item "I identify with/understand my coach/athlete." It is my interpretation that the disparity in athletes and coaches' responses has much to do with the coach-athlete ratio in CrossFit gyms; meaning one coach is responsible for multiple athletes. Furthermore, Jowett and Cockerill (2003) explained that the coach is the member who is best resourced in creating high quality working relationships, which could explain why CrossFit coaches perceived higher direct commitment scores than their athletes. Aside from this difference, CrossFit athletes and coaches displayed assumed similarity (indicated by scores from athletes' direct and meta-perceptions, and coaches' direct and meta-perceptions) and actual similarity (indicated by each member's direct perspective scores) in terms of closeness, complementarity, and the three satisfaction variables. In Jowett and Clark-Carter (2006), coach-athlete dyads displayed overall higher levels of assumed similarity than empathic accuracy. Since coaches are more likely to interact with athletes in a team setting (e.g. a coach expresses feelings of closeness to all athletes at once), and athletes are likely to interact with their

coaches on a one-to-one basis (e.g. discussing a problem with their coach privately), athletes and coaches resort to their own perceptions of the other to infer feelings, thoughts, and behaviors (2006).

Past research theoretically and empirically demonstrated that coach-athlete interactions predict satisfaction (Chelladurai, 1993; Jowett & Poczwadowski, 2007; Jowett, 2009). High correlations between the meta-perceptions of the three Cs and each of the satisfaction variables provided evidence of concurrent validity. Regression analyses highlighted the proportion of variation in the satisfaction variables that the meta-relationship components predict. This study chose to examine relationship members' meta-perceptions in an effort to extend previous studies' claims that the ability to understand others is less accurate because the information transmitted is incomplete or imprecise, or the information available is processed in ways that make people feel good about themselves (Jowett, 2009). A significant amount of variance of athletes' satisfaction with training/instruction (72%), performance (56%), and personal treatment (81%) was accounted for by the three meta-relationship variables. For coaches, satisfaction with personal treatment (52%) was accounted for by the three meta-relationship variables, while satisfaction with training/instruction (33%) and satisfaction with athlete performance (32%) was fairly low. Despite each of the meta-relationship components accounting for little of the variance, coaches' meta-perceptions as a whole significantly predicted satisfaction with personal treatment. Previous research explained that the meta-perceptions of athletes and coaches are less predictive of satisfaction with performance because performance is an intrapersonal characteristic, as opposed to an

interpersonal one (Jowett, 2009; Reimer & Chelladurai, 1998). For example, when athletes perform a skill during training or competition, satisfaction is determined by how they feel they have performed, not how they feel about the relationship with their coach. However, this study found that CrossFit athletes' meta-relationship components significantly predicted satisfaction with performance. CrossFit coaches are trained to be aware of the importance of establishing a strong coach-athlete relationship (Bergeron, 2011). Such awareness could facilitate athletes' ability to accurately infer about their coaches' thoughts, feelings, and behavior concerning their performance, which in turn makes athletes satisfied about how they perform during workouts. Athletes' meta-perceptions of the three Cs also predicted their satisfaction with how the coach treats them. This may be explained by how CrossFit coaches make a conscious effort to read and understand their athletes and adjust the coaching strategy to best fit their athletes' needs (Bergeron, 2011).

Relationship duration did not have a significant effect on how athletes and coaches perceived the quality of the relationship. Whether a coach or an athlete was at their current box for less than 6 months, 6 months to 2 years (moderately developed), or 3 years or more (established), CrossFitters tended to score highly on the CART-Q. However, previous research on marital and romantic relationships (Kenny & DePaulo, 1993; Kilpatrick, Bissonnette, & Rusbult, 2002; Thomas, Fletcher, & Lange, 1997) as well as research performed in a sports context (Jowett & Clark-Carter, 2006) concluded that members of a relationship display accuracy when in the early stages of the relationship, but such accuracy declines as the relationship progresses. This study



showed that regardless of relationship duration, CrossFitters still displayed similarity and accuracy across the three Cs. High levels of assumed similarity may help promote a sense of solidarity, stability, and harmony (such as working towards mutual goals), all of which are critical for relationship commitment and continuity (Jowett & Clark-Carter, 2006). CrossFit coaches make a determined effort in establishing a solid foundation that allows for a nurturing relationship as the relationship progresses (Bergeron, 2011). Furthermore, CrossFit's emphasis on the role of the community when exercising may facilitate the similarity and accuracy in responses on the CART-Q. In other words, because coaches intend to create a welcoming atmosphere to athletes (both new and recurring), coaches and athletes highly perceive the relationship quality.

This study was also interested in discovering if gender had an effect on how participants scored on the CART-Q, but there was no significant difference in how males and females perceived the quality of the coach-athlete relationship. Previous research discovered that gender differences were associated with assumed similarity linked to the female athlete, which led to the conclusion that female athletes assume similarity between them and their coaches in an effort to enhance mental representations of the self. (Jowett & Clark-Carter, 2006). In other words, a female athlete will claim that she trusts her coach and assume that her coach trusts her as a way to heighten her self-concept. This study did not indicate any differences and can only conclude that male and female athletes and coaches did not significantly differ on their perceptions of closeness, commitment, and complementarity.

## CHAPTER 6: CONCLUSION

Relationship is a complex notion that needs to be dissected and examined in order to fully comprehend its overall effectiveness on various outcome variables. The coach-athlete relationship is particularly important to study because it may lead to both members' satisfaction with the relationship and with performance. In this study, CrossFit athletes and coaches did not perceive the quality of the relationship (in terms of closeness, commitment, and complementarity) differently, which could mean that similarity and accuracy in their responses might exist. Furthermore, neither the participants' gender nor their relationship duration had a significant effect on how coaches and athletes perceived relationship quality. Perhaps more intriguing is that athletes' perceptions of relationship quality predicted their own satisfaction with their performance. The sport of CrossFit creates an atmosphere where the communal environment (i.e. athletes and coaches within a CrossFit gym, and CrossFitters around the country) fosters a strong coach-athlete relationship from the beginning. CrossFit best exhibits the role of the communal environment when athletes perform particularly high-intense (and often daunting) workouts, but athletes find solace in the fact that they do not do the workouts alone, and that the coaches provide constant informative and moral support until the last athlete completes the workout. Completing workouts under such conditions could explain why athletes are satisfied with their performance.

This study could be generalized to other sports (particularly team sports) when stressing the importance of an effective coach-athlete relationship. Perceiving each other's closeness, commitment, and complementarity similarly and/or accurately would indicate a quality coach-athlete relationship, which could then lead to improvement in the athlete's performance and athlete's satisfaction with his or her performance.

Future research should examine how the three Cs predict other satisfaction variables (satisfaction with personal dedication, the ethical position of coaches, team contribution, etc.). It is also important to discover differences in how coach-athlete dyads perceive the relationship quality than coaches and athletes in a team setting. When looking at CrossFit specifically, future researchers could examine how perceptions of relationship quality affect the achievement of athletes' and coaches' goals in this sport (such as recording a new personal record on specific weightlifting exercises or workouts, or preparing an athlete to compete in the CrossFit Games). Another factor to consider is how this study primarily consisted of participants who currently CrossFit, so incorporating those athletes who no longer CrossFit (or who do not currently have a coach) and comparing them with current CrossFit athletes would broaden the scope of researching perceptions of relationship quality. While relationship duration did not significantly affect perceptions of relationship quality, the fact that CrossFit coaches have different certification levels could influence their perceptions of relationship quality and satisfaction. Qualitative studies would also be helpful in gaining a deeper understanding of how coaches and/or athletes perceive the quality of the relationship, in hopes of developing theoretical implications.

This study made significant contributions to the area of coach-athlete relationships, perceptions of relationship quality, and scholarly research on the sport of CrossFit. Research in these areas help promote a strong association between the theoretical implications of social sciences and the empirical evidence found in sports and recreation studies. Such extension also helps to uncover holistic and specific factors across varieties of relationships.

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## **CURRICULUM VITAE**

David Flores graduated from Stonewall Jackson High School, Manassas, Virginia, in 2005. He received his Bachelor of Science from the University of Mary Washington in 2009. He is currently employed as a first grade assistant teacher, as well as a basketball, lacrosse, and soccer coach, at Flint Hill School. He received his Master of Science in Sport and Recreation Studies from George Mason University in 2013.

## APPENDIX A – INFORMED CONSENT

Hello, my name is David Flores and I am a master's candidate for the College of Education and Human Development at George Mason University. I am conducting research on the perceptions of the quality of the coach-athlete relationship in CrossFit athletes and coaches. Specifically, I want to know how perceptions of closeness, commitment, and complementarity are related to perceptions of satisfaction with athlete performance, coach instruction/training, and the coach's personal treatment of the athlete. If you agree to participate, you will be asked to complete a brief 10-minute online survey.

There are no foreseeable risks for participating in this research. While individual participants may not benefit directly from participation, the results of this study will expand the knowledge base on what is known about athletes and coaches' perceptions on relationship quality. I will also contribute to scholarly research on this topic area by collecting data on the sport of CrossFit, which – to my knowledge – has never been done before.

If you would like to participate, please fill out this brief 10-minute survey. Your participation is completely voluntary, and you may withdraw from the study at any time and for any reason. If you decide not to participate or if you withdraw from the study, there is no penalty or loss of benefits to which you are otherwise entitled.

Your responses will be confidential. Names and other identifiers will not be placed on surveys or other research data. The host site does not sell or share survey responses to third party advertisers or marketers. For more information about Survey Monkey's privacy policy, please refer to <http://www.surveymonkey.com/mp/policy/privacy-policy/>.

If you have any questions, please contact me by phone (571-422-8373) or by e-mail (dflores1@masonlive.gmu.edu); or you may contact my research advisor, Craig Esherick, at craig\_esherrick@yahoo.com. If you have any questions about your rights as a participant, you may contact the George Mason University Office of Research Integrity & Assurance at 703-993-4121. Thank you in advance for your participation!

Do you agree to participate in this study?

- I agree to participate
- I do not agree to participate

## APPENDIX B – ATHLETE SURVEY

*Please respond to the following demographic questions by circling the answer or writing in the appropriate information.*

1) Are you a male or a female?

Male

Female

2) At which box do you currently train?

Name of box \_\_\_\_\_

City/Town \_\_\_\_\_

State \_\_\_\_\_

3) How long have you been training with your current primary coach?

Less than 6 months

6 months to 2 years

More than 2 years

Please rate the following items on a scale of 1 (strongly disagree) to 7 (strongly agree). If more than one coach trains you, then please think about these items by referring to your **primary coach**.

4) I like my coach	1	2	3	4	5	6	7
5) My coach likes me	1	2	3	4	5	6	7
6) I trust my coach	1	2	3	4	5	6	7
7) My coach trusts me	1	2	3	4	5	6	7

8) I respect my coach	1	2	3	4	5	6	7
9) My coach respects me	1	2	3	4	5	6	7
10) I feel that my training under the supervision of my coach is gratifying and satisfying	1	2	3	4	5	6	7
11) My coach feels that coaching me is gratifying and satisfying	1	2	3	4	5	6	7
12) I appreciate my coach's sacrifices in order to improve performance	1	2	3	4	5	6	7
13) My coach appreciates my sacrifices in order to improve performance	1	2	3	4	5	6	7
14) I cooperate well with my coach so that our goals are achieved	1	2	3	4	5	6	7
15) My coach cooperates well with me so that our goals are achieved	1	2	3	4	5	6	7
16) I communicate well with my coach	1	2	3	4	5	6	7
17) My coach communicates well with me	1	2	3	4	5	6	7
18) I identify with/ understand my coach	1	2	3	4	5	6	7
19) My coach identifies with/ understands me	1	2	3	4	5	6	7
20) When I am coached by my coach, I feel capable	1	2	3	4	5	6	7

21) My coach feels capable when he/she coaches me	1	2	3	4	5	6	7
22) When I am coached by my coach, I am concerned/ interested	1	2	3	4	5	6	7
23) My coach is concerned/ interested when he/she coaches me	1	2	3	4	5	6	7
24) When I am coached by my coach, I am at ease	1	2	3	4	5	6	7
25) My coach is at ease when he/she coaches me	1	2	3	4	5	6	7
26) When I am coached by my coach, I am ready to do my best	1	2	3	4	5	6	7
27) My coach is ready to do his/her best when he/she coaches me	1	2	3	4	5	6	7
28) When I am coached by my coach, I am supported/ understood	1	2	3	4	5	6	7
29) My coach is understanding when he/she coaches me	1	2	3	4	5	6	7
30) I am satisfied with my coach's training program this year	1	2	3	4	5	6	7
31) My coach is satisfied with his/her training program this year	1	2	3	4	5	6	7
32) I am satisfied with my coach's training/instruction	1	2	3	4	5	6	7
33) My coach is satisfied with	1	2	3	4	5	6	7

his/her training/instruction

34) I am satisfied with the way my coach instructs tactics and techniques	1	2	3	4	5	6	7
35) My coach is satisfied with the way the he/she instructs tactics and techniques	1	2	3	4	5	6	7
36) I am satisfied with the degree to which my performance goals are being reached	1	2	3	4	5	6	7
37) My coach is satisfied with the degree to which my performance goals are being reached	1	2	3	4	5	6	7
38) I am satisfied with my skill improvement thus far	1	2	3	4	5	6	7
39) My coach is satisfied with my skill improvement thus far	1	2	3	4	5	6	7
40) I am satisfied with the recognition I receive from my coach	1	2	3	4	5	6	7
41) My coach is satisfied with the recognition he/she gives me	1	2	3	4	5	6	7
42) I am satisfied with my coach's friendliness towards me	1	2	3	4	5	6	7
43) My coach is satisfied with his/her friendliness towards me	1	2	3	4	5	6	7
44) I am satisfied with the level of appreciation my coach	1	2	3	4	5	6	7

shows me when I do well

45) My coach is satisfied with the level of appreciation he/she shows me when I do well	1	2	3	4	5	6	7
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46) I am satisfied with my coach's loyalty towards me	1	2	3	4	5	6	7
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47) My coach is satisfied with his/her loyalty to me	1	2	3	4	5	6	7
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48) I am satisfied with the extent to which my coach is behind me	1	2	3	4	5	6	7
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49) My coach is satisfied with the extent to which he/she is behind me	1	2	3	4	5	6	7
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## APPENDIX C – COACH SURVEY

*Please respond to the following demographic questions by circling the answer or writing in the appropriate information.*

1) Are you a male or a female?

Male

Female

2) At which box do you currently coach?

Name of box \_\_\_\_\_

City/Town \_\_\_\_\_

State \_\_\_\_\_

3) How long have you been a coach at this box?

Less than 6 months

6 months to 2 years

More than 2 years

*Please rate the following items on a scale of 1 (strongly disagree) to 7 (strongly agree). If you coach more than one athlete, please think about these items by referring to your athletes as a whole.*

4) I like my athletes	1	2	3	4	5	6	7
5) My athletes like me	1	2	3	4	5	6	7
6) I trust my athletes	1	2	3	4	5	6	7
7) My athletes trust me	1	2	3	4	5	6	7



8) I respect my athletes	1	2	3	4	5	6	7
9) My athletes respect me	1	2	3	4	5	6	7
10) I feel that coaching my athletes is gratifying and satisfying	1	2	3	4	5	6	7
11) My athletes feel that their training under my supervision is gratifying and satisfying	1	2	3	4	5	6	7
12) I appreciate my athletes' sacrifices in order to improve their performance	1	2	3	4	5	6	7
13) My athletes' appreciate my sacrifices in order to improve their performance	1	2	3	4	5	6	7
14) I cooperate well with my athletes so that our goals are achieved	1	2	3	4	5	6	7
15) My athletes cooperate well with me so that our goals are achieved	1	2	3	4	5	6	7
16) I communicate well with my athletes	1	2	3	4	5	6	7
17) My athletes communicate well with me	1	2	3	4	5	6	7
18) I identify with/ understand my athletes	1	2	3	4	5	6	7
19) My athletes identify with/ understand me	1	2	3	4	5	6	7
20) When I coach my athletes, I feel capable	1	2	3	4	5	6	7

21) My athletes feel capable when I coach him/her	1	2	3	4	5	6	7
22) When I coach my athletes, I am concerned/interested	1	2	3	4	5	6	7
23) My athletes are concerned/interested when I coach him/her	1	2	3	4	5	6	7
24) When I coach my athletes, I am at ease	1	2	3	4	5	6	7
25) My athletes are at ease when I coach them	1	2	3	4	5	6	7
26) When I coach my athletes, I am ready to do my best	1	2	3	4	5	6	7
27) My athletes are ready to do their best when I coach them	1	2	3	4	5	6	7
28) When I coach my athletes, I am supported/understood	1	2	3	4	5	6	7
29) My athletes are understanding when I coach them	1	2	3	4	5	6	7
30) I am satisfied with my training program this year	1	2	3	4	5	6	7
31) My athletes are satisfied with my training program this year	1	2	3	4	5	6	7
32) I am satisfied with my training/instruction	1	2	3	4	5	6	7
33) My athletes are satisfied with my training/instruction provided	1	2	3	4	5	6	7
34) I am satisfied with the way	1	2	3	4	5	6	7

I instruct tactics and techniques

35) My athletes are satisfied with the way I instruct tactics and techniques	1	2	3	4	5	6	7
36) I am satisfied with the degree to which my athletes' performance goals are being reached	1	2	3	4	5	6	7
37) My athletes are satisfied with the degree to which their performance goals are being reached	1	2	3	4	5	6	7
38) I am satisfied with my athletes' skill improvement thus far	1	2	3	4	5	6	7
39) My athletes are satisfied with their skill improvement thus far	1	2	3	4	5	6	7
40) I am satisfied with the recognition I give my athletes	1	2	3	4	5	6	7
41) My athletes are satisfied with the recognition I give them	1	2	3	4	5	6	7
42) I am satisfied with my friendliness toward my athletes	1	2	3	4	5	6	7
43) My athlete are satisfied with my friendliness towards them	1	2	3	4	5	6	7
44) I am satisfied with the level of appreciation I show my athletes when they do well	1	2	3	4	5	6	7
45) My athletes are satisfied with the level of appreciation	1	2	3	4	5	6	7

I show them  
when they does well

46) I am satisfied with my loyalty toward my athletes	1	2	3	4	5	6	7
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47) My athletes are satisfied with my loyalty towards them	1	2	3	4	5	6	7
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48) I am satisfied with the extent to which I am behind my athletes	1	2	3	4	5	6	7
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49) My athletes are satisfied with the extent to which I am behind them	1	2	3	4	5	6	7
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