ATHLETES' PERCEPTIONS OF COACHING EFFECTIVENESS IN TEAM AND INDIVIDUAL SPORT

By

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ABSTRACT

The aim of the current thesis was to investigate athletes' perceptions of coaching effectiveness in team and individual sport. The current thesis is comprised of five chapters, three of which are empirical. Chapter 1 is an introduction that reviews the literature on coaching effectiveness of direct relevance to this thesis. This chapter also identifies a number of theoretical frameworks of relevance to the investigation of coaching effectiveness in sport, and subsequently uses these to inform the empirical studies that follow. The first of these – Chapter 2 – investigated a number of antecedents of athletes' perceptions of their coach's effectiveness, finding athlete sex, sport type (i.e., individual vs. team) coaching behavior were all predictive of athletes' perceptions of their coach's effectiveness. Next, Chapter 3 focused on outcomes of athlete perceptions of their coach, showing such perceptions of coaching effectiveness were predictive of athlete-level outcomes representing all four of the key outcomes (i.e., competence, confidence, connection, and character) proposed by Côté and Gilbert (2009). This was shown in two separate samples of athletes representing a range of team and individual sports, one from the UK and one from Malaysia. Then, Chapter 4 investigated whether athletes' perceptions of coaching effectiveness mediated longitudinal predictive effects of perceptions of coach's transformational leadership behavior on three different athlete outcomes. This study demonstrated the longitudinal predictive effects of appropriate role model behaviour on antisocial teammate behavior and individual consideration behavior on trust were mediated by athletes' perceptions of their coach's effectiveness in character building and motivation, respectively. Finally, Chapter 5 discusses the contributions of the thesis as a whole, and proposed key limitations of the work and future directions. The findings of the present thesis extend the coaching effectiveness literature by furthering our understanding on antecedents and outcomes of coaching effectiveness in team and individual sport, as well as the possible processes involved.

I dedicate this thesis to my parents, Mohd Kassim Latin and Siti Jamilah Jaya, my wife, Siti Hasmah Hassan and my daughters Nur Khadeeja Humaira, Nur Khaleeda Hafiya and Nur Khayra Hana for their endless love, support, and encouragement during all these years.

AUTHOR DECLARATION OF ORIGINALITY

I declare that this is a true copy of my thesis, including any final revisions, as approved by my thesis committee and the School of Sport, Exercise and Rehabilitation Sciences.

This thesis has not been submitted for a higher degree to any other University of Institutions.

Ahmad Fikri Mohd Kassim

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CONFERENCE PRESENTATIONS

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2. **Mohd Kassim, A.F.**, Boardley, I.D. (2015, July). *Coach Effectiveness and Transformational Leadership in Sport: Effects of Gender and Athlete Experience.* Poster presented at 14th European Congress of Sport Psychology (FESPSAC), Bern, Switzerland.
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6. **Mohd Kassim, A.F.**, Boardley, I.D. (2017, August). *Do Athletes' Perceptions of their Coach's Motivation Effectiveness Mediate Longitudinal Effects of Individual Consideration on Trust?* Oral presentation at The Second International Conference on the Future of Asean (ICOFA2017), Universiti Teknologi MARA, Perlis, Malaysia.

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GENERAL INTRODUCTION

Introduction

Sport coaches are responsible for innumerable aspects of athletes' learning and development, and as such, effective coaching can be extremely complex. It is therefore important that researchers look to identify factors that influence coaching effectiveness, as well as key outcomes that stem from it. The current line of research looked to contribute to this area of knowledge by investigating antecedents and outcomes of athletes' perceptions of coaching effectiveness across three studies. Throughout this line of research, coaching effectiveness is defined as the degree to which coaches can apply their knowledge and skills to positively influence the learning and performance of their athletes (Boardley, Kavussanu, & Ring, 2008).

Athletes' perceptions of coaching effectiveness can be seen as representing a contextually informed picture of coaching. According to Langley (1997), coaching is a social process in which coaches and players influence one another, as well as both being influenced by environmental factors present in the specific coaching context. Research to date on coaching effectiveness has primarily focused on identifying the coaching characteristics, leadership styles, and behavioral patterns that are most effective in developing physical performance. However, since coaches affect not only their athletes' physical performance but also their psychosocial development, it is important for coaches to be effective in all areas relevant to coaching, and not just those directly linked to sport performance. Thus, coaching effectiveness is viewed presently as encompassing roles and responsibilities relevant to athletes' physical, psychological, moral, and tactical development (Franks, Sinclair, Thompson & Goodman, 1986).

The roles adopted by sport coaches are wide-ranging and complex due to the need to positively influence athletes' performance and well-being. Coaches assist and make

significant contribution to athletes' learning and improvement. Sport coaches exhibit their particular ability by adopting patterns of behavior that are most effective in improving athletes' learning and performance (Horn, 2008). For instance, by understanding the processes involved in athlete development, coaches can adopt behaviors most conducive to achieving desired psychosocial and performance improvements with athletes. Therefore, effective coaches should develop athletes in all aspects of their psychosocial and performance outcome development (Horn, 2002).

In sport, coaches are very influential figures, and engage in a wide range of roles (Jones, Housener & Kornspan, 1997). Effective coaches may be required to occupy many roles within the lives of their athletes including behavioral outcomes and leadership. For instance, effective coaches are able and prepared to meet the individual needs of their athletes and realize that they can make a difference to athlete and team outcomes through the coaching behaviors and styles they adopt. Moreover, coaches need to be able to prepare for a wide range of situations and act as role models to their athletes. Furthermore, coaches have to develop functional relationships with their athletes, encourage athletes to be decisive, and cultivate athletes' potential in sport (Lyle & Cushion, 2010). Hence, an extremely diverse range of appropriate coaching behaviors are required if a coach is to be effective in his/her role.

Côté and Gilbert (2009) presented an integrative definition of coaching effectiveness, which depicts how effective coaching requires a diverse blend of professional, interpersonal, and intrapersonal knowledge to effectively cultivate athletes' competence, confidence, connection, and character. Therefore, effective coaches can impact upon athlete's growth and learning through appropriate education, leadership, guidance, counselling, and sport activities (Ivey, Andrea & Ivey, 2012; Nohria & Khurana, 2010). Effective coaching also has the potential to develop athletes' confidence and character through relational factors (Moen,

2010). Further, coaches also have the potential in and out of the training and competition to develop athletes' attention and respectful behaviors by increasing athletes awareness of the learning process (Kappenberg, 2008).

Horn's (2008) Model of Coaching Effectiveness

Horn (2008) presented a model of coaching effectiveness that highlights the central role of athletes' perceptions of their coach's behaviors in determining coaching effectiveness. According to Horn (2008), coaches play a key role in athlete learning and have a major impact on athletes' development and behavior. Moreover, coaching effectiveness can be determined through both successful performance outcomes (e.g., win-loss percentages, player development, and success at national/international level) and athletes' positive psychological responses to coaching. Further, coaches' abilities to achieve such outcomes are influenced by specific coaching characteristics, competencies, cognitions and patterns of behavior most conducive to athlete learning and performance in a specific context.

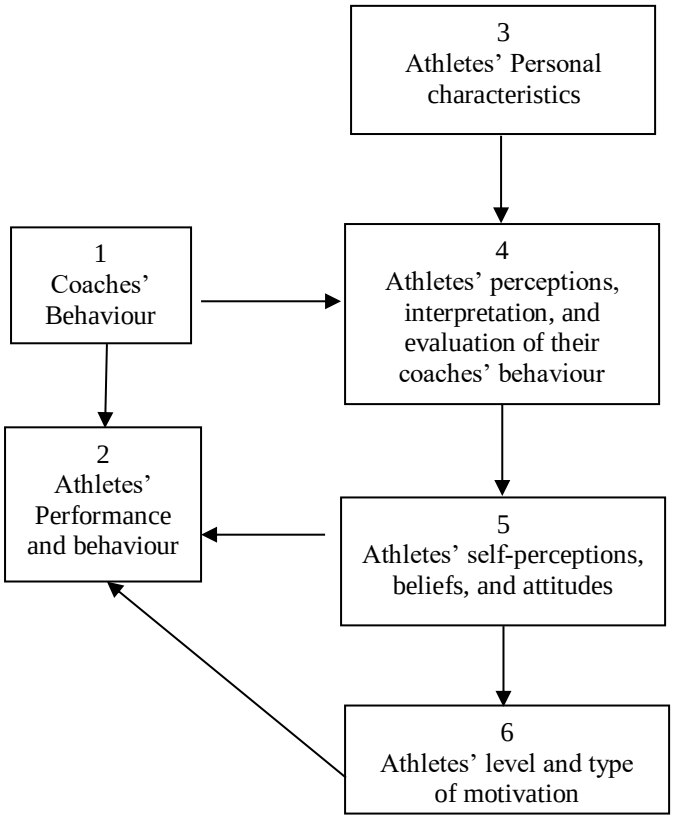


Figure 1.1: *Key Aspects of Horn's (2008) Model of Coaching Effectiveness*

Figure 1.1 illustrates the key components of Horn's (2002) model that are of relevance to the effect of coach behavior on coaching effectiveness. These components highlight the direct and indirect effects of coaching behavior on coaching effectiveness, outlining the complex process by which athletes are influenced by their coaches both cognitively and behaviorally. Specifically, on the left (Box 1), identifies the combination of coaches' behaviors. Within this current research, coaches' behaviors include the behaviors of the coaches' exhibit in the sport setting. Second, (Box 2), involved athletes performance and behavior. Next, Box 3 represents athlete characteristics, which in turn influence athletes' perceptions, interpretation, and evaluation of their coaches' behavior (Box 4), which then impact upon athletes' own self-perceptions, beliefs, and attitudes (Box 5). Subsequently, these then influence athletes' performance and behavior (Box 2) both directly and indirectly via athletes' level and type of motivation (Box 6). Overall the model demonstrates how athletes can perceive and interpret a coach's behavior idiosyncratically, which means one set of coach behaviors can influence one particular athlete's self-perceptions, performance, and behavior differently to another's.

The Coaching efficacy model

Another model that has proved useful in guiding research on coaching effectiveness is the coaching efficacy model, conceptualized by Feltz and colleagues (1999) and based upon the tenets of Bandura's theory of self-efficacy (1997; see Figure 1.2 for model). Coaching efficacy was defined as the extent to which coaches believe they have the capacity to positively influence athletes' learning and performance (Feltz, et al., 1999). Coaching efficacy was proposed to be multidimensional, consisting of sub-dimensions relevant to motivation, game strategy, technique, and character building. Motivation efficacy relates to coaches' ratings of their ability to develop the psychological skills and motivational states of

the athletes they coach. Game strategy efficacy represents coaches' assessments of their ability to lead and coach athletes to a successful performance during competition. Technique efficacy concerns coaches' evaluations of their coach's instructional and diagnostic abilities. Finally, character-building efficacy pertains to coaches' perceptions of their ability to influence athletes' personal development and positive attitudes toward sport.

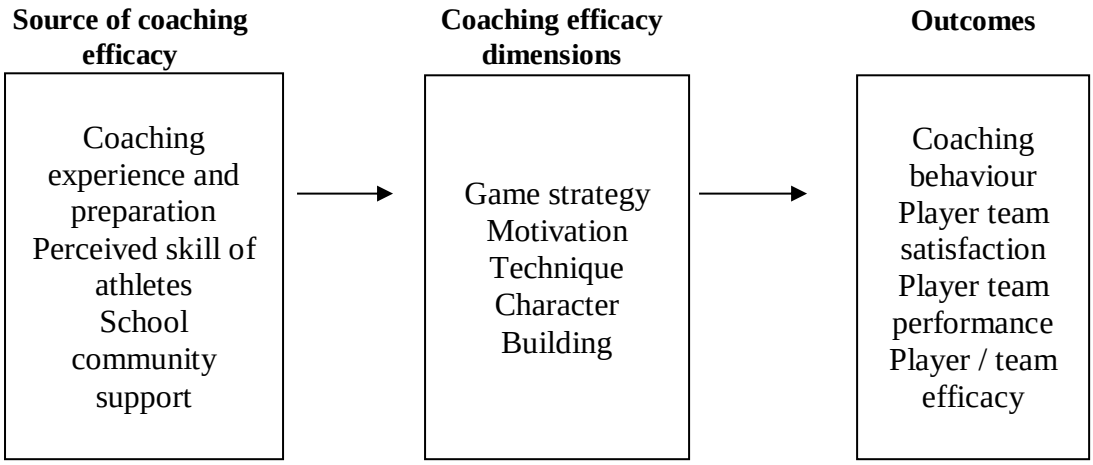


Figure 1.2: *The conceptual model of coaching efficacy (Feltz et al., 1999)*

Effective coaches exert their influence on athletes through their coaching behaviors as well as athletes' perceptions of these (Horn, 2002; Smoll & Smith, 1989). As such, athletes' perceptions of their coaches' behaviors is a key basis upon which athletes' form judgments regarding coaching effectiveness (Horn, 2002; Smoll & Smith, 1989). According to the model (see figure 1.2 Conceptual Model of Coaching Efficacy), consists of four dimensions; game strategy efficacy belief in ability to coach during competition, motivation efficacy belief in ability to affect the psychological skills and states of one's athletes, technique efficacy belief in ability to instruct skills and diagnose skill problems, and character building efficacy belief in ability to influence a positive attitude towards sports and good sportsmanship. Thus coaching efficacy dimensions are reliable to affect coach effectiveness and the, coaching effectiveness may have an effect to consistency of coaching roles.

According to the model, coaching efficacy should lead to numerous positive outcomes for both coaches and athletes. For instance, coaches' efficacy beliefs are expected to have a significant impact on maximizing the achievement of their goals as well as those of the athletes. Further, coaching behaviors such as the quality and types of feedback they provide and management strategy and style are also thought to be influenced by coaching efficacy. In addition, teams are expected to perform better when coached by efficacious coaches because they are more motivational, have better tactical knowledge, are more committed, and have greater concern for the development of athlete character.

Empirical research has shown considerable support for the model. For instance, athletes from basketball (Feltz et al., 1999; Myers, Vargas-Tonsing, & Feltz, 2005), softball, baseball, and soccer (Myers et al., 2005) coached by high-efficacy coaches reported higher satisfaction with their coach and also had a higher winning percentage than did those coached by low-efficacy coaches. Further, coaching efficacy has emerged as a significant predictor of team efficacy in volleyball players (Vargas-Tonsing, Warners, & Feltz, 2003). Therefore, these positive athlete-related outcomes associated with coaching efficacy suggest that high-efficacy coaches may be more effective than are those with low efficacy in that they are able to produce desired outcomes in athletes.

Coaching effectiveness has been extensively investigated using the coaching efficacy model. Importantly, the dimensionality of the original coaching efficacy model has been supported when this framework has been used to assess athletes' perceptions of their coach's effectiveness (Boardley et al., 2008; Kavussanu, Boardley, Jutkiewicz, Vincent, & Ring, 2008). This model consists of four sub-dimensions of coaching effectiveness. Motivation effectiveness relates to athletes' ratings of their coach's ability to develop the psychological skills and motivational states of the athletes they coach. Game strategy effectiveness represents athletes' assessments of their coach's ability to lead and coach athletes to a

successful performance during competition. Technique effectiveness concerns athletes' evaluations of their coach's instructional and diagnostic abilities. Finally, character-building effectiveness pertains to athletes' perceptions of their coach's ability to influence athletes' personal development and positive attitudes toward sport.

Empirical research applying Feltz et al.'s (1999) to the study of coaching effectiveness as produced a number of interesting findings. For instance, Boardley et al. (2008) found rugby union players' perceptions of their coach's effectiveness predicted numerous athlete-level outcomes. More specifically, perceptions of: (a) coach's motivation effectiveness positively predicted players' effort, commitment, and enjoyment, (b) technique effectiveness positively predicted players' task self-efficacy, and (c) character building effectiveness positively predicted players' prosocial behavior.

Integrating Horn's model and the coaching efficacy model

By integrating key aspects of Horn's model with the coaching efficacy model, it is possible to propose that coaching efficacy influences athlete learning and development through athletes' perceptions of their coach's behavior (see Boardley et al., 2008; Myers et al., 2006). Consistent with this proposition, researchers have demonstrated that the dimensional structure from the coaching efficacy model can be identically replicated when assessing athletes' perceptions of their coach's competency (Myers et al., 2006), effectiveness (Boardley et al., 2008), and efficacy (e.g., Boardley at al., 2015). Moreover, given their greater proximity to athlete outcomes in comparison to coach efficacy beliefs, researchers interested in athlete outcomes proposed in the coaching efficacy model may be well served by assessing athletes' perceptions of their coach on the four dimensions proposed in the coaching efficacy model.

As alluded to above, three different athlete perceptions based on the dimensional structure of the coaching efficacy model have been studied to date. The first of these was

athletes' perceptions of their coach's efficacy. For instance Short et al. (2004) identified coaches rated their coaching efficacy on the four dimensions higher than their athletes did. Also, Boardley, Jackson, and Simmons (2015) identified positive links between golfers' perceptions of their coach's motivation efficacy and golfers' golf self-efficacy. Researchers have also assessed athletes' perceptions of their coach's effectiveness. For example, Kavussanu et al. (2008) found years of sport experience negatively predicted athletes' perceptions of their coach's technique effectiveness. Then, Boardley et al. (2008) found athletes' perceptions of their coach's character building effectiveness predicted athlete outcomes such as self-efficacy and prosocial behavior in male rugby-union players. Finally, athletes' perceptions of their coach's competency (i.e., athletes' evaluations of their head coach's ability to positively affect athletes' learning and performance; Myers, Feltz, Maier, Wolfe, & Reckase, 2006) on the four dimensions have also been studied. In this work, Myers et al. (2006) showed athletes' perceptions of their coach's motivation competency were a positive predictor of athletes' satisfaction with their coach.

Although the distinction between these three perceptions may be marginal, it is possible that perceptions of effectiveness have greater predictive ability that those of competency and efficacy because of the greater emphasis on outcome. More specifically, whilst perceptions of competency and efficacy focus on coach's inherent capabilities in the four areas of coaching, those for effectiveness center of athletes' evaluations of the outcomes coaches' can generate with these capabilities. The practical advantage of taking this perspective is the increased importance placed on coaches' producing desirable outcomes rather than merely having the ability to do so (Shields, Gardner, Bredemeier, & Bostro, 1997). In addition, the majority of coaching effectiveness research typically operationally defines coach effectiveness in terms of outcome scores or measures (see Horn, 2008). For these reasons, in the current thesis the decision was taken to assess athletes' perceptions of

coach effectiveness, as opposed to efficacy or competency (see Figure 1.3 for revised conceptual framework).

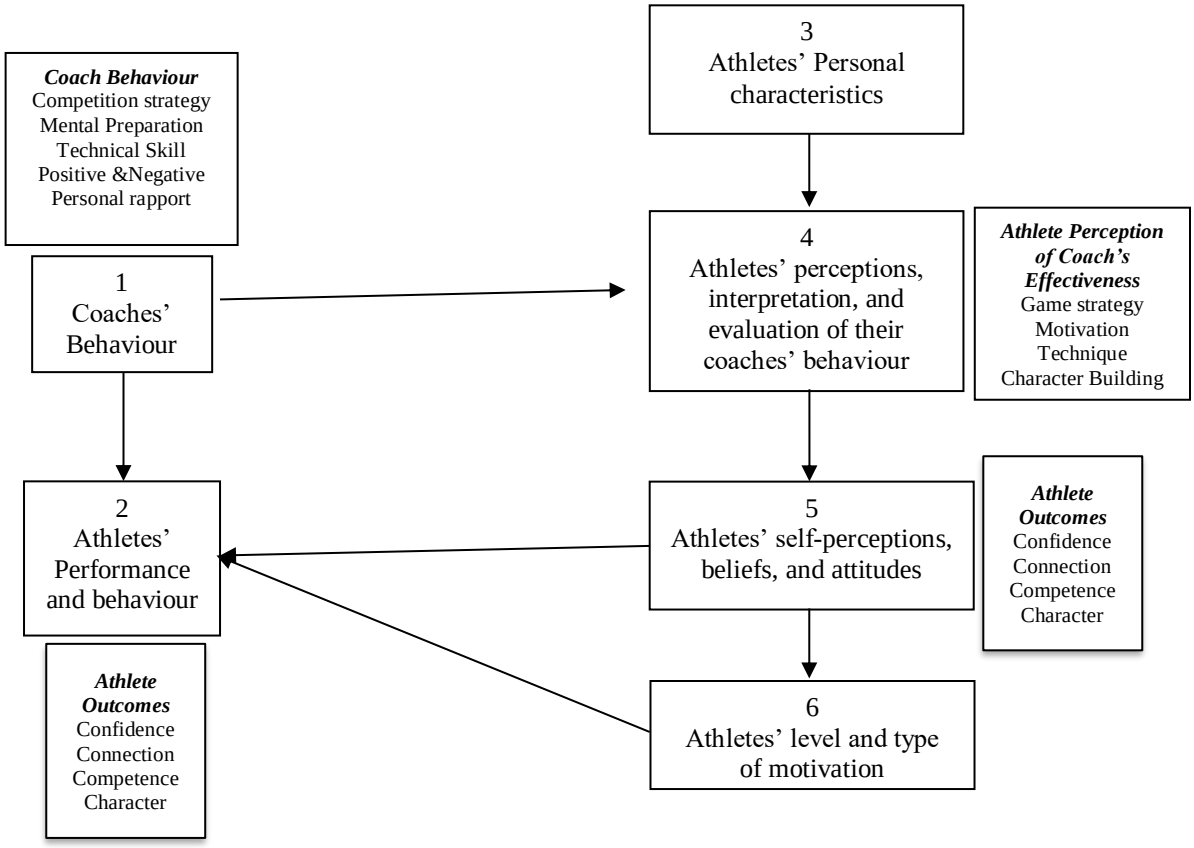


Figure 1.3*: Revised conceptual framework (Adapted from Horn's model)*

Côté and Gilbert's (2009) Integrative Definition of Coaching Effectiveness

Another key contribution to research in this area was the work of Côté and Gilbert (2009), who presented an integrated definition of coaching effectiveness. Specifically, they defined coaching effectiveness as the consistent application of integrated professional, interpersonal and intra-personal knowledge to improve athlete's competence, confidence, connection and character in specific coaching contexts. As such, Côté and Gilbert (2009) propose three base components underpin coaching effectiveness: coaching knowledge, athlete outcomes, and the coaching context. In terms of coaching knowledge, they identified three main types: professional, intrapersonal, and interpersonal. Then, they proposed four athlete

outcomes that should stem from effective coaching: competence, confidence, connection, and character. Finally, they identified four specific coaching contexts in which coaching effectiveness should be evaluated: participation coaching for children, participation coaching for adolescents and adults, performance coaching for young adolescents, and performance coaching for older adolescents and adults. Importantly, particular athlete outcomes were specified for each of these four contexts, suggesting the nature of coaching effectiveness differs depending on the specific context in which coaching occurs.

Consistent with the definition of coaching effectiveness presented earlier, the definition of Côté and Gilbert (2009) incorporates athlete-level outcomes (i.e., connection, confidence, competence, and character) within it. First, Côté and Gilbert (2009) proposed connection represents the development of positive bonds and social relationships with people inside and outside of sport. In turn, confidence was defined as athletes' sense of overall positive self-worth. Next, competence was proposed to represent athletes' abilities in sport-specific technical and tactical skills, performance skills, health and fitness and adopting healthy training habits. Finally, character was forwarded as representing respect for the sport and others (morality), integrity, empathy and responsibility. In general, Côté and Gilbert (2009) adopted broader definitions for the four outcomes of effective coaching than have traditionally been adopted in the sport literature, perhaps reflecting their position that coaching effectiveness extends beyond the impact of coaching within the environment in which it occurs.

Cote et al.'s (1999) Model of Coach Behavior

As discussed earlier, coaching behaviors are thought to influence athlete outcomes via athletes' perceptions of such behaviors (Horn, 2008). A model of coaching behavior with the potential to frame athletes' perceptions of coach behavior was developed by Côté, Yardley, Hay, Sedgwick, and Baker (1999). This model proposes seven dimensions of coach

behavior relating to training, competitive and organizational settings. The specific categories of coach behavior are physical training and planning (i.e., coach involvement in the athlete physical training and planning for training and competition), technical skills (i.e., coach feedback, demonstration and cues), mental preparation (i.e., how the coach helps athletes to perform under pressure, stay focused and be confident), goal setting (i.e., coach involvement in the identification, development, and monitoring of athlete goals), competition strategies (i.e., coach interaction with athletes and feedback to athletes during competition), positive personal rapport (i.e., coach approachability, availability and understanding) and negative personal rapport (i.e., use of negative techniques such as fear and yelling). Thus, this model of coach behavior distinguishes the key operational aspects of coaching relating to preparation for competition and training.

The four dimensions of coaching effectiveness discussed earlier are all conceptually linked with one or more of the behavior categories proposed by Côté et al. (1999). For example, it is reasonable to expect athletes perceiving more frequent technical skill coach behaviors would rate their coach's technique effectiveness higher (Feltz et al., 1999). More specifically, athletes who consider they receive frequent specific feedback for correcting technical errors and reinforcement about correct technique should view their coaches as effective in their instructional and diagnostic abilities. Second, coaches seen to be engaging more frequently in goal setting and mental preparation behaviors should be perceived as having greater motivation effectiveness (Feltz et al., 1999). More precisely, coaches who engage in behaviors such as helping athletes to set objectives or aims and providing advice on how to perform under pressure and stay confident are likely to view their coach as more effective in influencing athletes' psychological skills and states. Third, coaches who engage more frequently in behaviors relating to competition strategies should be considered to be more effective in game strategy effectiveness (Feltz et al., 1999). Explicating this proposition,

a coach who regularly helps athletes to prepare to face a variety of situations and keep focused during competition should be viewed as more effective in coaching and guiding their athletes to successful competitive performances. Finally, a high and low frequency, respectively, of positive and negative personal rapport behaviors should lead coaches to be viewed as more effective in character building. Specifically, coaches who demonstrate good listening skills and show concern for athletes' development beyond sport and do not use fear and aggression should be considered more effective in their abilities to influence athletes' personal development and positive attitude toward sport (Feltz et al., 1999).

Several researchers have studied the influence of coach behaviors on the development of sport settings. For example, coaching behaviors have been linked with increased self-esteem, enjoyment, and intention to continue participating in sport among youth athletes (Conroy& Coatsworth, 2006). Previous studies also had recognized that coaching behavior highly influence athletes' motivations and performance of the athletes (Feltz et al., 1999; Moritz, Feltz, Fahrbach, & Mack, 2000). Further, coach behavior has been linked with athlete's satisfaction (Fraser Thomas & Côté, 2009). Further, the contextual antecedent factors of coaching behavior may link to coaching efficacy dimensions. The linked between them empowered linkage that may theoretical benefits athletes learning and development in sports setting (see Figure 1.3 for revised conceptual framework).

Transformational leadership

Transformational leadership is defined as leaders' abilities to inspire, empower, and facilitate others' achievement of an enhanced degree of performance (Avolio & Bass, 1995). When applied to sports coaching, transformational coaches inspire the athletes they coach to imagine possibilities instead of limits. According to Bass (1995), there are four key dimensions of transformational leadership behavior. First, *idealized influence* can be defined as being an exemplary role model who inspires trust and respect. This dimension is often

referred to as ‘charismatic’ leadership and is often considered the most significant dimension. Then, *inspirational motivation* involves motivating followers to commit and work towards a clear vision, and to perform above their normal level. Third, *intellectual stimulation* represents challenging normal practices and advancing invention and creativity in followers. Finally, *individual consideration* pertains to the ability to on a one-to-one basis by understanding and addressing the needs of each individual.

Based on the above, coaches who frequently use transformational behaviors may be effective in helping athletes exceed and reach beyond their preconceptions regarding their potential by transforming their beliefs and attitudes. Support for this can be seen in research showing coach transformational leadership behavior is positively correlated with the effort that athletes put into training (Rowold, 2006), and is positively linked with athletes achieving skill levels and motivation beyond expectations (Jung & Sosik, 2002). Empirical research has also revealed transformational leaders stimulate athletes to develop skill and enhances motivation beyond expectation (Jung & Sosik, 2002). In addition, coach transformational behavior has been positively linked with follower satisfaction and commitment (Saybani, Yusof, Soon, Hassan, & Zardoshtan, 2013) stronger relationships between coaches and athletes (Tovell & Gravelle, 2009), and performance (Charbonneau, Barling, & Kelloway, 2001). As such, the potential usefulness of transformational leadership behavior to sport coaching has been supported in empirical research.

Given the positive outcomes linked with it, transformational leadership behavior has the potential to enhance our understanding of coaching effectiveness. As explicated earlier, Horn’s (2008) working model of coaching effectiveness identified how coach behavior may influence athlete outcomes through athletes’ perceptions of their coach’s behavior. Thus, athlete judgments of coaching effectiveness may be influenced by the frequency with which their coach engages in transformation leadership behaviors. Further, heightened perceptions

of coaching effectiveness due to increased frequency of transformational behaviors may result in increased athlete learning and development. This possibility is supported by Côté and Gilbert (2009), who propose coaching effectiveness is a process of inspiring leadership. Although it is possible to establish conceptual links between athletes' perceptions of transformational coaching behaviors and coaching effectiveness, to our knowledge no study has investigated these potential links through empirical research.

Coaches who demonstrate transformational behaviors may demonstrate effectiveness in their ability to help athletes exceed their preconceptions of their potential. More specifically, leaders who demonstrate transformational behavior appear to stimulate and inspire followers to achieve beyond initial performance expectations by transforming their beliefs and attitudes (Charbonneau et al., 2001). As such, transformational-leadership behaviors are important to investigate in research investigating athletes' perceptions of coaching effectiveness as they have the potential to aid our understanding of how sport coaches can strengthen the leader-follower relationship, and stimulate and enhance followers' learning.

It is possible to establish conceptual links between a number of transformational-leadership behaviors and dimensions of coaching effectiveness. First, athletes' perceptions of a coach's individual-consideration behavior are likely to be positively linked with perceptions of the coach's motivation effectiveness. Specifically, when coaches display behaviors such as displaying understanding, trust, and address the needs of individuals, it is likely athletes will in general experience more optimal motivational states and feel better prepared mentally. As a result, such athletes should rate their coach more highly on motivation effectiveness. Second, coaches seen to be engaging more frequently in appropriate role-model behaviors should be rated more highly on character-building effectiveness. More precisely, coaches who are observed demonstrating desirable moral qualities on a regular basis may well be seen

as effective in influencing athletes' personal development and positive attitude toward sport. Third, coaches who engage more frequently in intellectual-stimulation behaviors could be perceived as more effective in game strategy and technique. More specifically, coaches who engage frequently in behaviors that challenge normal practices, advance invention, and reflect creativity are more likely to be considered effective in helping athletes prepare to face a variety of match situations and maintain focus during competition. Moreover, they should on average be viewed as effective in their instructional and diagnostic abilities.

Previous literature has shown that transformational leadership behavior may lead to important relations developing between coaches and athletes (Tovell & Gravelle, 2009). For example, transformational leadership behaviors may increase athletes' sport commitment (Saybani et al., 2013) and task motivation (Charbonneau et al., 2001). Coaches' transformational leadership behaviors may also increase athletes' capacity to learn new things (Conroy & Coatsworth, 2006). Empirical research supports the proposition that coaches' transformational leadership behaviors stimulate skill development and enhance motivation in athletes (Jung & Sosik, 2002). Transformational leadership behavior has also being linked with coaches' role model behavior, responsibility to others, setting goals, problem solving, and creative thinking (Charbonneau et al., 2001). Empirical research on transformational leadership with adolescent athletes has found that perceptions of coach transformational leadership behavior predict athlete outcomes at both an individual and team level (Price & Weiss, 2011). Thus, coach transformational leadership behavior may be important to our understating of effective coaching (Saybani et al., 2013).

Overall thesis aims and hypotheses

Based upon the arguments presented above, a line of research based upon athletes' perceptions of their coach was developed to investigate antecedents and outcomes of coaching effectiveness. More specifically, this doctoral research encompassed three empirical

studies to pursue the study of athletes' perceptions of their coach's effectiveness based on the four dimensions from the coaching efficacy model. The first of these studies investigated possible antecedents of coaching effectiveness in team and individual sports. Specifically, it investigated whether: a) sport experience, coach/athlete sex and sex mismatch predicted athletes' perceptions of their coach's effectiveness on the four dimensions of effectiveness, b) athletes' perceptions of coaching effectiveness differed between team and individual sports, and c) the four dimensions of coaching effectiveness were predicted by athletes' perceptions of conceptually related coach behaviors. The second study then investigated athletes' perceptions of coaching effectiveness and athlete-level outcomes in team and individual sports in two separate cultures. Here, the specific aim was to determine whether athletes' perceptions of their coach's effectiveness on the four coaching efficacy dimensions predicted variables representing athletes' competence, confidence, connection and character in England and Malaysia. The final study considered whether athletes' perceptions of their coach's effectiveness mediated longitudinal relations between transformational leadership behavior and athlete-level outcomes. Specifically, this study aimed to examine whether athletes' perceptions of their coach's character building and motivation effectiveness, respectively, mediated effects of coach appropriate role model and individual consideration behavior, on antisocial behavior and trust, respectively.

Specifically, for the first study (Chapter 2) we hypothesized: (a) athletes' perceptions of their coach's motivation and character building effectiveness would be negatively predicted by sport experience and mismatch in sex between athlete/coach, but that there would be no effect of sex or sport type (i.e., team/individual) on such perceptions, (b) athletes' perceptions of their coach's game strategy effectiveness would be negatively predicted by sport experience, but that there would be no effect of mismatch in sex between athlete/coach, sport type and sex on such perceptions, (c) athletes' perceptions of their

coach's technique effectiveness would be negatively predicted by sport experience, but that there would be no effect of mismatch in sex between athlete/coach and sex on such perceptions, (d) athletes' perceptions of coaching effectiveness would differ between team- and individual-sport athletes, and (e) athletes' sex would not be a predictor of athletes' perceptions of coaching effectiveness for any dimension of effectiveness. In the same study, we also we hypothesized: (f) perceptions of technical skill behaviors would positively predict technique effectiveness, (g) perceptions of goal setting and mental preparation behaviors would positively predict motivation effectiveness, (h) perceptions of competition strategy behaviors would positively predict game strategy effectiveness, and (i) perceptions of positive and negative personal rapport behaviors, respectively, would positively and negatively predict character building effectiveness.

For the second study (Chapter 3), we hypothesized: (a) athletes' perceptions of their coach's motivation effectiveness would positively predict athletes' perceptions of the coach-athlete relationship, (b) athletes' perceptions of their coach's motivation effectiveness would positively predict athletes' sport confidence, (c) athletes' perceptions of their coach's technique effectiveness would positively predict athletes' perceptions of their sport competence, and (d) athletes' perceptions of their coach's character building effectiveness would positively predict athletes' moral identity between athletes from the UK and Malaysia.

Then, for Study 3 (Chapter 4) we hypothesized (a) character building effectiveness at Time 1 would mediate a negative effect of perceptions of coach appropriate role model at Time 1 on antisocial opponent behavior at Time 2, (b) character building effectiveness at Time 1 would mediate a negative effect of perceptions of coach appropriate role model behavior at Time 1 on antisocial teammate behavior at Time 2 and (c) motivation effectiveness at Time 1 would mediate a positive effect of perceptions of coach individual consideration behavior at Time 1 on trust at Time 2.

COACHING EFFECTIVENESS AND ATHLETE BEHAVIOR IN TEAM AND INDIVIDUAL SPORTS

Abstract

This research aimed to investigate whether: a) sport experience, coach/athlete sex and sex mismatch predicted athletes' perceptions of their coach's effectiveness on four dimensions of effectiveness, b) athletes' perceptions of coaching effectiveness differed between team and individual sports, and c) the four dimensions of coaching effectiveness were predicted by athletes' perceptions of conceptually related coach behaviors. Male (n=150) and female (n=147) athletes from team and individual sports completed questionnaires assessing athletes' perceptions of their coach's effectiveness and behavior. Results revealed, a) sex predicted three dimensions of coaching effectiveness, such that perceptions of motivation, technique and character building effectiveness were higher in females than males, b) perceptions of motivation, technique and character building effectiveness were higher in individual-sport athletes than team-sport athletes, and c) all four dimensions of coaching effectiveness were predicted by conceptually related coach behaviors. This study identified a wide range of antecedents of coaching effectiveness, partially supports past research and provides support for the contention that athletes' perceptions of coaching effectiveness are based upon observations of coach behavior.

Keywords*: Coaching effectiveness, athlete behavior, individual and team sport*

Introduction

Coaches are central figures in athletes' lives with considerable potential to influence athletes' learning and performance, and the effectiveness of sport coaches is therefore an important consideration in research investigating athlete development (Côté & Gilbert, 2009). Importantly, past research has identified how athlete and coach attributes may influence athletes' perceptions of their coach's effectiveness (Kavussanu, Boardley, Jutkiewicz, Vincent & Ring, 2008). In addition, models of coaching effectiveness suggest athletes' perceptions of their coach's effectiveness may be based upon their perceptions of their coach's behavior (Horn, 2002; Smoll & Smith, 1989). The primary aim of the current study was to look to replicate aspects of past research on coaching effectiveness, and to investigate whether athletes' perceptions of their coach's behavior are predictive of their perceptions of their coach's effectiveness.

One model that has been used successfully to investigate athletes' perceptions of their coach's effectiveness is the coaching efficacy model of Feltz, Chase, Moritz, and Sullivan (1999). Feltz et al. (1999) defined coaching efficacy as the extent to which coaches believe they have the capacity to impact the learning and performance of athletes, identifying four sub-dimensions: motivation, game strategy, technique and character building. First, motivation efficacy represents coaches' confidence in their ability to impact the psychological skills and states of their athletes. Second, game strategy efficacy refers to coaches' belief in their capacity to coach and guide their team to a successful performance during competition. Next, technique efficacy signifies coaches' beliefs regarding their instructional and diagnostic skills. Finally, character building efficacy pertains to coaches' beliefs in their ability to influence their athletes' personal development and positive attitude toward sport.

As indicated above, researchers have successfully applied the coaching efficacy model to the investigation of athletes' perceptions of their coach's effectiveness. Across two studies Boardley, Kavussanu and Ring (2008) and Kavussanu et al. (2008) provided evidence supporting the applicability of the original dimensionality of the coaching efficacy model when assessing athletes' perceptions of their coach's effectiveness. As such, the coaching efficacy model represents a viable framework for researchers looking to investigate athletes' perceptions of their coach's effectiveness.

In their research with 291 British university athletes from eight individual and seven team sports, Kavussanu et al. (2008) identified some key predictors of athletes' perceptions of their coach's effectiveness based upon the coaching efficacy model. First, consistent with the relevant study hypotheses they found sport experience negatively predicted all four dimensions of coaching effectiveness; in general, the more experience an athlete had the lower they rated their coach's effectiveness. This was explained through the supposition that increased sport experience is likely associated with exposure to a greater number of coaching styles and behaviors that may facilitate criticality of coaches in athletes. Second, they found mismatch in sex between an athlete and coach negatively predicted perceived motivation and character building coaching effectiveness such that when athletes were coached by someone of the opposite sex there was an overall tendency to rate the effectiveness of the coach lower on these two dimensions. These findings were consistent with research showing female athletes report more frequent positive feedback and encouragement from female coaches compared to male coaches, and more frequent structure-based and organizational behaviors in male coaches compared to female coaches (Frey, Czech, Kent, & Johnson, 2006).

In contrast to their findings relating to coach-athlete sex mismatch, Kavussanu et al. (2008) found no effect of athlete sex on athletes' perceptions of their coach's effectiveness for any of the four dimensions. This was not consistent with the study hypotheses, which

were based upon research showing sex differences in athletes' perceptions of coach behavior. More specifically, Hollembeak and Amorose (2005) found male athletes perceived autocratic coach behaviors to be more prevalent and democratic coach behaviors to be less prevalent than female athletes. Further, Gardner, Shields, Bredemeier, and Bostrom (1996) reported that young male baseball/softball players perceived greater frequency of autocratic, training and instruction, social support, and positive feedback behaviors than female players. In addition, models of coaching effectiveness also describe how athlete sex may influence athletes' perceptions of their coach's behavior (Horn, 2002; Smoll & Smith, 1989).

Kavussanu et al. (2008) also found individual-sport athletes rated their coaches as more effective in technique effectiveness than team-sport athletes. However, team and individual-sport athletes did not significantly differ on their ratings of their coach's effectiveness for the other three dimensions of effectiveness. Although no specific hypotheses were set for these analyses, it is possible athletes from individual sports receive more one-on-one coaching than those from team sports, and as a result experience more frequent behaviors such as coaching individual players on technique which contribute to perceptions of technique effectiveness (cf. Kavussanu et al., 2008).

Clearly, the work of Kavussanu et al. (2008) resulted in some interesting findings relating to predictors of athletes' perceptions of coach effectiveness. However, to date these findings have not been replicated in a separate sample. Further, some of the findings (e.g., those pertaining to sex differences) were counter to the study hypotheses and appear to contradict existing evidence and existing models of coaching effectiveness. As such, one overarching aim of the current study was to attempt to replicate the findings of Kavussanu et al. (2008) relating to the prediction of coaching effectiveness using a separate sample.

One yet untested assumption that has underpinned research applying the coaching efficacy model to the investigation of athletes' perceptions of coaching effectiveness is that

such perceptions are based upon athletes' observation of relevant coaching behaviors (see Boardley et al., 2008; Kavussanu et al., 2008). This assumption was based on models of coaching effectiveness that propose athletes' perceptions of their coach's effectiveness are based largely on the coaching behaviors they observe (Horn, 2008). A model of coaching behavior suitable for the investigation of potential links between perceptions of coaching effectiveness and coach behavior is that proposed by Côté, Yardley, Hay, Sedgwick and Baker (1999). This model proposes seven dimensions of coach behavior relating to training, competitive and organizational settings. The specific categories of coach behavior are physical training and planning (i.e., coach's involvement in the athlete's physical training and planning for training and competition), technical skills (i.e., refers to coaching feedback, demonstration, and cues), mental preparation (i.e., focusing on how the coach helps the athlete to perform under pressure, stay focused, and be confident), goal setting (i.e., the coach's involvement in the identification, development, and monitoring of the athlete's goals), competition strategies (i.e., focusing on the coach's interaction with athletes and the feedback they provide athletes during competition), coach positive personal rapport (i.e., the approachability, availability, and understanding of the coach), and coach negative personal rapport (i.e., coach's use of negative techniques such as fear and yelling).

The four dimensions of coaching effectiveness discussed earlier are all conceptually linked with one or more of the behaviors categories proposed by Côté et al. (1999). First, it is reasonable to expect athletes perceiving more frequent technical skill coach behaviors would rate their coach's technique effectiveness higher (Feltz et al., 1999). More specifically, athletes who consider they receive frequent specific feedback for correcting technical errors and reinforcement about correct technique should view their coaches as effective in their instructional and diagnostic abilities. Second, coaches seen to be engaging more frequently in goal setting and mental preparation behaviors should be perceived as having greater

motivation effectiveness (Feltz et al., 1999). More precisely, athletes who consider their coach to be effective in impacting their psychological skills and states are likely to have coaches who engage in behaviors such as helping athletes to set goals and providing advice on how to perform under pressure and stay confident. Third, coaches who engage more frequently in behaviors relating to competition strategies should be considered to be effective in game strategy effectiveness (Feltz et al., 1999). Explicating this proposition, a coach who regularly helps athletes to prepare to face a variety of situations and keep focused during competition should be viewed as more effective in coaching and guiding their athletes to a successful competitive performance. Finally, a high and low frequency, respectively, of positive and negative personal rapport behaviors should lead coaches to be viewed as more effective in character building. More specifically, coaches who demonstrate good listening skills and show concern for athletes' development beyond sport and don't use fear and aggression in their coaching should be considered more effective in their abilities to influence athletes' personal development and positive attitude toward sport (Feltz et al., 1999). However, to date these hypothetical links have not been tested in empirical research. As such, based upon the links proposed above, a second overarching aim of the current study was to investigate whether athletes' perceptions of specific categories of coach behavior predict conceptually related dimensions of coaching effectiveness.

The current research

As set out above, the present study had two overarching aims. The first of these was to attempt to replicate the findings of Kavussanu et al. (2008) relating to the prediction of coaching effectiveness using a separate sample. More specifically, we set out to examine whether sport experience, coach/athlete sex mismatch and sex predicted athletes' perceptions of their coach's effectiveness on the four dimensions of effectiveness. Based on past research and the findings of Kavussanu et al. (2008), we proposed and aimed to test the following

hypotheses. First, athletes' perceptions of their coach's motivation and character building effectiveness would be negatively predicted by sport experience and mismatch in sex between athlete/coach, but that there would be no effect of sex or sport type (i.e., team/individual) on such perceptions. Second, athletes' perceptions of their coach's game strategy effectiveness would be negatively predicted by sport experience, but that there would be no effect of mismatch in sex between athlete/coach, sport type and sex on such perceptions. Finally, athletes' perceptions of their coach's technique effectiveness would be negatively predicted by sport experience, but that there would be no effect of mismatch in sex between athlete/coach and sex on such perceptions. We also anticipated athletes from individual sports would report greater technique effectiveness for their coaches compared to athletes from team sports. Our hypotheses pertaining to sex differences were tentative though, given that the findings of Kavussanu et al. (2008) contrasted with evidence in the literature (Gardner et al., 1996; Holembeak & Amorose, 2005) and models of coach effectiveness (Horn, 2008; Smoll & Smith, 1989).

The second overarching aim of the study was to investigate whether athletes' perceptions of specific categories of coach behavior predict conceptually related dimensions of coaching effectiveness. Specifically, we hypothesized: (a) perceptions of technical skill behaviors would positively predict technique effectiveness, (b) perceptions of goal setting and mental preparation behaviors would positively predict motivation effectiveness, (c) perceptions of competition strategy behaviors would positively predict game strategy effectiveness, and (d) perceptions of positive and negative personal rapport behaviors, respectively, would positively and negatively predict character building effectiveness (Côté et al., 1999; Feltz et al., 1999; Horn, 2002; Smoll & Smith, 1989).

Method

Participants

Two hundred and ninety-seven athletes from three team (soccer, field hockey, rugby [*n* = 153]) and three individual (badminton, swimming, gymnastics/trampoline [*n* =144]) sports, including both male (*n* = 150) and female (*n* = 147) athletes, participated in the study. The sample contained athletes competing at local (*n* = 4), university (*n* = 161), regional (*n* = 64), national (*n* = 45) and international (*n* = 23) levels, whose ages ranged from 17 to 28 years (*M* = 19.98, *SD* =1.41). Sport experience ranged from three months to 18 years (*M* = 9.71, *SD* = 4.06) and athletes' time with their current coach ranged from three months to three years (*M* = 1.26, *SD* = .76). One hundred and one male athletes had a male coach, whereas 49 had a female coach. For female athletes, 92 had a female coach and 55 had a male coach.

Measures

Coaching effectiveness. An adapted version of the 24-item coaching efficacy scale (Feltz et al., 1999) was used to measure athletes' perceptions of their coach's effectiveness (Boardley et al., 2008). This scale measures four dimensions of coaching effectiveness: motivation (7 items), game strategy (7 items), technique (6 items), and character building (4 items). Athletes' were asked to rate how effective their coach was for the 24 items using an 11-point scale ranging from 0 (*not at all effective*) to 10 (*extremely effective*). The stem for all items was "How effective is your coach in his/her ability to…", and example items are "…maintain confidence in his/her players" (motivation), "…make critical decisions during competitions" (game strategy), "…detect skill errors" (technique), and "…instill an attitude of good moral character" (character building). Kavussanu et al. (2008) reported alpha coefficients of .93 for motivation, .88 for game strategy, .89 for technique, .86 for character building and provided evidence supporting the factorial validity of the adapted scale.

Coaching behavior. The 41-item Coaching Behavior Scale for Sport (CBS-S) was used to assess coaches' frequency on six types of coaching behaviors including technical skills [9 items], mental preparation [5 items], goal setting [6 items], competition strategies [7 items], positive personal rapport [6 items,] negative personal rapport [8 items,]) (Côté et al., 1999). Athletes rated their coach's frequency for each behavior using an 11-point scale ranging from 0 (*never*) to 10 (*always*). Examples items are "Provides me with immediate feedback" (technical skills), "Provides advice on how to stay confident about my abilities" (mental preparation), "Monitors progress towards my goals" (goal setting), "keeps me focused in competition" (competition strategies), "is a good listener" (positive personal rapport), and "uses power to manipulate me" (negative personal rapport). Evidence supporting the reliability and construct validity of the CBS-S has been provided (Baker, Yardley & Côté, 2003; Côté et al, 1999).

Procedures

Once approval for the study was obtained from the ethics committee of the authors' institution, coaches from the relevant sports were contacted and provided with information about the study protocol. For coaches who agreed to permit access to the athletes they coached, a convenient time and date for data collection following a training session was scheduled. Prior to data collection, athletes were provided with an information sheet, informed participation was voluntary, they were free to withdraw at any point and information gathered would be confidential, before being provided with the opportunity to have any questions answered. Once this was done, athletes who volunteered to participate provided written informed consent before completing the questionnaire pack which took approximately 10 to 15 minutes. Data were collected four to six months into the competitive season.

Results

Descriptive Statistics, Scale Reliabilities and Bivariate Correlations

All data analyses were conducted using SPSS version 22.0. Descriptive statistics, Cronbach's (1951) alpha coefficients, and correlations for all study variables are presented in Table 2.1. On average, athletes perceived their coach to be quite effective for all four dimensions of coaching effectiveness, and that their coaches engaged quite frequently in all types of coach behavior with the exception of negative personal rapport behaviors which were observed infrequently. Alpha coefficients indicated good to excellent levels of internal reliability for all sub-scales of each measure (Nunnally, 1978).

Table 2.1: *Descriptive statistic, alpha coefficients, and correlations among study variables*

Variable	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
1. Motivation Effectiveness	.93													
2. Game Strategy Effectiveness	.68**	.88												
3. Technique Effectiveness	.83**	.69**	.89											
4. Character Building Effectiveness	.81**	.65**	.78**	.85										
5. Technical Skill	.65**	.53**	.67**	.51**	.94									
6. Mental Preparation	.53**	.30**	.44**	.48**	.41**	.96								
7. Goal Setting	.48**	.41**	.43**	.47**	.39**	.72**	.95							
8. Competitive Strategy	.58**	.52**	.52**	.49**	.46**	.60**	.70**	.92						
9. Positive Personal Rapport	.66**	.40**	.48**	.64**	.41**	.48**	.37**	.44**	.88					
10. Negative Personal Rapport	-.39**	-.30**	-.39**	-.35**	-.29**	-.16**	-.15**	-.24**	-.26**	.87				
11. Sex	-.12*	-.08	-.14*	-.14*	.08	-.04	-.01	-.04	-.18**	.16**	-			
12. Sex mismatch	-.10	-.09	-.04	-.05	-.15**	.02	.05	-.02	-.01	.02	-.05	-		
13. Experience	-.00	-.01	-.05	-.01	-.15**	-.13*	-.07	.02	-.10	.11*	. 15**	.19**	-	
14. Individual/Team Sport	-.19**	.16**	-.19**	-.12*	-.01	-.11*	-.09	-.04	-.05	.19**	.09	-.25**	.02	-
M	7.15	7.28	7.42	7.49	7.40	6.13	6.28	6.61	6.77	2.23	.50	.35	9.71	1.51
SD	1.52	1.38	1.43	1.39	1.63	2.10	2.02	1.59	1.71	1.72	.50	.47	4.05	.50

Note. *N* = 297. Sport experience and age are expressed in years. Sex was coded 0 for females and 1 for males. Sex match and mismatch between athletes and their coach, individual and team sport were coded 0 and 1 respectively. Alpha coefficients are presented on the diagonal.

**Correlation is significant at the .01 level (2-tailed). *Correlation is significant at the .05 level (2-tailed)

Evaluating the bivariate Pearson's correlations using Cohen s' (1992) guidelines shows strong positive correlations between the four dimensions of coaching effectiveness, and moderate to strong inter-correlations among the seven types of coaching behavior; correlations between the behavior types were all positive with the exception of negative personal rapport behaviors, which were negatively related to the other six behaviors. Relationships between perceptions of coaching effectiveness and coach behavior were moderate to strong, and all positive with the exception of those with negative personal rapport behavior which were negative. Sex had a weak negative relationship with three of the four dimensions of coaching effectiveness, indicating slightly higher perceptions of effectiveness in females than males. In contrast, only two coach behaviors were associated with sex, with positive and negative personal rapport behaviors having negative and positive relationships, indicating that female athletes perceived positive personal rapport behavior to be slightly more frequent than male athletes, whereas male athletes perceived negative personal rapport behaviors to be more frequent than female athletes did. Coach/athlete sex mismatch was not related to any dimension of coaching effectiveness. Next, there were weak to weak-to-moderate associations between sport type (individual/team) and all dimensions of coaching effectiveness; individual sport athletes considered their coach more effective than team sport athletes for all dimensions of effectiveness except game strategy, where the opposite was true.

Predictors of Coaching Effectiveness

The first aim of the current study was to attempt to replicate the findings of Kavussanu et al. (2008) relating to the prediction of coaching effectiveness. This was addressed through multivariate multiple regression, which indicated a significant multivariate effect for sex, F (1, 296) = 5.66, $p < .01$, η_P^2, 02; the results from these analyses are presented in Table 2.2. Neither sport experience nor coach/athlete sex mismatch was a significant predictor of any

dimension of coaching effectiveness. In contrast, athlete sex was a significant negative predictor of athletes' perceptions of their coach's motivation (M_{Male} = 6.97, M_{Female} = 7.33), technique (M_{Male} = 7.21, M_{Female} = 7.62), character building (M_{Male} = 7.29, M_{Female} = 7.69) and total coaching effectiveness (M_{Male} = 7.16, M_{Female} = 7.51).

Next, to examine whether sport type (i.e., team/individual) and its potential interaction with sex had an effect on ratings of coaching effectiveness, a 2 Sport Type (individual, team) X 2 Sex (male, female) MANOVA was conducted. This analysis revealed significant sport type, F (1, 296) = 3.73, p =.01, η_P^2 .05, and sex, F (1, 296) = 5.87, p = .02, η_P^2 .04, multivariate main effects, but no significant interaction. Follow up ANOVAs indicated athletes in individual sports perceived their coach to be: (a) higher in motivation effectiveness (M = 7.48, SD = 1.33) than team sport athletes (M = 6.88, SD = 1.61) did, (b) higher in technique effectiveness (M = 7.72, SD = 1.36) than team sport athletes (M = 7.16, SD = 1.44) did, (c) higher in character building effectiveness (M = 7.68, SD = 1.33) than team sport athletes (M = 7.33, SD = 1.41) did, and (d) lower in game strategy effectiveness (M = 7.02, SD = 1.47) than team sport athletes (M = 7.48, SD = 1.27) did.

Table 2.2: *Predictors of coaching effectiveness*

	Variable	*b*	*95% CI for b*	β	t	R^2
1	Motivation Effectiveness					
						.02
	Sport experience	-.00	-.04, .04	-.00	-.12	
	Sex match/mismatch	-.36	-.72, .00	-.11	-1.92	
	Sex	-.38	-.72, -.03	-.12	-2.14*	
2	Game Strategy effectiveness					
						.01
	Sport experience	-.00	-.04, .03	-.01	-.29	
	Sex match/mismatch	-.29	-.63, .04	-.10	-1.70	
	Sex	-.23	-.55, .08	-.08	-1.47	
3	Technique Effectiveness					
						.02
	Sport experience	-.01	-.05, .02	-.04	-.73	
	Sex match/mismatch	-.19	-.54, .15	-.06	-1.08	
	Sex	-.39	-.72, -.07	-.13	-2.38*	
4	Character Building Effectiveness					
						.02
	Sport experience	-.00	-.04, .03	-.00	-.11	
	Sex match/mismatch	-.19	-.52, .14	-.06	-1.12	
	Sex	-.41	-.73, -.09	-.14	-2.54*	
5	Total Perceived Coaching Effectiveness					
						.02
	Sport experience	-.00	-.04, .03	-.02	-.35	
	Sex match/mismatch	-.26	-.57, .05	-.09	-1.63	
	Sex	-.35	-.65, -.06	-.14	-2.38*	

Note. $N = 297$. CI= Confidence Interval. * $p < .05$, **curriculum development <.01, ***p <.001. Sex coded 0 for females and 1 for males. Sex match and mismatch between athletes and their coach coded 0 and 1 respectively.

The analytical strategy for the first aim replicates that of Kavussanu et al (2008) is direct purpose for comparisons between the results of the two studies. However, the second aim relates to the predictive ability of athlete perceptions of coach behavior, which were not examined by Kavussanu et al. (2008). As such, these separate analytical strategies were required and would therefore prefer to retain in the current strategy. Moreover, the second aim of the study was to investigate whether athletes' perceptions of specific categories of coach behavior predicted conceptually related dimensions of coaching effectiveness. To address this aim, a series of hierarchical multiple regression analyses were conducted. For each dimension of coaching effectiveness, age, years with coach, sport experience, athlete sex, and coach/athlete sex mismatch were entered in the first step to control for any possible effects of these variables on perceptions of coaching effectiveness. The relevant coach behavior type/s was/were then entered in the second step to determine its/their predictive effects. The results of these analyses are presented in Table 2.3.

In the first analysis, once any effects of the control variables were accounted for, athletes' perceptions of their coach's technical coaching behavior accounted for 51% of the variance in athletes' perceptions of their coach's technique effectiveness. Next, athletes' perceptions of their coach's goal setting and mental preparation coaching behavior collectively accounted for 34% of the variance in their perceptions of their coach's motivation effectiveness. Third, athletes' perceptions of their coach's competition strategies coaching behavior explained 32% of the variance in their perceptions of their coach's game strategy effectiveness. Finally, athletes' perceptions of their coach's positive and negative personal rapport coaching behavior collectively accounted for 45% of the variance in their perceptions of their coach's character building effectiveness.

Table 2.3: *Hierarchical multiple regression analyses predicting coaching effectiveness*

Variable	*b*	*SE b*	β	*t*	R^2	*F* Change
Technique Effectiveness						
Step 1					.04	2.85*
Age	-.07	0.06	-.07	-1.17		
Years with coach	-.23	0.11	-.12	-2.09*		
Sport experience	-.00	0.02	-.01	-0.26		
Sex	-.38	0.16	-.13	2.30*		
Coach/athlete sex mismatch	-.19	0.17	-.06	-1.10		
Step 2					.51	278.93***
Technical skill behaviors	.63	0.03	.72	16.75***		
Motivation Effectiveness						
Step 1					.05	2.75*
Age	-.12	0.06	-.10	-1.79		
Years with coach	-.09	0.07	-.07	-1.31		
Sport experience	.00	0.02	.02	0.41		
Sex	-.35	0.18	-.11	-1.95*		
Coach/athlete sex mismatch	-.37	0.19	-.11	-1.91		
Step 2					.34	64.37***
Goal setting behaviors	.17	0.05	.23	3.34**		
Mental preparation behaviors	.26	0.05	.36	5.16***		
Game Strategy Effectiveness						
Step 1					.05	3.09*
Age	-.03	0.05	-.03	-0.51		
Years with coach	-.32	0.10	-.17	-3.06*		
Sport experience	.00	0.02	.01	0.23		
Sex	-.23	0.16	-.08	-1.41		
Coach/athlete sex mismatch	-.26	0.17	-.09	-1.57		
Step 2					.32	115.43***
Competition strategy behaviors	.45	0.04	.52	10.74***		
Character Building Effectiveness						
Step 1					.05	3.15*
Age	-.10	0.05	-.10	-1.82		
Years with coach	-.18	0.10	-.10	-1.76		
Sport experience	.00	0.02	.02	0.43		
Sex	-.40	0.16	-.14	-2.49*		
Coach/athlete sex mismatch	-.21	0.17	-.07	-1.21		
Step 2					.45	105.24***
Positive personal rapport behavior	.47	0.03	.59	12.53***		
Negative personal rapport behavior	-.16	0.03	-.20	-4.32***		

Note. N =297. *$p < .05$, **$p < .01$, ***$p < .001$

Discussion

To investigate coaches' potential to influence athletes' psychosocial development, researchers have sought to understand factors that influence coaching effectiveness (e.g., Boardley et al., 2008; Kavussanu et al., 2008). The current study aimed to contribute to the body of knowledge on this topic by addressing two primary research aims. The first of these was to seek to replicate the findings of Kavussanu et al. (2008) relating to the prediction of athletes' perceptions of coaching effectiveness with a separate sample. The second was to test a series of hypothesized links between athletes' perceptions of their coach's coaching behavior and their coaching effectiveness. Over the following paragraphs, we review and discuss findings relevant to these two aims.

Predicting Athletes' Perceptions of Coaching Effectiveness

In seeking to replicate some of the findings reported by Kavussanu et al. (2008), we tested whether sport experience, coach/athlete sex mismatch and sex predicted athletes' perceptions of their coach's effectiveness. First, we hypothesized athletes' perceptions of their coach's effectiveness would be negatively predicted by sport experience for all four dimensions of coaching effectiveness. However, contrary to these hypotheses sport experience did not predict athletes' perceptions of coaching effectiveness on any of the four dimensions. These findings contrast with those of Kavussanu et al. (2008), who found sport experience to be a negative predictor for all four dimensions of coaching effectiveness. A potential explanation for these contrasting findings relates to differences between the samples of the two studies. Kavussanu et al. (2008) reasoned that the effect of experience on athletes' perceptions of their coach's effectiveness may have been due to athletes with more experience having trained with a greater number of coaches, which may lead to them being more critical of their current coach. However, in the current study it is possible such an effect was negated

due to athletes having on average spent longer with their current coach than those sampled by Kavussanu et al. (2008). To explicate further, it is possible athletes who have had longer relationships with their current coach may have better relationships with them, and therefore be less likely to be critical of them (see Jowett & Cockerill, 2002). Thus, it is possible sport experience may only negatively predict perceptions of coaching effectiveness when athletes have been with their coach for relatively short time periods.

Another hypothesized negative predictor of athletes' perceptions for two dimensions of coaching effectiveness was coach/athlete sex mismatch. More specifically, we expected athletes' perceptions of their coach's motivation and character building effectiveness would be lower for athletes who had a coach of the opposite sex compared to those who were coached by someone of the same sex. Our results did not support these hypotheses, as athletes' who were coached by coaches of the opposite sex did not perceive their coach to be less effective than athletes with a coach of the same sex for any dimension of coaching effectiveness. However, it should be acknowledged the effect for motivation effectiveness approached significance (i.e., p =.06) and although weaker in magnitude, it was in the same direction (β = -.11 vs -.17) as the equivalent effect in the Kavussanu et al. (2008) study. Thus, this would appear to be a fairly consistent yet weak effect.

The equivalent effect for perceptions of character building effectiveness did not approach significance though, and we found no evidence of an effect of coach/athlete sex mismatch on this dimension of coaching effectiveness. The lack of an effect here – and possibly the weaker effect for motivation effectiveness – may be explained by differences in the coach-athlete sex balance between the two studies. More specifically, in the Kavussanu et al. (2008) study 59.1% of female athletes were coached by a male coach, whereas only 3.5% of male athletes were coached by a female coach. In contrast, presently 37.4% and 32.7% of

female and male athletes, respectively, had a coach of the opposite sex. As such, a far greater percentage of male athletes had a female coach in the present study compared to the Kavussanu et al study. It is possible, therefore, that the differences between the two studies – in terms of the nature of the mismatches in coach/athlete sex – may have led to the disparate findings relating to this variable predicting character building and motivation effectiveness. To explain further, studies have shown that overall female coaches are perceived to (a) be more understanding, (b) have a more caring style of communication, (c) be more able to relate well to others and (d) be more understanding of athletes' feelings in comparison to male coaches (Fasting & Pfister, 2000; Molstad & Whitaker, 1987). Given the apparent relevance of such characteristics for character-building coaching, a male athlete judging a female coach may well not be equivalent to a female athlete judging a male coach on their character-building capabilities. However, the methods used by Kavussanu and colleagues to indicate sex mismatch – replicated in the current study – do not differentiate between the two types of coach/athlete sec mismatch. This suggests a more sensitive (i.e., making the distinction between the nature of the sex imbalance between the coach and athlete) approach to the investigation of coach/athlete sex mismatch may be a useful consideration in similar research in the future.

We also tentatively hypothesized athletes' sex would not be a predictor of athletes' perceptions of coaching effectiveness for any dimension of effectiveness. Contrary to this hypothesis we found athletes' sex negatively predicted athletes' perceptions of their coach's technique, character building and motivation effectiveness. Thus, in general, female athletes perceived their coach to be more effective in technique, character building and motivation than male athletes did. Although these findings contrast with those of Kavussanu et al. (2008), who found sex did not predict athletes' perceptions of coaching effectiveness for any

dimension, it is important to recognize our findings are in fact consistent with Kavussanu et al.'s (2008) original hypotheses. More specifically, Kavussanu et al. (2008) expected to find differences in athletes' perceptions of their coach's effectiveness between male and female athletes. These expectations were based upon relevant aspects of Horn's (2008) model of coaching effectiveness, which suggests athlete sex can influence the way athletes perceive, interpret and evaluate their coach's behavior. Also, male student athletes have reported greater perceived frequency of their coach's autocratic and lower perceived frequency of their coach's democratic coaching behaviors than female student athletes (Holembeak & Amorose, 2005). Similarly, male junior-college baseball and softball players perceived their coach to display more autocratic behaviors, and provide more training and instruction, social support and positive feedback than female athletes did (Gardner et al., 1996). Thus, our findings demonstrating effects of athletes' sex on perceptions of coaching effectiveness – whilst contrasting with Kavussanu et al. (2008) – are consistent with a body of literature showing sex differences in athlete's perceptions of their coach.

We also examined whether athletes' perceptions of coaching effectiveness differed between team- and individual-sport athletes. Results showed that athletes' perceptions of coaching effectiveness were different between team- and individual-sport athletes for all four dimensions of effectiveness. For athletes' perceptions of technique effectiveness, individual-sport athletes rated their coaches higher than team-sport athletes. This finding replicates the equivalent finding from Kavussanu et al. (2008), and further supports their contention that this may be explained by coaches of individual-sport athletes potentially spending more time working one-on-one with individual athletes on technique and skill development than coaches working with team-sport athletes. Importantly, such differences in coach behavior can result in relatively permanent changes in athlete skill development (Anshel, 1990). Thus, if

individual athletes do on average receive a greater frequency of individual coaching on technique than team-sport athletes, they may draw upon such improvements in their skill development when forming conclusions relating to their coach's technique effectiveness.

We also found team-sport athletes perceived their coach to be more effective in game strategy than individual-sport athletes did. This finding contrasts with Kavussanu et al. (2008) who found no sport-type effect for this variable. This discrepancy between the findings of the two studies may be due to differences in the individual sports represented in the two studies. More specifically, most of the individual sports represented in the Kavussanu et al. study (i.e., badminton, fencing, judo, jujitsu, karate and table tennis) involve coaches giving advice on tactics and strategy during competition. In contrast, only one individual sport (i.e., badminton) represented in the present sample is likely to require similar coach involvement during competition. Therefore, in the current study the higher levels of coach game strategy effectiveness perceived by team-sport athletes in comparison to individual sport athletes may have been due to coaches from the individual sports represented having fewer opportunities to engage in game-strategy-relevant coaching behaviors (e.g., helping players recognize opposing player's strengths and weaknesses and to make critical decisions during competition) compared to the team sport coaches. This difference may not have been found by Kavussanu et al. (2008) due to the individual sports in that study generally having more opportunities for game-strategy coaching than those in the present study.

Another finding that contrasted with those of Kavussanu et al. (2008) was the differences detected between individual- and team-sport athletes' perceptions of their coach's motivation effectiveness. More specifically, in the present study individual-sport athletes rated their coaches as more effective in motivation effectiveness than team-sport athletes did. This finding may be explained in a similar way to that for technique effectiveness. More

specifically, individual-sport coaches may have more time to engage individually with athletes using coaching behaviors linked with improvements in psychological development of athletes such as providing feedback, demonstrating high levels of self-efficacy and confidence (see Feltz & Lirgg, 2001; Vargas-Tonsing, Warners, & Feltz, 2003; Vealey et al., 1998) than team-sport coaches. Regarding why this effect was not detected in the Kavussanu et al. (2008), this could potentially be due to a lack of statistical power in that study. In the present study, the number of individual- and team-sport athletes was approximately equal (i.e., $n_{individual}$ = 144, n_{team}= 155) as we specifically set out to balance our sample between team and individual sports. However, it is not possible to determine levels of statistical power and effect sizes for these analyses in the Kavussanu et al. (2008) study because relevant information was not reported.

We also found differences between individual- and team-sport athletes' perceptions of their coach's character building effectiveness. Individual-sport athletes rated their coach as more effective in character building than team-sport athletes did. Of importance is that the individual sports included presently did not involve any contact, meaning the potential for physical interaction and violence between opponents was minimal. Increased physical contact in sports heightens the opportunity for aggressive behavior, which has been associated with lower levels of moral functioning (see Kavussanu & Boardley, 2009, 2012). Per Conroy, Silva, Newcomer, Walker and Johnson (2001) this may be due to high-contact sports having different socialization processes that are more forgiving to aggressive behavior in sport. Thus, the lack of physical contact in the three individual sports represented in the current study may mean that coaches in those sports had no reason to potentially condone aggressive behavior. As such, such coaches should mostly be able to promote athletes' character development without at times utilizing behaviors that potentially contradict such efforts. In contrast,

coaches from the team-sports in the current study – all medium contact sports – may at times have to choose between punishing aggressive play and gaining competitive advantage through it. Interestingly, Kavussanu et al. (2008) did not detect such group differences. However, this may be explained by differences between the individual sports represented in their study and those sampled presently. More specifically, in the Kavussanu et al. study, several combat sports were represented, whereas in the current study no such sports were sampled from. As such, physical contact and aggression were intrinsic aspects of the individual sports studied by Kavussanu and colleagues. However, more research is needed to determine whether levels of physical contact lead to differences in athletes' perceptions of coach character-building effectiveness.

Predicting Athletes' Perceptions of Coaching Behavior

The second major objective of the study was to investigate whether athletes' perceptions of specific categories of coach behavior predicted conceptually related dimensions of coaching effectiveness. Consistent with our hypotheses, regression analyses demonstrated athletes' perceptions of their coach's behavior predicted each of the anticipated dimensions of coaching effectiveness. Collectively these findings provide support for a key aspect of Horn's (2008) model of coaching effectiveness, which suggests athletes' perceptions of their coach's effectiveness are based upon the coaching behaviors they observe. Over the following paragraphs we interpret and discuss the specific findings in more detail.

First, athletes' perceptions of their coach's technical skill behavior were strong positive predictors of athletes' perceptions of their coach's technique effectiveness. Thus, the more frequently athletes perceived receiving advice whilst performing a skill, feedback to correct errors and reinforcement of correct technique, the more effective they considered their coach to be in their instructive and diagnostic skills. This suggests that when athletes perceive

greater frequency of such behaviors, they tend to link this greater effectiveness within this coaching domain. A likely implication of this is that coaches who frequently use such behaviors are more likely to enhance athletes' skill development and performance (Gallimore & Tharpe, 2004; Smith, & Cushion, 2006). Thus, it would seem frequent use of technical skill behaviors may be important if coaches are to be perceived as effective in their instructional and diagnostic abilities.

Next, athletes' perceptions of their coach's goal-setting behavior positively predicted their perceptions of their coach's motivation effectiveness. In general, the more often athletes perceived their coach used strategies to help athletes achieve their goals, the more effective they were perceived to be in their capacity to positively impact the psychological skills and states of their athletes. Coaches are thought to use goal setting as a strategy to help athletes to focus their attention on the processes required to achieve improvements in skill and commitment (Locke & Latham, 1985; Schunk, 1995). Development of goal-setting abilities may also generalize to other psychological strategies too, which would explain the link between coaches' goal-setting behavior frequency and their perceived effectiveness in developing athletes' physiological abilities more generally. Evidence of such links is seen in research that has linked coach goal-setting behaviors with athletes' use of imagery (see Martin, Moritz, & Hall, 1999; Callow & Hardy, 2001; Short, Bruggeman, Engel, Marback, Wang, Willadsen et al., 2002). Thus, this finding identifies the potential importance of coaches' goal-setting behaviors for athletes' psychological preparation in sport.

Beyond that explained by perceived frequency of goal-setting behaviors, athletes' perceptions of their coach's mental-preparation behaviors explained additional variance in athletes' perceptions of their coach's motivation effectiveness. As such, when athletes perceived their coach more frequently provided advice on how to perform under pressure and

stay mentally tough, the coach was considered more effective in psychologically preparing athletes. Perceiving the coach to be high in motivation effectiveness reveals athletes may have experienced coach behaviors that enhanced athlete focus and confidence to perform the skills of their sport (see Feltz et al., 1999). Such coach behaviors may center on development of athletes' use of positive self-talk, verbal persuasion (Gould, Hodge, Peterson, & Gianini, 1989) or a range of efficacy-building coach behaviors such as those identified by Vargas-Tonsing, Myers, Munk and Feltz (2003). This finding highlights the potential importance of coaches engaging in a range of mental preparation behaviors if they are to maximally develop athletes' psychological abilities.

Next, athletes' perceptions of their coach's competitive strategy behavior positively predicted athletes' perceptions of their coach's game strategy effectiveness. Thus, coaches who were perceived to more frequently help athletes keep focused and deal with problems that emerge during competition were perceived as being more effective in preparing athletes to be successful and lead athletes to a better performance during competition. The importance of coaches adopting such behaviors is highlighted by research that has shown coach competitive strategy behaviors can help athletes to focus, perform at their best level and be prepared to face a variety of competitive situations (Côté et al., 1999: Horn, 2008). Thus, coaches' competitive strategy behaviors make an important contribution to athletes' perceptions of their coach's game strategy effectiveness.

Furthermore, athletes' perceptions of their coach's positive personal rapport behavior frequency positively predicted athletes' perceptions of their coach's character building effectiveness. Thus, coaches who were perceived to engage more frequently in behavior such as showing understanding for athletes as people and being a good listener were considered more effective in facilitating athletes' personal development and sportspersonship (Feltz et al.,

1999). Adoption of such behaviors may be linked with sportsmanship coach behaviors such as reinforcing, teaching and modelling good sportsmanship (Bolter & Weiss, 2012). Positive personal rapport behaviors demonstrate the importance of coaches developing interpersonal skills that go beyond expertise in their sport (Côté & Sedgwick, 2003).

Finally, beyond that explained by perceptions of positive personal rapport behaviors, athletes' perceptions of their coach's negative personal rapport behavior frequency negatively predicted athletes' perceptions of their coach's character building effectiveness. In general, coaches seen to engage more frequently in behaviors such as displaying favoritism, disregarding opinions, and using fear to control athletes were perceived to be less effective in instilling an attitude of good moral character in athletes. These negative coach behaviors are likely to reflect poor sportspersonship coach behaviors such as modeling poor sportspersonship and prioritizing winning over good sportsmanship (see Bolter & Weiss, 2012). Importantly, such coach behaviors have been positively associated with athletes' antisocial behavior (Bolter & Weiss, 2013). In combination, these last two findings highlight the potential importance of frequency of both positive and negative coach personal rapport behaviors for optimizing athletes' character development in sport.

Limitations and Future Research Directions

The current study revealed numerous interesting findings. Despite this, several limitations are evident and the findings should be interpreted with these in mind. First, the study used a cross-sectional design, which means that the causal nature of the predictive effects tested could not be tested and shouldn't be inferred. Future researchers may therefore wish to employ quasi-experimental designs to test the causal nature of some of the significant findings reported. Longitudinal designs could also be used to investigate the temporal ordering of some of the effects identified. Another limitation was the reliance on self-report measures,

which means the accuracy of our findings is in part reliant on the honesty of participants and their introspective ability to provide an accurate response to all questionnaire items. Future researchers could consider coding actual coach behaviors and/or using more objective measures of coach effectiveness (e.g., motivation, technique, game strategy and character building). Finally, our study population only included six sports, and therefore our findings cannot be generalized to sports outside of these. Future researchers are encouraged to investigate similar research questions with athletes from different sports and others athletic populations (e.g., school children, elite athletes).

Conclusion

In conclusion, the current research identified some contrasting findings to those of Kavussanu et al. (2008), suggesting some of the effects tested may be influenced by specific characteristics of athlete populations. More work is needed to help us understand the specific environmental and/or individual-difference factors that lead to differing relationships between athlete experience, sex, sex mismatch, and athletes' perceptions of coaching effectiveness. The divergent findings further highlight the importance of attempting to replicate findings in psychological research. We also identified some important links between athletes' perceptions of their coach's behavior and their perceptions of coaching effectiveness and in doing so provided support for relevant aspects of the model of coaching effectiveness proposed by Horn (2008). Theoretical observation revealed that coaching behavior is important as involve apparently intuitive of effective coaching. Coach perform their role to build relationship with athletes and all the coaching support system particularly, exhibit ability such as effectiveness and leadership skill to associates with athlete behavior.

CHAPTER 3

ATHLETES' PERCEPTIONS OF COACHING EFFECTIVENESS AND ATHLETE-LEVEL OUTCOMES IN TEAM AND INDIVIDUAL SPORTS: A CROSS-CULTURAL INVESTIGATION

This study has been accepted for publications in the The Sport Psychologist "Coaching Effectiveness and Athlete Behavior in Team and Individual Sports: A Cross-Cultural Investigation". The date of acceptance is 08th of February 2018. (Manuscript ID TSP.2016-0159)

Abstract

This research aimed to investigate whether athletes' perceptions of their coach's effectiveness on the four coaching efficacy dimensions (i.e., motivation, technique, character building) predicted indicators of their competence, confidence, connection and character in athletes from the UK and Malaysia. Athletes from team (volleyball [UK *n* = 46; Malaysia *n* = 49], hockey [UK *n* = 34; Malaysia *n* = 47] and basketball [UK *n* = 50; Malaysia *n* = 50]) and individual (squash [UK *n* =47; Malaysia *n* = 44], table tennis [UK *n* = 48; Malaysia *n* = 47] and golf [UK *n* = 44; Malaysia *n* = 47]) completed questionnaire packs assessing the study variables. Multiple regression analyses, controlling for athletes' sex, sport experience and sport type showed in both samples that: (a) perceived motivation effectiveness positively predicted athletes' connection and sport confidence, (b) perceived technique effectiveness positively predicted athletes' sport competence and (c) perceived character building effectiveness positively predicted athletes' moral identity. Thus, athletes' perceptions of their coach may have important implications for athletes' sport experiences in team and individual sports even in diverging cultures. Results are discussed in terms of their relevance for the coaching efficacy model and the athlete-level outcomes resulting from effective coaching proposed by Côté and Gilbert (2009).

Keywords*: Coaching effectiveness, athlete outcomes, individual and team sport, cultural influences*

Introduction

Sport coaches fulfill important roles in sport, being responsible for numerous outcomes relevant to athlete development and performance. Importantly, Côté and Gilbert (2009) proposed four specific athlete-level outcomes that should result from effective coaching: competence, confidence, connection and character. Consistent with these proposed outcomes, research on coaching effectiveness has identified significant associations between athletes' assessments of their coach's effectiveness and relevant athlete outcomes (e.g., Boardley, Kavussanu, & Ring, 2008). However, to date researchers have not investigated links between athletes' perceptions of their coach's effectiveness and all four of the athlete-level outcomes proposed by Côté and Gilbert (2009) across a range of team and individual sports. As such, the primary aim of the current investigation was to address this deficit in the current literature. The rationale of the current study being tested focus on theoretical perspective between two models. A framework that has proved useful in guiding research on coaching effectiveness is the coaching efficacy model introduced by Feltz, Chase, Moritz and Sullivan (1999) and athletes' perceptions of their coach and athlete-level outcomes (Boardley et al., 2008; Boardley, Jackson, & Simmons, 2015; Boardley & Kavussanu, 2009)

The four athlete-level outcomes proposed by Côté and Gilbert (2009) as outcomes of coaching effectiveness are connection, confidence, competence and character. Connection relates to constructive understanding and social associations between individuals in the sport environment (Vierimaa, Ericson, Côté, & Gilbert, 2012). Confidence signifies the belief or degree of certainty individuals possess about their ability to achieve success in sport (Vealey, 1986). Competence refers to high levels of technical, tactical and physical skills in one's sport, and is reflected in elevated achievement, performance or ability (Vierimaa, Erickson, Côté, & Gilbert, 2012). Finally, character represents positive ethical values, moral

development and sportspersonship in athletes (Bredemeier & Shields, 1996). Côté and Gilbert (2009) proposed this diverse range of athlete-level outcomes reflects the multifaceted nature of sport coaching and the highly variable roles sport coaches adopt.

A framework that has proved useful in guiding research on coaching effectiveness is the coaching efficacy model introduced by Feltz, Chase, Moritz and Sullivan (1999). Researchers applying the coaching efficacy model to the assessment of coaching effectiveness have defined coaching effectiveness as the extent to which coaches can implement their knowledge and skills to positively affect the learning and performance of their athletes (Boardley et al., 2008; Kavussanu, Boardley, Jutkiewicz, Vincent, & Ring, 2008). Importantly, the dimensionality of the original coaching efficacy model has been supported when athletes' assessments of their coach's effectiveness have been assessed using this framework (Boardley et al., 2008; Kavussanu et al., 2008). This model consists of four sub-dimensions of coaching effectiveness: motivation, game strategy, technique and character building. Motivation effectiveness relates to athletes' ratings of their coach's ability to develop the psychological skills and motivational states of the athletes they coach. Game strategy effectiveness represents athletes' assessments of their coach's ability to lead and coach athletes to a successful performance during competition. Technique effectiveness concerns athletes' evaluations of their coach's instructional and diagnostic abilities. Finally, character building effectiveness pertains to athletes' perceptions of their coach's ability to influence athletes' personal development and positive attitudes toward sport. For this current research, the three efficacy dimensions were use out of four efficacy dimensions that were bases on empirically test whether effective coaching is link with the outcomes proposed. Perspective definition also being the criteria on how selection of the dimensions were linked.

Research grounded in the coaching efficacy model has established links between athletes' perceptions of their coach and athlete-level outcomes (Boardley et al., 2008; Boardley, Jackson, & Simmons, 2015; Boardley & Kavussanu, 2009). First, Boardley et al. (2008) found rugby union players' perceptions of their coach's effectiveness predicted numerous athlete-level outcomes. More specifically, athletes' perceptions of their coach's motivation effectiveness positively predicted athletes' effort, commitment and enjoyment, technique effectiveness positively predicted athletes' task self-efficacy and character building effectiveness positively predicted athletes' prosocial behavior. Then, Boardley and Kavussanu (2009) showed field hockey and netball players' perceptions of their coach's character building competency (i.e., evaluations of a coach's ability to affect their athletes' personal development and positive attitude toward sport; Myers et al., 2006) negatively predicted athletes' antisocial opponent and teammate behavior and positively predicted their prosocial opponent behavior; these effects were mediated in part through changes in moral disengagement (i.e., conditional endorsement of transgressive behavior through any of eight psychosocial mechanisms; Bandura, 1991). Most recently, Boardley et al. (2015) identified consistent positive links between golfers' perceptions of their coach's motivation efficacy (i.e., players' confidence in their coach's ability to influence the psychological skill and states of their players; Feltz et al., 2008) and players' task self-efficacy across three studies. Although informative, collectively the above studies only considered variables relevant to two (i.e., confidence, character) of the four athlete-level outcomes proposed as outcomes of effective coaching by Côté and Gilbert (2009).

Researchers looking to empirically test whether effective coaching is linked with all four of the outcomes proposed by Côté and Gilbert (2009) need to identify appropriate variables representing each of the four outcomes. A suitable variable representing connection

in athletes is the coach-athlete relationship, which has been shown to be composed of three dimensions: closeness, commitment and complementarity (Jowett & Ntoumanis, 2004). Closeness represents athletes feeling cared for, liked, valued and able to trust their coach (Jowett & Meek, 2000). Commitment refers to athletes' intentions to maintain their relationship with their coach (Jowett & Ntoumanis, 2004). Finally, complementarily signifies athletes' readiness, responsiveness, friendliness and willingness to cooperate with their coach (Jowett & Ntoumanis, 2004). Importantly, athletes who perceive their coach to have high levels of motivation effectiveness may be more likely to report a strong coach-athlete relationship because this dimension of coaching effectiveness in part represents a coach's effectiveness in building player-coach cohesion (Feltz et al., 1999). Moreover, the coach-athlete relationship is viewed and has been empirically found to link to motivation (e.g., Adie & Jowett, 2008). Thus, coaches perceived to be high in motivation effectiveness should have athletes who report higher levels of connection with their coach, as represented by the strength of the coach-athlete relationship. However, this supposition has not been empirically tested to date.

The second athlete-level outcome of effective coaching proposed by Côté and Gilbert (2009) was confidence. In addition to the proposed link with connection, athletes' perceptions of their coach's motivation effectiveness may also be an important antecedent of athletes' sport confidence. This is because motivation effectiveness reflects the ability of coaches to develop the psychological skills and states of athletes, including maintaining and building athlete self-confidence (Feltz et al., 1999). Empirical support for this was provided by Boardley et al. (2015) who found golfers' perceptions of their coach's motivation efficacy positively predicted players' golf self-efficacy. However, to date this proposed association has not been examined across a range of team and individual sports.

The third athlete-level outcome of effective coaching proposed by Côté and Gilbert (2009) was competence. Athletes' perceptions of their coach's technique effectiveness may be an important prerequisite for heightened sport competence in athletes as such perceptions are based on a coach's ability to develop athletes' technical abilities and teach the skills of their sport (Feltz et al., 1999). Thus, athletes who perceive their coach to be high in technique effectiveness should have increased levels of sport competence. Support for this supposition is seen in research that has shown coaches who provide technical instruction during practice produce athletes with higher levels of perceived competence (Falcão, Bloom & Gilbert, 2012). Given perceptions of coaching effectiveness are thought to be largely based on the coaching behaviors athletes observe (see Horn, 2008), it is assumed coaches perceived to be high in technique effectiveness should engage frequently in effective technical coaching behaviors. Thus, coaches perceived to be high in technique effectiveness should have athletes who report higher levels of sport competence. However, this possibility has not been empirically tested to date.

The final athlete-level outcome proposed by Côté and Gilbert (2009) to result from effective coaching was character. According to Boardley and Kavussanu (2009), coaches perceived to be highly capable in character building coaching should demonstrate a greater frequency of character-development behaviors, such as promoting good sportspersonship, respect for others and fair play. Thus, it is reasonable to expect athletes' perceptions of their coach's effectiveness in character building to be positively linked with athletes' moral development because such perceptions are assumed to be based on exposure to coaching behaviors relevant to character development. An important indicator of athletes' moral development is their moral identity, which represents the degree to which a person's moral character is experienced as a central part of his/her overall self-concept (Aquino & Reed,

2002). Given their likely basis in character-development coaching behaviors, athletes' perceptions of their coach's character building effectiveness may therefore be an important antecedent of athletes' moral identity. Consistent with this possibility, empirical evidence has shown perceived character building effectiveness positively predicts athletes' prosocial behavior (Boardley et al., 2008) and perceived character building competency negatively predicted athletes' antisocial opponent and teammate behavior and positively predicted their prosocial opponent behavior (Boardley & Kavussanu, 2009). However, to date researchers have not investigated possible links between athletes' perceptions of their coach's character building effectiveness and their moral identity.

Due to the inherent complexity of coaching, it is possible some of the outcomes of effective coaching proposed to this point may vary between cultures, as cultural differences can influence the behaviors, values, emotions and mental states of cultural group members (Krane & Baird, 2005). To this end, in the current study we tested the study hypotheses with athletes from both the UK and Malaysia to provide a more comprehensive understanding of the ubiquity of the study findings between these two cultures. These two specific cultures were selected because there are notable differences between these two cultures with respect to coach development. Whereas in the UK there is a strong emphasis on performance and competitive success in coach development (The National Coaching Foundation, 2008), in Malaysia the primary objective of coaching relates to mass participation and health-based outcomes (National Sport Policy, 2009). Thus, we tested our hypotheses in these two contrasting cultures to determine whether the predicted relationships were robust despite clear cultural differences in approaches to coach development.

The current research

The primary aim of the current study was to examine whether athletes' perceptions of their coach's effectiveness predicted variables representing the four athlete-level outcomes of effective coaching proposed by Côté and Gilbert (2009). A secondary aim was to determine whether these predictions were consistent between athletes from the UK and Malaysia. Based on the reviewed literature, we aimed to test the following a priori hypotheses: (a) athletes' perceptions of their coach's motivation effectiveness would positively predict athletes' perceptions of the coach-athlete relationship (Feltz et al., 1999; Jowett & Ntoumanis, 2004), (b) athletes' perceptions of their coach's motivation effectiveness would positively predict athletes' sport confidence (Boardley et al., 2015; Feltz et al., 1999), (c) athletes' perceptions of their coach's technique effectiveness would positively predict athletes' perceptions of their sport competence (Feltz et al., 1999; Vierimaa et al., 2012) and (d) athletes' perceptions of their coach's character building effectiveness would positively predict athletes' moral identity (Boardley et al., 2008; Boardley & Kavussanu, 2009; Feltz et al., 1999).

Method

Participants

UK Sample. Male (n = 148) and female (n = 121) athletes were recruited from three team (volleyball [n = 46], hockey [n = 34] and basketball [n = 50]) and individual (squash [n =47], table tennis [n = 48] and golf [n = 44]) sports in the midlands region of the United Kingdom; various competitive standards were represented (i.e., local = 25, university = 105, regional = 79, national = 24, international = 4). Athletes' ages ranged from 16 to 41 years (M = 21.07, SD = 3.23), sport experience from one to 28 years (M = 7.94, SD = 4.21) and time with their current coach from three months to five years (M = 3.83, SD = 1.21).

Malaysia Sample. Male (*n= 146*) and female (*n = 138*) athletes from the same three team (volleyball [*n* = 49], hockey [*n* = 47] and basketball [*n* = 50]) and individual (squash [*n* =44], table tennis [*n* = 47] and golf [*n* = 47]) sports as for the UK sample were recruited in the peninsular region of Malaysia; a similar range of competitive standards to the UK sample were represented (i.e., local = 59, university = 97, regional = 26, national = 52, and international = 9). Athletes' ages ranged from 17 to 28 years (*M* = 20.02, *SD* =1.73), sport experience from one to 12 years (*M* = 5.22, *SD* = 2.87) and time with their current coach from three months to five years (*M* = 3.05, *SD* = 1.37).

Measures

Coaching Effectiveness. An adapted version of the Coaching Efficacy Scale (CES; Feltz et al., 1999) was used to measure athletes' perceptions of their coach's effectiveness (Boardley et al., 2008; Kavussanu et al., 2008). We used three of the four subscales from the adapted scale: motivation (7 items), technique (6 items) and character building (4 items). Instructions informed athletes that coaches differ in their ability to positively affect and improve the learning and performance of their athletes, before asking them to rate how effective their coach was for each of the 17 items using an 11-point scale ranging from 0 (*not at all effective*) to 10 (*extremely effective*). Example items were "build the self-esteem of his/her players" (motivation), "demonstrate the skills of his/her sport" (technique), and "instill an attitude of good moral character" (character building). This scale has been used successfully with university athletes (e.g., Kavussanu et al., 2008) and Boardley et al. (2008) reported alpha coefficients of .92 for motivation, .85 for technique, and .88 for character building, and also provided evidence for its construct validity.

Connections. The coach-athlete relationship was assessed using the 11-item Coach Athlete Relationship-Questionnaire (CART-Q; Jowett & Ntoumanis, 2004). This

questionnaire is composed of three subscales that break down the coach-athlete relationship into closeness (4 items), commitment (3 items) and complementarity (4 items). Example items are "I trust my coach" (closeness), "I feel committed to my coach" (commitment), and "When I am coached by my coach, I feel responsive to his/her efforts" (complementarity). Athletes' responded using a 7-point scale ranging from 1 (*not at all*) to 7 (*extremely*). Evidence for the construct validity of this scale has been provided (e.g., Jowett & Meek, 2002), as well for the internal consistency of its subscales (e.g., alpha coefficients ranged from .82 to .89; Jowett & Ntoumanis, 2004).

Confidence. Sport confidence was assessed using the self-confidence subscale from the Revised Competitive State Anxiety-2 (CSAI-2R; Cox, Martens, & Russell, 2003). This subscale consists of five items (e.g., "I feel self-confident") that athletes respond to using a 4-point scale ranging from 1 (*not at all)* to 4 (*very much so*). The instructions provided to athletes were designed to capture trait sport confidence (i.e., "indicate how you *generally* feel"). The factorial validity of the CSAI-2R has been supported in a number of studies (e.g., Cox et al., 2003; Terry & Munro, 2008), as has its internal consistency (alpha coefficients of .84 for individual-sport athletes and .87 for team-sport athletes [Lundqvist & Hassmén, 2005]).

Competence. Sport competence was measured using an adapted version of the Sport Competence Inventory from Causgrove Dunn et al. (2007), which assesses athletes' perceived technical, tactical and physical competence in their sport. In the instructions, technical skills were described as an athlete's ability to move and perform the tasks necessary to achieve success in his/her sport (e.g., passing, shooting, guarding and skating). Tactical skills were described as focusing on the specific actions and decisions that athletes make during competition to gain an advantage over their opponents (e.g., decision-making, reading the

play and strategy). Finally, physical skills were described as those relating to physical fitness and functional qualities that allow athletes to perform sports skills and meet a sport's physical demands (e.g., speed, agility and endurance). Once these descriptions had been provided athletes were asked to rate their competence for the three aspects of competence using a 5-point scale ranging from 1 (*not at all competent*) to 5 (*extremely competent*). Scores for the three items were then averaged to provide an overall indicator of sport competence. This scale has been shown to be a valid indicator of sport competence in previous studies (e.g., Dirks, Treat, & Weersing, 2007; Senko & Harackiewicz, 2002), and Causgrove Dunn et al. (2007) provided evidence for its internal consistency (alpha coefficient of .86).

Character. Character was measured using a 5-item instrument Moral identity developed by Aquino and Reed (2002) that conceptualizes character as a cognitive schema organized around nine moral traits (e.g., compassionate, kind, hardworking, fair, helpful, caring, friendly, honest and generous). Athletes were asked to read these nine traits and then respond to five items (e.g., "Being someone who has these characteristics is an important part of who I am") using a 7-point scale ranging from 1 *(strongly disagree)* to 7 *(strongly agree*). Evidence supporting the construct validity and internal consistency (alpha coefficients of .83 and .85 [Reed & Aquino, 2003]) of this scale has been presented in several studies (Aquino, Reed, Thau, & Freeman, 2007; Reed & Aquino, 2003).

Procedures

UK Sample. After receiving approval from the University Ethics Committee, head coaches of teams from the six sports were contacted and asked for the opportunity to speak with the athletes they coach and invite them to participate in the study. For coaches who agreed to permit access to the athletes they coached, convenient times and dates for data collections following training sessions were scheduled. Prior to data collection, athletes were

informed verbally and through an information sheet that participation was voluntary, they were free to withdraw at any point and all data collected would be fully confidential. All potential participants were also provided with the opportunity to have any questions answered, and reminded that honesty in responses was vital and responses would be used for research purposes only. Informed written consent was then obtained from athletes who volunteered to participate, before they then completed the questionnaire pack, which took approximately 15 to 20 minutes to complete. Finally, coaches and athletes were then thanked for their support. Data collection took place over a four-month period in the middle of the competitive season and all data were collected by the first author.

Malaysian Sample. Similar procedures to those used for the UK sample were used to collect data in Malaysia. All participants were fluent in English as they learnt it as part of their University curriculum so there was no need for any translation or adjustment of the questionnaire pack for data collection in Malaysia. Questionnaire packs were printed locally in Malaysia by a nominated representative who was trained in the data collection procedures. Data collection took place over a three-month period in the middle of the competitive season. Completed questionnaires were sent to the UK for data entry and analysis via a secure international courier.

Results

Descriptive Statistics, Scale Reliabilities and Correlational Analyses

All data analyses were conducted using SPSS version 22.0. Descriptive statistics, Cronbach's (1951) alpha coefficients and bivariate Pearson correlations for all study variables are presented in Table 3.1. Alpha coefficients indicated acceptable to excellent levels of internal reliability (Nunnally, 1978) for all scales in both the UK and Malaysian samples. On average, both UK and Malaysia athletes perceived their coach to be quite effective for all four

dimensions of coaching effectiveness and scored themselves moderately highly for all four outcomes. Pearson correlations were interpreted in accordance with Cohen's (1992) guidelines on effect sizes. In both the UK and Malaysian samples, the four dimensions of coaching effectiveness were strongly and positively interrelated and athletes' perceptions for all dimensions of coaching effectiveness were moderately and positively interrelated with all athlete-level outcomes.

Table 3.1: *Descriptive Statistics, Alpha Coefficients and Zero Order Correlations for UK (N = 269) and Malaysia (N = 284) Samples*

	Variable	*M*	*SD*	1	2	3	4	5	6	7
	UK Sample									
1	Motivation Effectiveness	7.72	1.13	.88						
2	Technique Effectiveness	7.61	1.22	.74**	.90					
3	Character Building Effectiveness	7.97	1.17	.80**	.77**	.82				
4	Sport Competence	3.50	0.61	.15*	.14*	.19**	.70			
5	Sport Confidence	2.90	0.53	.27**	.19**	.20**	.44**	.83		
6	Moral identity	4.36	0.50	.15**	.19**	.22**	.14*	.12*	.72	
7	Connection	5.65	0.82	.53**	.47**	.43**	.13*	.22**	.15**	.92
	Malaysia Sample									
1	Motivation Effectiveness	8.00	1.49	.92						
2	Technique Effectiveness	8.06	1.51	.93**	.93					
3	Character Building Effectiveness	8.13	1.55	.91**	.92**	.90				
4	Sport Competence	3.62	0.69	.41**	.40**	.37**	.86			
5	Sport Confidence	3.28	0.46	.41**	.40**	.42**	.48**	.82		
6	Moral Identity	4.31	0.70	.19**	.21**	.23**	.09	.23**	.76	
7	Connection	5.76	0.88	.63**	.61**	.62**	.44**	.45**	.27**	.95

Notes. Alpha coefficients are presented on the diagonal. **Correlation significant at the $p < .01$; *Correlation is significant at the $p < .05$.

Multiple Hierarchical Regression Analyses

A series of hierarchical multiple regression analyses were performed to test the main study hypotheses. For each regression, sex, sport experience and sport type (i.e., team/individual) were entered in an initial step to control for any effects of these variables on the dependent variables. Then, in a subsequent step the coaching effectiveness dimension hypothesized to predict the relevant dependent variable was entered; the results of these analyses are presented in Table 3.2.

Four multiple regressions were conducted with both datasets. First, for the analysis predicting connection, in the UK data the control variables collectively explained 7% of its variance in the initial step; the subsequent step demonstrated motivation effectiveness to be a significant positive predictor of connection, explaining an additional 29% of its variance. In the Malaysian data the control variables accounted for 9% of the variance in connection, and motivation effectiveness accounted for a further 41%. Second, for the analysis predicting sport confidence, in the UK data the control variables collectively explained 5% of its variance in the initial step; the subsequent step demonstrated motivation effectiveness to be a significant positive predictor of sport competence, explaining an additional 14% of its variance. In the Malaysian data the control variables accounted for 3% of the variance in sport confidence, and motivation effectiveness accounted for an additional 19%.

Third, for the analysis predicting sport competence, in the UK data the control variables collectively explained 3% of its variance in the initial step; the subsequent step demonstrated technique effectiveness to be a significant positive predictor of sport competence, explaining an additional 7% of its variance. In the Malaysian data the control variables accounted for 7% of the variance in sport competence, and technique effectiveness accounted for an additional 19%. Finally, for the analysis predicting moral identity, in the UK

data the control variables collectively explained 3% of its variance in the initial step; the subsequent step demonstrated character building effectiveness to be a significant positive predictor of moral identity, explaining an additional 7% of its variance. In the Malaysian data the control variables accounted for 10% of the variance in moral identity, and character building effectiveness accounted for a further 17%.

Table 3.2: *Regression of Athlete Outcomes on Perceived Coaching Effectiveness Dimensions for UK (N =269) and Malaysia (N =284) Samples*

	Variable	*b*	SE B	β	*t*	R^2	*F* Change
1	**Connection**						
	United Kingdom						
	Step 1						7.06
	Sex	.37	.10	.22	3.70***		
	Sport Experience	.00	.01	.03	.60	.07	
	Individual vs. Team	.22	.09	.14	2.39*		
	Step 2						80.81
	Motivation Effectiveness	.34	.03	.48	8.98***	.29	
	Malaysia						
	Step 1						9.83
	Sex	.47	.10	-.02	-.46		
	Sport Experience	.07	.01	.23	4.01***	.09	
	Individual vs. Team	.31	.10	.18	3.13**		
	Step 2						
	Motivation Effectiveness	.35	.02	.60	12.34***	.41	152.27
2	**Confidence**						
	United Kingdom						
	Step 1						5.24
	Sex	-.09	.06	-.08	-1.36		
	Sport Experience	.02	.00	.19	3.19*	.05	
	Individual vs. Team	-.00	.06	.00	-.05		
	Step 2						27.65
	Motivation Effectiveness	.14	.02	.31	5.25***	.14	
	Malaysia						
	Step 1						3.62
	Sex	-.10	.05	-.11	-1.91		
	Sport Experience	.01	.01	.08	1.44	.03	
	Individual vs. Team	-.11	.05	.10	2.11*		
	Step 2						54.67
	Motivation Effectiveness	.13	.01	.42	7.39***	.19	

3	**Competence**					
	United Kingdom					
	Step 1					3.24
	Sex,	-.20	.07	-.16	-2.61**	
	Sport Experience,	.00	.00	.05	.85	.03
	Individual vs. Team	.05	.07	.04	.71	
	Step 2					11.55
	Technique Effectiveness	.11	.03	.21	3.40**	.07
	Malaysia					
	Step 1					7.04
	Sex,	.03	.08	.02	.43	
	Sport Experience,	.02	.01	.08	1.45	.07
	Individual vs. Team	.33	.08	.23	4.12***	
	Step 2					41.30
	Technique Effectiveness	.16	.02	.36	6.42***	.19
4	**Moral Identity**					
	United Kingdom					
	Step 1					2.96
	Sex,	.05	.06	.05	.86	
	Sport Experience,	.01	.00	.10	1.61	.03
	Individual vs. Team	-.15	.06	-.15	-.2.48*	
	Step 2					10.82
	Character Building Effectiveness	.08	.02	.20	3.29**	.07
	Malaysia					
	Step 1					10.96
	Sex,	.32	.07	-.23	-4.06***	
	Sport Experience,	.03	.01	.12	2.21*	.10
	Individual vs. Team	-.27	.08	.19	-3.37**	
	Step 2					23.84
	Character Building Effectiveness	.12	.02	.27	4.88***	.17

Note. Years of experience and age are expressed in years. Sex was coded 0 for females and 1 for males; Individual was coded 0 and 1 for Team respectively.*p < .05, **p < .01, ***p < .001

Discussion

Sport coaches fulfil numerous roles aimed at influencing and enhancing athletes' learning and performance. One way of evaluating how effectively coaches are accomplishing these roles is by assessing a range of desired outcomes proposed to result from effective coaching. Drawing upon the conceptual arguments of both Feltz et al. (1999) and Côté and Gilbert (2009), in the current study we sought to investigate whether team- and individual-sport athletes' perceptions of their coach's effectiveness were predictive of four athlete-level outcomes. Moreover, we aimed to examine whether the predicted effects would be supported in athletes from both the UK and Malaysia. Over the following paragraphs we review and discuss the findings relating to these study aims.

First, we hypothesized that athletes' perceptions of their coach's motivation effectiveness would positively predict levels of athlete connection, as represented by the strength of the coach-athlete relationship (Côté & Gilbert, 2009; Jowett & Cockerill, 2002; Jowett & Meek, 2000). Regression analyses provided support for this hypothesis, with athletes' perceptions of their coach's motivation effectiveness explaining 29% and 41% of the variance in the strength of the coach-athlete relationship – beyond that explained by control variables – for athletes from the UK and Malaysia, respectively. Thus, consistent with our hypothesis, when athletes perceived their coach to be effective in developing the psychological skills and motivational states of athletes they tended to report greater connection with their coach. Whilst this may be due to the coach's ability to develop coach-athlete cohesion as argued previously, other mechanisms may also be involved. For instance, Myers, Wolfe, Maier, Feltz and Reckase (2006) found soccer and ice hockey players' perceptions of their coach's motivation competency positively predicted satisfaction with their coach. It is therefore possible that when coaches engage in behaviors perceived as

effective in developing athletes' psychological preparation and skills this may result in athletes being more satisfied with their coach leading to stronger coach-athlete relationships being developed. Thus, increased perceptions of motivation effectiveness in athletes may be important for optimizing coach-athlete relationships and therefore facilitating positive coaching environments for both athletes and coaches.

We also anticipated athletes' perceptions of their coach's motivation effectiveness would positively predict athletes' sport confidence. Regression analyses supported this hypothesis, as perceptions of motivation effectiveness explained 14% and 19% of the variance in athletes' sport confidence for athletes from the UK and Malaysia, respectively, beyond that explained by control variables. Thus, consistent with our hypothesis, when athletes perceived their coach to be effective in developing the psychological skills and motivational states of athletes, they tended to report increased sport confidence. Coaches perceived as being more effective in motivation effectiveness may therefore engage more frequently in coaching behaviors seeking to develop athletes' psychological skills such as imagery, goal setting and self-talk which may help athletes to increase their confidence levels. Additionally, coaches perceived as more effective in motivation effectiveness may also utilize efficacy-enhancing coach behaviors such as instruction-drilling, acting confident themselves, and encouraging positive talk (see Vargas-Tonsing, Myers, & Feltz, 2004). In sum, this finding supports the potential importance of motivation effectiveness in enhancing athletes' sport confidence.

Next, we tested whether athletes' perceptions of their coach's technique effectiveness positively predicted athletes' levels of sport competence. Regression analyses supported the relevant hypothesis, with perceptions of technique effectiveness explaining 7% and 19% of the variance in athletes' perceptions of their sport competence from the UK and Malaysia, respectively, beyond that explained by the control variables. Thus, when perceiving their

coach to be high in technique effectiveness, in general athletes perceived themselves to be more competent in technical, tactical and physical aspects of sport. Perceived technique effectiveness pertains to coaches' abilities to utilize coaching behaviors that provide athletes with opportunities to master their technical, tactical and physical sport skills. Therefore, it appears the more coaches spend time communicating information regarding athletes' technical, tactical and physical development, the more athletes feel competence (Vierimaa et al., 2012). Thus, these finding reinforce the importance of coach technique effectiveness as an ability to enhance athletes' sport competence.

Finally, we hypothesized athletes' perceptions of their coach's character building effectiveness would positively predict athletes' moral identity. Regression analyses supported the relevant hypothesis, with perceptions of character building effectiveness explaining 7% and 17% of the variance in athletes' perceptions of their moral identity from the UK and Malaysia, respectively, beyond that explained by the control variables. This finding is consistent with past research that has shown perceptions of character building effectiveness positively predict athletes' prosocial behavior (Boardley et al., 2008) and perceptions of character building competency negatively predict athletes' antisocial opponent and teammate behavior and positively predict prosocial opponent behavior (Boardley & Kavussanu, 2009). Thus, it would seem athletes' perceptions of their coach's abilities regarding character development are linked with athletes' moral identity and moral behavior.

Overall, our findings provide support for the conceptual framework proposed by Côté and Gilbert (2009) and their assertion that effective coaching should lead to development of athletes' connection, confidence, competence and character. The current research has provided empirical support for the latter aspects of this proposed framework by linking perceptions of coach effectiveness with indices of the four athlete-level outcomes specified.

Further, although the three types of coaching knowledge specified in Côté and Gilbert's (2009) definition of coaching effectiveness (i.e., professional, interpersonal and intrapersonal) were not specifically investigated, all three types of coaching knowledge are likely to underpin effective coaching behaviors across the three dimensions of coaching effectiveness investigated. For instance, professional knowledge is likely to inform coaches' diagnostic and skill-development behaviors and is therefore essential for high levels of technique effectiveness. Similarly, interpersonal knowledge is expected to be central to coaching behaviors aimed at establishing connections with athletes and therefore should undergird motivation effectiveness. Finally, intrapersonal knowledge is essential for effective reflective practice and therefore is likely to support all aspects of coach development and learning across the various dimensions of coach effectiveness. Future researchers are encouraged to specifically investigate these proposed links between coach knowledge, behavior and effectiveness.

A further aim of this study was to determine whether our findings were consistent between athletes from the UK and Malaysia. Overall, our findings were generally consistent between the two cultures, with all four of our main hypotheses been supported in both the UK and Malaysian data. However, closer examination of our findings shows that effect sizes were consistently larger in the Malaysian data than in the UK data. Whilst it is difficult to identify what specifically may explain this, it is possible this difference may be related to the differences in coach development between the two countries identified earlier. More specifically, it may be that the increased focus on participation and health-related outcomes in Malaysia allows coaches to tailor their coaching towards the specific needs of athletes without having to also concern themselves with the performance-related outcomes coaches are also asked to focus on in UK coaching system. This may lead to a strengthening of the link

between athletes' perceptions of their coach's effectiveness and athlete-level outcomes seen in the current data. However, as we didn't specifically look at this issue, future researchers are encourages to specifically investigate factors that may lead to larger effect sizes such as those seen in the Malaysian data in comparison to the UK data.

Limitations and Future Directions

The current study revealed numerous interesting findings. Despite this, several limitations are evident and the findings should be interpreted with these in mind. First, self-report measures were used to assess all study variables. Although fully validated measures were used throughout, it is still possible the study findings were affected to some degree by issues such as social desirability (Reynolds, 1982) and anchoring effects and time pressure (see Paulhus & Vazire, 2007). Future researchers could look to replicate the study findings using alternate methods of assessment such as other-reports and objective measures of athlete outcomes (e.g., performance in skill tests, observed pro-social behavior). Second, the study findings are also limited by our use of a cross-sectional design. Such designs are useful when conducting an initial exploratory study such as this one, but are limited in that they unable to determine cause and affect relationships between study variables (Carlson & Morrison, 2009). Future researchers could employ an experimental design whereby aspects of coaching effectiveness are manipulated to determine their effect on one or more of the athlete outcomes proposed by Côté and Gilbert (2009). Next, although we investigated one dependent variable for each of the four athlete-level outcomes proposed by Côté and Gilbert (2009), many other variables could have been selected for investigation. As such, future researchers are encouraged to investigate addition variables that may stem from effective coaching, such as enjoyment and moral disengagement. Further, researchers should also look to extend the present findings by studying links between coaching effectiveness and athlete-level outcomes in cultures beyond

the two investigated here. Finally, in the Malaysian sample, the inter-correlations for coaching efficacy dimensions were very high. Although only single efficacy dimensions were entered into each regression, this does not hide from the statistical evidence that suggests the Malaysian sample could not distinguish between the different measures of the coaching efficacy dimensions.

Conclusion

In conclusion, the current study linked athletes' perceptions of their coach's effectiveness with various athlete-level outcomes. In doing so it provided support for Côté and Gilbert's (2009) conceptual framework across a range of team and individual sports and in two divergent cultures. Additionally, the study provided further support for the relevance of the coaching efficacy model (Feltz et al., 1999) for research on coaching effectiveness. Overall our findings provide support for the potential importance of athletes' perceptions of their coach's effectiveness for the optimal development of their competence, connection, confidence and character.

CHAPTER 4

DO ATHLETES' PERCEPTIONS OF THEIR COACH'S EFFECTIVENESS MEDIATE LONGITUDINAL EFFECTS OF TRANSFORMATIONAL LEADERSHIP BEHAVIOUR ON ATHLETE OUTCOMES?

Abstract

The present study aimed to investigate whether athlete perceptions of coaching effectiveness mediate the longitudinal relationships between perceptions of transformational leadership (TL) and athlete outcomes. 174 team-sport athletes (Rugby = 35, Basketball = 46, Football = 93) participated by completing psychometric measures of the study variables at two time points (retention rate = 93.5%). Data analyses revealed athletes' perceptions of their coach's character building effectiveness at Time 1 did not mediate a negative predictive effect of perceptions of coach appropriate role model behavior at Time 1 on athlete antisocial opponent behavior at Time 2. However, such perceptions did mediate a negative effect of perceptions of coach appropriate role model behavior at Time 1 on athlete antisocial teammate behavior at Time 2. Further, athletes' perceptions of their coach's motivation effectiveness at Time 1 mediated a positive effect of coach individual consideration behavior at Time 1 on trust at Time 2. The findings of this study suggest athletes' perceptions of their coach's transformational leadership behavior may at times influence athlete outcomes through changes in athletes' perceptions of their coach's effectiveness.

Keywords: *appropriate role model, character building effectiveness, antisocial behavior, trust, team sport*

Introduction

In sport, coaches hold an important leadership role as they are responsible for guiding the development of knowledge, skills and psychological well-being of the athletes they coach (Callow, Smith, Hardy, Arthur, & Hardy, 2009). Transformational leadership is defined as a leader's ability to inspire, empower and cause others to achieve levels of performance above what they would normally expect to be possible (Avolio & Bass, 1995). Unsurprisingly, transformational leadership theory (Bass & Avolio, 1994) has been a prominent guiding theory in research seeking to understand leadership behavior in sport (e.g., Beauchamp, Barling, & Morton, 2011; Callow et al., 2009). Such research has identified positive effects of coaches' transformational leadership on athlete-level outcomes (e.g., Charbonneau, Barling, & Kelloway, 2001). Another factor that has been linked with desirable athlete-level outcomes is coaching effectiveness (Côté & Gilbert, 2009; Horn, 2008). Moreover, models of coaching effectiveness suggest athletes' perceptions of their coach's effectiveness are based upon their perceptions of coach behavior (Horn, 2002; Smoll & Smith, 1989). Therefore, it is possible the effects of athletes' perceptions of their coach's transformational leadership behavior on athlete outcomes are at least in part mediated through athletes' perceptions of their coach's effectiveness. Thus, the primary aim of the current study was to test this supposition by investigating the relations among transformational leadership behavior, coaching effectiveness and relevant athlete-level outcomes.

The rationale to have some advancement and understanding towards coaching effectiveness framework is included important principles in coach behavior concepts. Clearly, coaches play an important leadership role and responsible for guiding the development of knowledge, skills and psychological well-being of the athletes they coach (Callow, Smith, Hardy, Arthur, & Hardy, 2009). Past research has identified positive effects

of coaches' transformational leadership on athlete-level outcomes (Charbonneau, Barling, & Kelloway, 2001). Alongside of continuing to comprehend the coaching effectiveness and the conceptual arguments from Callow et al., 2009; Côté & Gilbert, 2009; Horn, 2008), the current study sought to investigate whether key aspect of coaching effectiveness can mediate specific dimension of transformational leadership to influence athlete outcomes on team-sport athletes. A further factor that has been linked with similar athlete-level outcomes is coaching effectiveness (Côté & Gilbert, 2009; Horn, 2008). Therefore, in this study the potential to investigate the effects of athletes' perceptions of their coach's transformational leadership behavior on athlete outcomes were at least in part mediated through athletes' perceptions of their coach's effectiveness. Therefore, coach transformational leadership behavior predicts athlete outcomes at both an individual and team level. Transformational leadership theories have important effect on team process and outcomes (Dvir, Eden, Avolio, Bass & Shamir, 2002). In relations to coaches' leadership behavior, Horn (1992), also revealed that the type of leadership behavior displayed by the coach can have a significant effect on the performance and psychological well-being of the athlete.

According to Avolio and Bass (2004), transformational leadership is a form of leadership that occurs when leaders expand and enrich the capacity of those whom they lead. Based on Bass and Riggio (2006), four key dimensions of transformational leadership have been identified. First, *idealized influence* represents being an exemplary role model by treating followers fairly and equally, and engaging in ethically appropriate conduct. Second, *inspirational motivation* involves motivating others to commit and work towards a clear vision, and to perform beyond their normal level. Third, *intellectual stimulation* is about challenging normal practices and advancing invention and creativity in followers. Finally, *individual consideration* refers to treating followers on an individual basis by seeking to

understand and address the needs of each individual. As such, transformational leadership can be represented by these four primary dimensions.

In sport, research with adolescent athletes has shown coach transformational leadership behavior predicts athlete outcomes at both an individual and team level (Price & Weiss, 2013). For example, coach's transformational leadership behavior has been positively correlated with satisfaction with the coach and the effort that athletes give during training (Rowold, 2006), as well as increased satisfaction and commitment (Saybani, Yusof, Soon, Hassan & Zardoshtan, 2013). Further, transformational leadership behavior has been linked to improved effort (Kirkpatrick & Locke, 1996), higher levels of self-efficacy (Kark, Shamir, & Chen, 2003), enhanced satisfaction (Hater & Bass, 1988; Koh, Steers, & Terborg, 1995) and task performance (Kirkpatrick & Locke, 1996; Sosik, Avolio, & Kahai, 1997). Finally, empirical research has revealed transformational leadership has been linked with skill development and motivation beyond expected levels (Jung & Sosik, 2002). Thus, transformational leadership with a wide range of desirable athlete outcomes, and within this current study we expect coaches' utilization of transformational leadership behaviors to be linked with key athlete outcomes.

It is possible that athletes' perceptions of their coach's transformational leadership behaviors influence such athlete outcomes by influencing athlete perceptions of their coach's effectiveness. One theoretical framework that has proved useful in aiding our understanding of coaching effectiveness is the coaching efficacy model (Feltz, Chase, Moritz, & Sullivan, 1999). Based upon this framework, researchers have defined coaching effectiveness as the extent to which coaches can implement their knowledge and skill to positively affect the learning and performance of the athletes they coach (Boardley, Kavussanu, & Ring, 2008; Kavussanu, Boardley, Jutkiewicz, Vincent, & Ring, 2008). Feltz et al. (1999) described four

sub-dimensions of coaching efficacy: motivation effectiveness relates to athletes' ratings of their coach's ability to develop the psychological skills and motivational states of the athletes they coach; game strategy effectiveness represents athletes' assessments of their coach's ability to lead and coach athletes to a successful performance during competition; technique effectiveness concerns athletes' evaluations of their coach's instructional and diagnostic abilities; and finally, character building effectiveness pertains to athletes' perceptions of their coach's ability to influence athletes' personal development and positive attitudes toward sport. Importantly, this dimensionality has been supported when researchers assess athletes' perceptions of their coach's effectiveness (Boardley et al., 2008; Kavussanu et al., 2008).

Specific dimensions of coaching effectiveness can be conceptually linked with aspects of transformational leadership behavior. For example, coach individual consideration behaviors may increase perceptions of coach motivation effectiveness. Specifically, when a coach considers athletes on an individual basis by addressing his/her individual needs, athletes are likely to perceive such coaches as more effective in motivating and psychologically preparing them. Further, coaches seen to be engaging more frequently in appropriate role model behaviors may well be seen as more effective in character building. More precisely, athletes who consider their coach treats them fairly and equally and engages frequently in behaviors reflective of an exemplary role model is likely to be seen as effective in positively influencing athletes' personal development and attitudes toward sport. Although plausible, such links between transformational leadership behaviors and perceptions of coaching effectiveness have not been tested empirically to date.

Given perceptions of coaching effectiveness are proposed to be based on athletes' perceptions of their coach's behavior (see Horn, 2008), and that transformational leadership behavior and perceptions of coaching effectiveness have been linked with similar athlete

outcomes, it is possible transformational leadership behaviors influence such outcomes through changes in athletes' perceptions of their coach's effectiveness. For instance, athletes' perceptions of their coach's idealized influence behavior may impact athletes' antisocial behavior (i.e., behavior intended to harm or disadvantage another player; Sage, Kavussanu, & Duda, 2006) via changes in their perceptions of their coach's character-building effectiveness. This possibility is supported by propositions that coaches who demonstrate idealized influence behavior would be expected to treat athletes fairly and equally and engage in frequent prosocial and infrequent antisocial conduct (see Turnnidge & Côté, in press). In turn, such behaviors would be expected to bolster athletes' perceptions of their coach's ability to positively influence athletes' personal development and positive attitudes toward sport, therefore heightening perceptions of character building effectiveness (see Boardley et al., 2008). In support of this, Boardley and Kavussanu (2009) found athletes' perceptions of their coach's character building competency negatively predicted athletes' antisocial behavior towards teammates and opponents. Thus, athletes' perceptions of their coach's character-building effectiveness may mediate a negative effect of their coach's idealized influence behavior on antisocial behavior.

Similarly, athletes' perceptions of their coach's motivation effectiveness may mediate a positive predictive effect of individual consideration behavior on trust (i.e., when the leader has similar perspectives with follower, trust should be associated on the nature of their relationship; Yang & Mossholder, 2010; Whitener, Brodt, Korsgaard, & Werner, 1998). Specifically, coaches who are perceived to frequently seek to understand and address the needs of individual athletes may be more likely to be perceived as effective in psychologically preparing their athletes and establish a strong relationship with them, which should in turn lead to increased levels of trust (i.e., see McAllister, 1995). In support of this proposition,

both transformational leadership behavior (Kirkpatrick & Locke, 1996; Podsakoff, Mackenzie, Moorman, & Fetter, 1990) and leader effectiveness (Bass, 1990; Hogan, Murphy, & Hogan, 1994) have previously been positively linked with trust. Thus, perceptions of their coach's motivation effectiveness may mediate a positive effect of athletes' perceptions of their coach's individual consideration behavior on trust.

The current research

The overarching aim of the present study was to investigate whether athletes' perceptions of their coach's effectiveness mediated predictive effects of perceptions of their coach's transformational leadership behaviors on key athlete-level outcomes. Specifically, the study sought to determine whether athletes' perceptions of their coach's: (a) character building effectiveness mediated an effect of perceptions of coach appropriate role model behavior on athlete antisocial behavior and (b) motivation effectiveness mediated an effect of coach individual consideration behavior on trust. Moreover, the study aimed to address these aims across time, specifically hypothesizing that athletes' perceptions of their coach's: (a) character building effectiveness at Time 1 would mediate a negative effect of perceptions of coach appropriate role model at Time 1 on antisocial opponent behavior at Time 2, (b) character building effectiveness at Time 1 would mediate a negative effect of perceptions of coach appropriate role model behavior at Time 1 on antisocial teammate behavior at Time 2 and (c) motivation effectiveness at Time 1 would mediate a positive effect of perceptions of coach individual consideration behavior at Time 1 on trust at Time 2 (Boardley et al., 2008; Horn, 2008; Kark & Shamir, 2002; Kavussanu et al., 2008; Zue & Akhtar, 2014).

Method

Participants

A total of 174 team-sport athletes (Rugby = 35; Basketball = 46; Football = 93) participated in the study. The sample consisted of male (*n* = 91) and female (*n* = 83) athletes competing at university (*n* = 171) or regional (*n* =3) levels. Length of time with their coaches ranged from 1 to 4 years (*M* =1.36, *SD* = .75). Athletes' age ranged from 18 to 25 years (*M* = 20.15, *SD* = 1.37) and their sport experience ranged from one to 18 years (*M* = 9.32, *SD* = 4.72). On average they spent two to 16 hours per week training / competing in their sport (*M* = 6.37, *SD* 1.97).

Measures

Coaching Effectiveness. Eleven items from the coaching effectiveness scale (Boardley et al., 2008) were used to measure athletes' perceptions of their coach's motivation (7 items) and character building (4 items) effectiveness. Athletes were asked to rate how effective their coach was for each of the items using an 11-point scale ranging from 0 *(not at all effective*) to 10 (*extremely effective*). The stem for all items was "How effective is your coach in his/her ability to…", and example items are "…maintain confidence in his/her players" (motivation), and "…instill an attitude of good moral character" (character building). This scale has been shown to be a valid and reliable measure in research with university athletes (e.g., Boardley et al., 2008).

Transformational Leadership. Eight items from the Differentiated Transformational Leadership Inventory (DTLI; Callow et al., 2009) were used to measure athletes' perceptions of their coach's individual consideration (4 items), and appropriate role model (4 items) behaviors. Athletes were asked to rate each item using 5-point scale ranging from 1 (*not at all*) to 5 (*all of the time*). The stem for all items was "Our coach …" and example items are

"…recognized that different athletes had different needs" (Individual consideration), and "...led by example" (appropriate role model). Vella, Oades and Crowe (2012) provided evidence for the scale's internal consistency and validity.

Trust. A scale developed by Zhu and Akhtar (2014) was adapted to the sport context to assess athletes' trust in their coach. The scale consisted of 10 items that assess affect-based (e.g., "…my coach and I can both freely share our ideas, feeling and hopes") or cognition-based (e.g., "...my coach approaches his/her job with professionalism and dedication") trust. Items were rated using a 5-point scale ranging from 1 (*strongly disagree*) to 5 *(strongly agree*). Zhu and Akhtar (2014) presented evidence for the scale's internal consistency and factorial validity.

Antisocial behavior. 13 items from the Prosocial and Antisocial Behaviour in Sport Scale (PABSS; Kavussanu & Boardley, 2009) were used to measure athletes' frequency of engagement in antisocial opponent (8 items) and teammate (5 items) behavior. Athletes were asked to rate each of the items using 5-point scale ranging from 1 (*never*) to 5 (*very often*). The stem for all items was "While playing for my team, I..." and example items are "…physically intimidated an opponent" (antisocial behavior opponent) and "…verbally abused a teammate" (antisocial behavior teammates). Kavussanu and Boardley (2009) presented evidence for the scale's internal consistency and validity.

Procedures

Once ethical approval was gained through the University Ethics Committee, eight head coaches from teams participating in the relevant sports were contacted and provided with information about the study. All coaches agreed to provide access to training sessions to invite athletes from their teams to participate in the study, and convenient dates for data collections were agreed. Two dates were arranged for each team, coinciding with the start

and middle of the competitive season (retention rate = 93.5%). Once the study had been fully described (i.e., study aims, what participation involves, confidentiality of data, right to withdraw) to the athletes and any questions answered, informed written consent was obtained. Once this was done, each participant completed a questionnaire pack containing the previously described scales measuring coaching effectiveness, transformational leadership, antisocial behavior and trust; on average questionnaire completion took 15-20 minutes on each occasion. Completion of the questionnaire pack took place in private, away from the coach and other athletes, participants were assured their coach, and teammates would not be made aware of their responses at any time. At the end of the first collection point, players were briefed that subsequent data collection would take place 6-8 weeks after the initial collection. Following both data collections athletes were thanked.

Data analyses

Study data were first examined for missing scores. We only analyze cases with available data. Then the skewness and kurtosis were examined to identify values for normal distribution. Initially, descriptive statistics and Cronbach's (1951) alpha coefficients were examined. Bivariate correlations among all study variables were then calculated and interpreted using Cohen's (1988) guidelines (i.e., strong = .50, moderate = .30, and weak = .10). Finally, the mediation hypotheses were tested through mediated regression analyses using the SPSS process macro developed by Hayes (2013).

Results

Descriptive Statistics, Scale Reliabilities and Correlational Analyses

No missing score uses all information for data analyses. The skewness statistics demonstrated distribution is in the range of normality for all scales (indices for acceptable limits of ±2), (see Trochim & Donnelly, 2006; Field, 2000 & 2009; Gravetter & Wallnau, 2014), and Kurtosis statistics demonstrated distribution is in the range of normality for all scales except for trust at time 2 demonstrated 3.38 (indices for acceptable limits of ±2), (see George & Mallery, 2010). Cronbach's (1951) Alpha coefficients and correlations for study variables at the relevant time point are presented in Table 4.1.

Data were analyzed using SPSS version 22.0. Cronbach's alpha values demonstrated moderate to excellent levels of internal consistency for the seven subscales employed (Nunnally & Berstein, 1994). Bivariate correlations illustrated a strong correlation between athletes' perceptions of their coach's character building effectiveness and coach's appropriate role model behavior at Time 1. Further, there were weak-to-moderate negative correlations between perceptions of coach character building effectiveness and appropriate role model behavior at Time 1 and antisocial opponent behavior at Time 2. Also, there were moderate and weak-to-moderate negative correlations, respectively, between perceptions of coach character building effectiveness and appropriate role model behavior at Time 1and antisocial teammate behavior at Time 2. Finally, there was a strong positive correlation between perceptions of motivation effectiveness and individual consideration behavior at Time 1 and a medium positive correlation between perceptions of motivation effectiveness at Time 1 and trust at Time 2; there was no significant relationship between perceptions of individual consideration behavior at Time 1 and trust at Time 2.

Table 4.1: *Descriptive statistic, Alpha Coefficients, and Correlations among Variables of Athletes*

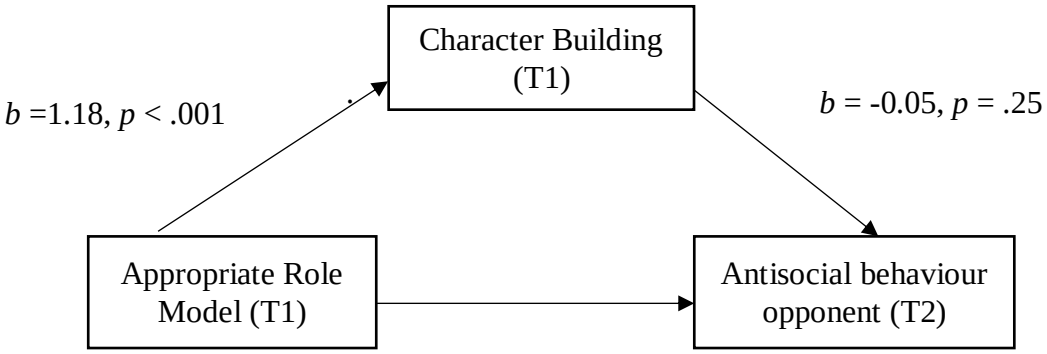
	Variables	M	SD	1	2	3	4	5	6	7
1	Motivation Effectiveness T1	7.15	1.26	*.90*						
2	Character Building Effectiveness T1	7.13	1.39	.73**	*.82*					
3	Appropriate Role Model T1	3.67	0.69	.59**	.58**	*.78*				
4	Individual Consideration T1	3.75	0.53	.55**	.49**	.65**	*.82*			
5	Trust T2	3.63	0.44	.24**	.13	.08	.12	*.77*		
6	Antisocial Opponent Behaviour T2	2.17	0.68	-.20**	-.17*	-.16*	-.13	.17*	*.82*	
7	Antisocial Teammate Behaviour T2	2.00	0.60	-.23**	-.29**	-.20**	-.08	.01	.63**	*.67*

Note. $N = 174$ (T2). Alpha coefficients (α) are presented on the diagonal.

**Correlation is significant at the .01 level (2-tailed). *Correlation is significant at the .05 level.

Mediation Analyses

Process for SPSS (Hayes, 2013) was used to test the mediational hypotheses of the study. First, it was hypothesized perceptions of character building effectiveness at Time 1 would mediate the relationship between appropriate role model behavior at Time 1 and athlete antisocial opponent behavior at Time 2. Results showed that although appropriate role model at Time 1 significantly predicted character building effectiveness at Time 1 (b = 1.18, t = 9.35, p < .001), it did have a significant direct predictive effect on antisocial opponent behavior at Time 2 (b = -.0.09, t = -1.07, p = > .05). However, character building effectiveness at Time 1 did not significantly predict antisocial opponent behavior at Time 2 (b = -.0.05, t = -1.16, p = > .05). Further, the total predictive effect of appropriate role model at Time 1 on antisocial opponent behavior at Time 2 was significant and negative (b = -.15, t = -2.14, p =.03). Thus, the indirect effect of appropriate role model at Time 1 on antisocial opponent behavior at Time 2 via character building effectiveness at Time 1 was not significant, (b = -.06, 95% BCa CI [-.17, .04]). This indirect effect represents 5.1% of the maximum value it could have been, and therefore reflects an indirect effect. The R^2 indicates that appropriate role model at time 1 explain 2.5% of the variance respectively. The main findings from these analyses are visually displayed in Figure 4.1.



Direct effect, b = -0.09, p > 0.05
Indirect effect, b = -0.06, 95% CI [-0.17, 0.04]

Figure 4.1: *Unstandardized regression coefficients or the relationship between appropriate role model (T1) and antisocial opponent behavior (T2) mediated by character building effectiveness (T1).*

Second, it was hypothesized perceptions of character building effectiveness at Time 1 would mediate the relationship between appropriate role model behavior at Time 1 and antisocial behavior teammate at Time 2. Results showed that appropriate role model at Time 1 significantly predicted character building effectiveness at Time 1 (b = 1.18 t = 9.35, p < .001), and it did have a significant direct predictive effect on antisocial teammate at Time 2 (b = -.0.04, t = -0.46, p >.05). Further, character building effectiveness at Time 1 significantly predicted antisocial behavior teammate at Time 2 (b = -.11, t = -2.97, p < .05). The total predictive effect of appropriate role model behavior at Time 1 on antisocial behavior teammate at Time 2 was significant and negative predicted, (b = -.17, t = -2.62, p < .05). Finally, the indirect effect of appropriate role model at Time 1 on anti-social teammate at Time 2 via character building effectiveness at Time 1 was significant (b = -.13, 95% BCa CI [-.24, -.05]). The R^2 value indicates appropriate role model at time 1 explain 3.8% of the variance respectively. This indirect effect being about 12.9% of the maximum value, and

therefore reflects indirect effect. The main findings from these analyses are visually displayed in Figure 4.2.

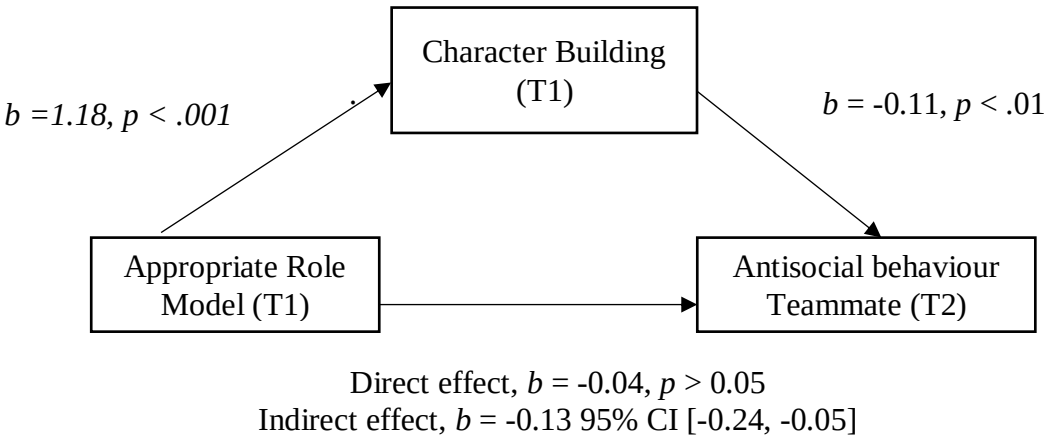


Figure 4.2: *Unstandardized regression coefficients or the relationship between appropriate role model (T1) and antisocial teammate (T2) as mediated by character building effectiveness (T1).*

Finally, it was hypothesized perceptions of motivation effectiveness at Time 1 would mediate the relationship between individual consideration at Time 1 and trust at Time 2. Results showed that individual consideration Time 1 significantly predicted motivation effectiveness at Time 1 (b = 1.28, t = 8.50, p < .001), it did have a significant direct predictive effect on trust at Time 2 (b = -.01, t = -1.77, p > .05). Further, motivation effectiveness at Time 1 showed significant predicts trust at Time 2 (b =.09, t =2.78, p <.05). However, the total predictive effect of individual consideration Time 1 on trust at Time 2 was not significant predicted (b =.09, t = 1.56, p > .05). Finally, the indirect effect of individual consideration Time 1 on trust Time 2 via motivation effectiveness Time 1 was significant effect (b =.11, 95% BCa CI [.03, .23]). The R^2 value indicates individual consideration at time 1 explain 1.4% of the variance respectively. This indirect effect being about 11.4% of the maximum value, and

therefore reflects indirect effect. The main findings from these analyses are visually displayed in Figure 4.3.

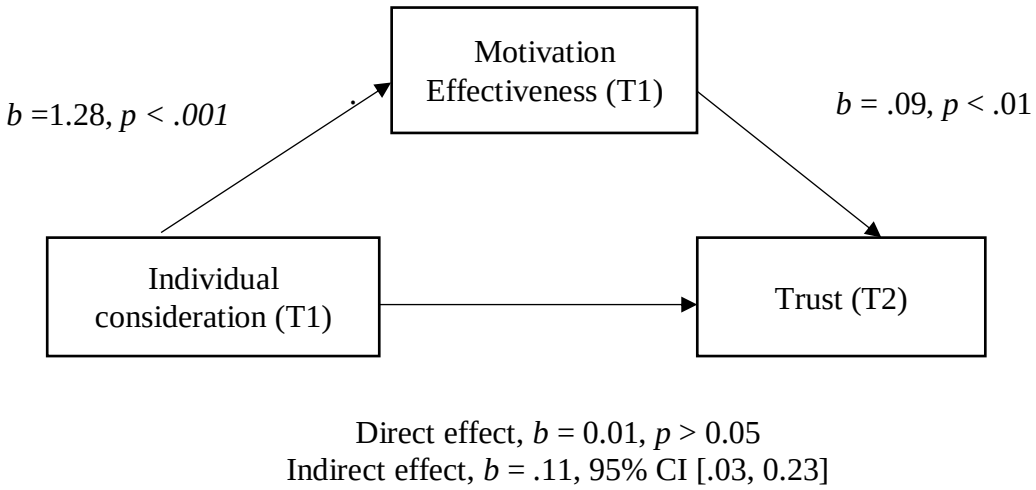


Figure 4.3: *Unstandardized regression coefficients or the relationship between individual consideration (T1) and trust (T2) as mediated by motivation effectiveness (T1).*

Discussion

Coaches who demonstrate transformational coaching behaviors can inspire their athletes by espousing ideal behavior, showing care, formulating and communicating a vision, and such behaviors should facilitate optimal learning and development in athletes (see Rowold, 2006; Vella, Oades, & Crowe ., 2013). As such, coaches engaging in such behaviors should be viewed as more effective than coaches who do not. Thus, drawing upon the conceptual arguments of Callow et al (2009), Côté and Gilbert (2009), Feltz et al. (1999) and Horn (2008), in the current study we sought to investigate whether key aspects of coaching effectiveness mediated predictive effects of associated dimensions of transformational leadership behavior on relevant athlete outcomes in team-sport athletes. Over the following paragraphs, we review and discuss the findings from this research.

First, the present study aimed to examine whether athletes' perceptions of their coach's character building effectiveness at Time 1 mediated a negative effect of perceptions of coach appropriate role model behavior at Time 1 on athlete antisocial opponent behavior at Time 2. However, contrary to the relevant hypothesis, a significant mediated effect was not identified. When looking at the two paths involved in the proposed mediational effect, there was a significant effect for the first of these. Specifically, there was a significant positive effect of athletes' perceptions of their coach's appropriate role behavior on their perceptions of their coach's character building effectiveness. Thus, coaches who were seen more frequently to lead by example and in an ethically appropriate manner were viewed as being more adept at influencing athletes' personal development and positive attitudes toward sport. However, the second of the two paths – from perceptions of character building effectiveness to antisocial opponent behavior – although in the anticipated direction, did not prove significant. Interestingly, past research has shown inconsistent effects for athlete perceptions of character building on antisocial behavior, with some studies showing the anticipated negative effect (e.g., Boardley & Kavussanu, 2009) whereas others have not (e.g., Boardley et al., 2008). The inconsistent effects of this dimension on antisocial behavior has recently been attributed to the character building dimension being overly focused on the promotion of positive social behaviors (e.g., prosocial behavior) and less so on the deterrence of negative social behaviors (e.g., antisocial behavior; see Boardley, in press). As such, it may be that character building effectiveness – as assessed here – does not sufficiently capture athletes' perceptions of their coach's capabilities to deter detrimental conduct toward opponents, leading to the weak and non-significant path between these two variables.

Second, we hypothesized athletes' perceptions of their coach's character building effectiveness at Time 1 would mediate a negative predictive effect of their perceptions of their coach's appropriate role model behavior at Time 1 on their antisocial teammate behavior at Time 2. Consistent with the relevant hypothesis, mediational analyses supported the presence of this effect. Thus, athletes who perceived their coach to engage more frequently in behaviors reflective of an ideal role model engaged less frequently in harmful behaviors toward their teammates, and this effect was partially explained through perceptions of their coach's ability to promote athletes' personal development and positive attitudes toward sport. This finding contrasts with that for antisocial opponent behavior, suggesting the presence of a key distinction between the explanatory pathways leading to these two types of antisocial behavior. More specifically, it seems athletes link coaches' abilities to influence athletes' development and positive attitudes with antisocial behavior toward teammates more strongly than they do antisocial behavior toward opponents. As such, it may be that athletes view harmful behavior toward teammates as more morally reprehensible than that towards teammates. Support for such differences can be found in research on social identity (i.e., the portion of one's self-concept derived from membership in a social group; Tajfel & Turner, 1986), which suggests increases in social identity can lead to favorable moral behaviors towards those in the in-group (i.e., one's teammates) compared to the out-group (i.e., one's opponents; see Bruner, Boardley, & Côté, 2014). Given this, it may be that in team sport athletes view antisocial behavior towards in-group members (i.e., teammates) as more morally reprehensible than they do equivalent behaviors towards the out-group (i.e., opponents). Thus, when integrated, the findings relating to our first two hypotheses suggest athletes' perceptions of their coach's character building may mediate the effects of perceptions of

coach appropriate role model behavior on antisocial behavior towards teammates but not opponents.

Third, we hypothesized athletes' perceptions of their coach's motivation effectiveness at Time 1 would mediate a positive effect of their perceptions of their coach's individual consideration behavior at Time 1 on trust in their coach at Time 2. Consistent with the related hypothesis, data analyses supported the presence of this indirect effect. Thus, when athletes perceived their coach to more frequently treat athletes on an individual basis by understanding and addressing their specific needs, they were perceived as being more efficacious in psychologically preparing athletes, and this perception partially explained increased levels of trust in the coach. Whilst past research has demonstrated transformational leadership is linked with increases in athlete motivation, team cohesion, performance, collective efficacy, well-being and intra-team communication (see Arthur, Woodman, Ong, Hardy, & Ntoumanis, 2011; Callow et al., 2009; Charbonneau et al., 2001; Price et al, 2013; Rowold, 2006; Smith, Arthur, Hardy, Callow, & Williams, 2013; Stenling, & Tafvelin, (2014), research to date has not linked it with increased coach trust. Similarly, previous research has not linked perceptions of motivation effectiveness with coach trust. The current research not only extends the literature by linking heightened individual consideration behavior and perceptions of motivation effectiveness with increased trust in the coach, but also proposes and supports a possible indirect pathway linking these three variables. Thus, it may be that coaches who are able to demonstrate understanding and meet athletes' individual needs for growth and development stimulates a strong coach-athlete relationship represented in motivation effectiveness, which in turn stimulates athletes' trust in their coach. This possibility is supported by research that has shown feelings of being valued in a

relationship are often reciprocated through changes in psychological states such as trust (see Colquitt, LePine, Piccolo, Zapata, & Rich, 2012; Lapidot, Kark, & Shamir, 2007).

Limitations and Future Directions

Although the current study revealed numerous interesting findings, limitations of this research should be acknowledged. First, when employing a longitudinal design, we were unable to achieve a 100% retention rate across the two data collection time points. Our failure in this respect resulted from issues such as players withdrawing from teams, as well as a small number of participants choosing not to continue to participate in the study following the Time 1 data collection that may have affected the results (i.e. possibility of sample bias and the remaining participants may differ in characteristic). Time 1 outcomes also were not controlled for in the analysis, and that assessing coach behaviors at the beginning of the season may have meant that for some participants, (e.g., first year athletes, first time with existing coach), that the climate was not fully established. Future researchers are encouraged to try and achieve an even higher retention rate than that achieved here. Second, this study was based on athlete self-reports, which could have influenced the accuracy of athletes' perceptions of their coach's behavior and effectiveness, as well as their reporting of their antisocial behavior and trust. This may give implications such as the results may become controversial and fade away because mood, emotion and memory recall could influence participants during answer the questionnaire. Further research may incorporate alternative or additional methods of assessing coach behavior and effectiveness such as observational techniques, as well as other indicators of athlete antisocial behavior (e.g., observed behavior) and trust (e.g., relationship longevity and athlete drop-out). Finally, for this current research we only used two transformational leadership behaviors because

theoretical perspective showed that ability to link with the effectiveness and coach behavior we chose. Furthermore, correlations analyzed strengthened the hypotheses we developed. Mediation analyzed strategy also one of the limitations that prohibited for further analyzed. Further, research may include other transformational leadership behavior in the theoretical understanding for various perspective in the research and brainstorm the theoretical definitions for a better understanding.

Given the general support for the proposed links between transformational coaching behavior and perceptions of coaching effectiveness identified presently, it may be interesting to investigate other potential effects of transformational leadership on athlete outcomes via perceptions of coaching effectiveness in future work. For instance, intellectual stimulation is reflected in coaching behaviors perceived to challenge normal practices and advance invention and creativity in athletes (Turnnidge & Côté, in press). Thus, it would be reasonable to expect athletes who perceive their coach engages regularly in such behaviors would develop higher levels of perceived competence compared to athletes who view their coach as using such behaviors less frequently. Further, such effects may be mediated by increases in perceived technique effectiveness, as coaches who employ a diverse range of instructional methods and have the ability to challenge convention should be rated more highly in their ability to coach athletes on technique and identify and remedy skill deficiencies in athletes (see Feltz et al., 1999). In support of this possibility, perceptions of coach intellectual stimulation behavior have been positively linked with problem solving and creative thinking (Charbonneau et al., 2001).

Sports coach also has determined as a leader, which has been associated with a host of positive cognitive, affective, and behavioral follower outcomes (see Bass &

Riggio, 2006). Leadership also view as a comprehensive activity within team and member of the group, that they may have an opportunity to actively participate, share and lead the group decisions. Leadership defined as process of individual influences on a group or individuals to achieve a common goal (Northhouse, 2010). Based on Northhouse, (2010) leadership is not linear event, for example coach leading the athletes, but more relevance as process of an interactive. Therefore, leadership has qualities that are important to effective coaching and being main centred discussion in sport setting. As noted, coaching efficacy dimensions are linked to leadership styles (Sullivan & Kent, 2003). Thus, effective leaders in sport appear to be learned through interactions between multiple components such as leaders' behavior, athlete characteristics and situational factors (Horn, 2008).

Conclusion

In conclusion, the current study established links between athlete perceptions of coach transformational leadership behavior and athlete outcomes, mediated by athlete perceptions of coaching effectiveness. In doing so, it provided support for the relevance – and integration of – a number of conceptual frameworks across a range of team sports. Specifically, the study drew upon and integrated key tenets of the coaching efficacy model (Feltz et al., 1999), Horn's (2008) model of coaching effectiveness and transformational leadership theory (Bass & Avolio, 1994). In doing so, the study also provides support for many of the propositions in Boardley's (in press) recent revised conceptual model of coaching efficacy. In doing so, the study findings contribute to our understanding of the psychological processes through which coaching behavior may influence important athlete outcomes in team sport.

CHAPTER 5

GENERAL DISCUSSION

Athletes develop their full potential in part through their involvement with their coaches, who need to possess and apply innumerable abilities to coach effectively. To develop these abilities, coaches need to constantly analyze the outputs stemming from their efforts to develop athletes' learning and performance (Côté & Gilbert, 2009). Effective coaches do this not only to develop their coaching, but largely to help athletes realize their potential. Effective coaching doesn't just consist of guiding skill development and remediating skill deficits, but also includes psychologically preparing athletes, ensuring they are tactically astute and developing their character (Feltz et al., 1999; Harris, 2015). As such, the roles and responsibilities of the coach are diverse in that they need to simultaneously act as teachers, assessors, friends, leaders, and sources of knowledge. Given this, the overall aim of this line of doctoral research was to investigate antecedents, outcomes, and processes that explain coaching effectiveness.

To achieve this overarching aim, data were collected from four samples across three empirical studies. Study 1 sought to replicate and extend the findings of Kavussanu et al. (2008) in a sample of team and individual sport athletes. In terms of replication, this study set out to examine whether sport experience, coach/athlete sex mismatch and sex predicted athletes' perceptions of their coach's effectiveness on the four dimensions of effectiveness. Regarding extension, this study investigated whether athletes' perceptions of specific categories of coach behavior predicted conceptually related dimensions of coaching effectiveness. Study 2 then aimed to examine whether athletes' perceptions of their coach's effectiveness predicted athlete-level outcomes representing the four outcomes of effective coaching proposed by Côté and Gilbert (2009). Further, this study examined whether any such predictions were consistent between two disparate cultures (i.e., UK and Malaysia). Finally, Study 3 explored

whether athletes' perceptions of their coach's effectiveness mediated longitudinal effects of athletes' perceptions of their coach's transformational leadership behavior on athlete-level outcomes. Over the following paragraphs, the main findings stemming from these three studies are collectively presented and discussed.

Summary of Study 1

The overall objective of Study 1 was to understand factors that may influence coaching effectiveness, revealing numerous interesting findings that support the value of coaching effectiveness research. The first of the two main study aims was to attempt to replicate the findings of Kavussanu et al. (2008). Whilst many of the findings relevant to this aim were consistent with the study hypotheses, this was not always the case. These deviating findings highlight the importance of attempting to replicate findings in psychological research. For instance, the findings suggest that sport experience may only negatively predict perceptions of coaching effectiveness when athletes have been with their coach for relatively short periods. Moreover, this study also suggests a more sensitive approach to the investigation of coach/athlete sex mismatch may be needed.

The second main aim was to investigate proposed links between coach behavior and athletes' perceptions of coaching effectiveness. To address this aim, we examined whether specific categories of coach behavior predicted conceptually related dimensions of coaching effectiveness. This approach was based upon the proposition that effective coaches engage more frequently in specific behaviors that athletes use to form perceptions of their coach's effectiveness (Horn, 2008; Smoll & Smith, 1989). For instance, as coaches, their abilities in every skills to perform in games should be advance than athletes or player they coach. This because coaches monitor athlete's

skill and giving feedback to refine technique for them in theory and practical. Thus, the frequency of technical skill behaviors may inform athletes' perceptions of their coach's instructional and diagnostic abilities (i.e., technique effectiveness). Second, coaches has their vision and objective in order to prepare the team for improvement or competitions. The objective they set will approaches athletes mentally and physically in the training and competitions. Thus, coaches' goal-setting behaviors for athletes' psychological preparation important for athletes in sport. Third, coaches need to study athletes' readiness, specifically the training components they provided to athletes. As coaches, the ability to give conception of the training, periodization planning, and intensity of the training, should engaging in a range of mental preparation behaviors. This potentially maximally develop athletes' psychological abilities. Fourth, coaches adopting such behaviors is highlighted by research that has shown coach competitive strategy behaviors can help athletes to focus, perform at their best level and be prepared for variety of competitive situations. Next, reward and punishment to athletes may be the strategy to gain interest and attention from the athletes. Athlete's acceptance to positive and negative approaches from coaches gives values to develop attitude in athletes. Thus, coach personal rapport behaviors positive and negative potential for optimizing athletes' character development in sport. Collectively, results provide support for a key aspect of Horn's (2008) model of coaching effectiveness, which suggests athletes' perceptions of their coach's effectiveness are based upon the coaching behaviors they observe.

Summary of Study 2

Study 2 then looked at a number of athlete-level outcomes that may stem from athlete perceptions of coaching effectiveness in team- and individual-sport athletes from two cultures. Specifically, we looked at four potential athlete-level outcomes, with each one representing one of the four outcomes (i.e., competence, confidence, connection and character) proposed to stem from effective coaching by Côté and Gilbert (2009).

The results from Study 2 built upon the findings of existing research that has established links between athletes' perceptions of their coach and athlete-level outcomes (see Boardley et al., 2008; Boardley et al., 2015; Boardley & Kavussanu, 2009). Specifically, the findings showed athletes' perceptions of (a) motivation effectiveness positively predicted athletes' connection and sport confidence, (b) technique effectiveness positively predicted athletes' sport competence, and (c) character building effectiveness positively predicted athletes' moral identity. These findings were largely consistent between athletes from England and Malaysia. Thus, athletes' perceptions of their coach may have important implications for athletes' sport experiences in team and individual sports even in diverging cultures.

Summary of Study 3

For the final study of this doctoral research, aspects of our existing conceptual frameworks were integrated with elements of transformational leadership theory (Bass, 1985). More specifically, we sought to investigate whether relevant dimensions of coaching effectiveness mediated the relations between specific transformational leadership behaviors and conceptually related athlete-level outcomes in team-sport athletes using a longitudinal design. Overall, the findings of this study partially supported the possibility that perceptions of coaching effectiveness may mediate effects of transformational leadership behaviors on athlete-level outcomes. Specifically,

perceptions of character building effectiveness did not mediate a negative predictive effect of perceptions of coach appropriate role model behavior on athletes' self-reported antisocial opponent behavior. In contrast, perceptions of character building effectiveness did mediate a negative effect of perceptions of coach appropriate role model behavior on athlete antisocial teammate behavior. Finally, athletes' perceptions of their coach's motivation effectiveness mediated a positive effect of coach individual consideration behavior on trust. As well as successfully testing the study hypotheses, this study also adds to a body of existing research that suggests transformational leadership behaviors may influence athlete motivation, team cohesion, performance, collective efficacy, well-being, and intra-team communication (see Arthur, Woodman, Ong, Hardy, & Ntoumanis, 2011; Callow et al., 2009; Charbonneau et al., 2001; Price et al, 2013; Rowold, 2006; Smith, Arthur, Hardy, Callow, & Williams, 2013; Stenling, & Tafvelin, (2014). Coaches may therefore increase their effectiveness by inspiring their athletes through ideal behavior, showing care, and formulating and communicating a clear vision (see Rowold, 2006; Vella, Oades, & Crowe, 2013).

Conceptual understanding of coaching effectiveness

Conceptually, Horn's (2008) of coaching effectiveness has proved an important framework when assessing athletes' perceptions of their coach's effectiveness (see Boardley et al., 2008; Kavussanu, et al., 2008). Presently, the findings of all three studies (Chapter 2, Chapter 3, and Chapter 4) add to the body of literature applying Horn's (2008) model and provide consistent support for a key aspect of Horn's (2008) model of coaching effectiveness, which suggests athletes' perceptions of their coach's effectiveness are based upon the coaching behaviors they observe.

For this doctoral research, we integrated aspects of Horn's (2008) model with elements of the coaching efficacy model (Feltz et al., 1999), which proposes four key dimensions of coaching abilities (i.e., motivation, technique, game strategy and character building; see Boardley et al., 2008). These dimensions encompass key roles and responsibilities linked with effective coaching (i.e., athletes' physical, psychological, moral, and tactical development) that were each examined within the present studies. Collectively, the findings from the three studies support the need for coach development across the four dimensions if coaches are to be effective across the full range of their roles and responsibilities. For instance, effective coaches need to be able to sustain athletes' confidence, improve their character, and develop their tactical and technical abilities (i.e., Study 2) through appropriate leadership (i.e., Study 3) and coach behaviors (i.e., Study 1). Coach attributes such as coaching experience, sport type (i.e., team vs. individual), and sex were also considered when conducting the analyses leading to these findings. In Study 2, the findings relating to the four categories of athlete-level outcomes proved consistent across two diverse cultures too. Overall, these findings are consistent with Lyle (2002), and make a significant contribution to existing models of (e.g., Horn, 2008) of coaching effectiveness.

This doctoral research also expands upon the initial tenets of the coaching efficacy model developed by Feltz et al (1999) by considering how athletes' perceptions of their coach's effectiveness on the four dimensions of coaching efficacy may impact upon athletes. It also linked such perceptions with various related coaching behaviors. As such, it provides understanding on the mechanisms through which coaching efficacy may influence athletes both psychologically and behaviorally. The findings also demonstrated how factors such as sport experience, coach and athlete sex, coach/athlete

sex mismatch, and sport type may also be important factors in determining athlete perceptions of coaching effectiveness (see also Fung, 2002; Kavussanu et al., 2008; Feltz et al., 2009; Myers et al., 2005).

As supported by Study 2 (Chapter 3), athlete-level outcomes are important factors that may play a critical role in determining coaching effectiveness. This is consistent with Fraser-Thomas, Côté, and Deakin (2005) who suggested coaches play an influential role in fostering a broad range of positive developmental outcomes in athletes. For instance, Study 2 found perceptions of coach's motivation effectiveness positively predicted athlete indicators of confidence and connection (i.e., the coach-athlete relationship), perceptions of technique effectiveness positively predicted competence, and perceptions of character building effectiveness positively predicted an indicator of character (i.e., moral identity). This broad range of athlete outcomes is consistent with Horn's (2008) proposition that effective coaching should result in a range of positive psychosocial outcomes in athletes. Moreover, the outcomes (i.e., confidence, competence, connection, and character) represent elements of athlete development that should be the objectives of many sport programs (e.g., youth skill development and performance programs). Thus, effective coaching should result in a wide range of consistent and stable athlete-level outcomes representing the four categories of effective coaching defined by Côté and Gilbert (2009).

Findings from the current studies can be further understood when integrated with those from past research. For instance, in Study 2 athletes who perceived their coach to be effective in developing the psychological skills and motivational states of athletes tended to report greater connection with their coach. When combined with the findings of Myers et al. (2006), it is possible this may be explained by greater satisfaction with

their coach. More specifically, athletes with coaches who are more effective in psychological preparation may have more satisfied athletes, which in turn may lead to stronger coach-athlete relationships. It may also be that coaches perceived effective in motivation effectiveness utilize efficacy-enhancing coach behaviors such as instruction-drilling, acting confident themselves, and encouraging positive talk more frequently. (see Vargas-Tonsing, Myers, & Feltz, 2004).

Next, we found athletes' perceptions of their coach's technique effectiveness positively predicted athletes' levels of sport competence. When integrated with the finding from Study 1 (Chapter 2) that athletes' perceptions of their coach's technical skill behavior were positive predictors of athletes' perceptions of their coach's technique effectiveness, it may be that coaches' technical skills behaviors influence athlete perceptions of competence via perceptions of coach technique effectiveness. These findings build upon past research that has shown coaches' technique abilities enhance athletes' skill development and performance (see Gallimore et al., 2004; Smith et al., 2006). Connecting these findings provide support for models of coaching effectiveness that suggest athletes' perceptions of their coach's effectiveness are based upon their perceptions of their coach's behavior (see Horn, 2002; Smoll & Smith, 1989). Coach development programs are therefore encouraged to include elements that focus upon developing coaches' observational techniques, abilities to correct mistakes, and to provide effective feedback with the correct frequency and at the right times.

Finally, coach's character building effectiveness positively predicted athletes' moral identity (Study 2). This finding is relevant to those of Study 1, in which athletes' perceptions of coaches' positive and negative personal rapport behaviors, respectively, positively and negatively predicted perceptions of coach character building

effectiveness. Further, in Study 3 character building effectiveness was found to mediate a relation between appropriate role model behavior and antisocial teammate behavior. Thus, a range of coaching behaviors (e.g., showing understanding for athletes as people, being a good listener) may strengthen athletes' perceptions of coach character building effectiveness, which in turn may influence morally relevant athlete-level outcomes. This suggestion is consistent with past research that has shown perceptions of character building effectiveness are positively linked with other indicators of athletes' moral development, such as increased prosocial behavior (see Boardley et al., 2008; Boardley & Kavussanu, 2009).

Many or the roles and responsibilities of coaches require them to act as leaders, and a considerable body of research has investigated coaching in terms of leadership (e.g. questioning, giving feedback, intuiting, checking, and guidance). Specifically, transformational leadership theory has been proposed as a theory of particularly relevant theory for sport coaching research (Arthur et al., 2011). As such, effective coaches may need to have the ability to inspire athletes to achieve performance expectations by transforming their beliefs and attitudes. Further to Klenke (1996), transformational leadership represents an interaction between leaders and followers. Thus, coach's feedback, guidance may motivate athletes to increase performance and give more attitude during training and competitions. Interestingly, transformational leadership important between athletes and coaches as the leader characteristics such, components of intellectual stimulation, facilitating positive motivation, and strength-based individual consideration are urged to be key determinants of positive developmental effects for the athletes (Vella, Oades, & Crowe, 2012).

We have seen the potential conceptual linked between transformational leadership with dimension of coaching effectiveness. For example, it is reasonable to expect athletes perceiving coach individual consideration would link with their coach's motivation effectiveness. Specifically, when coach consider athletes as an individual basis by display understanding, trust and addressing the needs of each individual, athletes will stimulates their psychological skills and states to perform at higher level. Second, coaches seen to be engaging more frequently in appropriate role model linked as having greater character-building effectiveness. More precisely, athletes who consider their coach possess the qualities that we would like to have and serves as an example by influencing others, be effective in an influence athletes' personal development and positive attitude toward sport. Third, coaches who engage more frequently in intellectual stimulation should linked as having greater game strategy effectiveness. Specifically when coach is about challenging normal practices and advancing invention and creativity should be considered effective to help athletes prepare to face a variety of situations and keep focused during competition. Finally, coaches who engage more frequently in intellectual stimulation should linked as having coaches to be viewed as more effective in technique effectiveness. More specifically, coaches who demonstrate challenging normal practices and advancing invention and creativity should be considered more effective in their abilities to use instructional and diagnostic abilities in their athletes.

Transformational leadership reveals in important conclusions that showed strong relations between coaches and athletes (Tovell & Gravelle, 2009). Transformational leadership increase satisfaction of the athletes with results to sport commitment of the athlete (Saybani et al., 2013) and, motivation in the task related with the intellectual

stimulation and individual consideration (Charbonneau et al., 2001). Transformational leadership also is one of the additional factors of coaches to demonstrate a set of confidences to athletes in the capacity for learn new thing and any substantial demands (Conroy & Coatsworth, 2006). Thus, theory of Transformational leadership established exhibited in a sport setting as it applicable to athletes in team sport (Saybani et al., 2013). Therefore, through the medium of coaching, coach extract vigorous action of their own behavior and applied with alternative ways to engage with the athletes. To our knowledge, the dimension of transformational leadership and coaching effectiveness is plausibility to strengthen athletes learning and development. According to Côté and Gilbert (2009), coaching leadership and effectiveness are a process of inspiring that is dependent upon and constituted by the interpersonal relationship between coach and athlete. Moreover, coach become more alert on situational that occurs in which the responsive to recognize needs of their athletes more flexible in their behavior. The working model of coaching effectiveness has identified as an alternative to leadership and relationship models (Horn, 2008). Thus, in this view of interaction between coaches and athletes, transformational leadership and effectiveness could be the factors to influential, stimulate, and inspire to enhance athletes' learning and development.

Limitations and Directions for Future Research

Across the three studies, there are several limitations that warrant further consideration. First, the limitations of the current thesis include use of self-report data throughout the studies. Although fully validated measures were used throughout, it is still possible the study findings were affected to some degree by issues such as social desirability (Reynolds, 1982; Gucciardi, Jalleh, & Donovan, 2010) anchoring effects and time pressure (see Paulhus & Vazire, 2007), as well as self-serving bias that are common to

perceptions research. The findings of the current thesis were also based upon self-reported subjective athlete perceptions of their coach which are particularly sensitive responses. Future research should consider alternative methods of assessing these variables such as using other-reports and objective measures of athlete outcomes (e.g., performance in skill tests, observed pro-social behavior); implicit measures could also be considered, as could recording and coding of actual coach behaviors. A second limitation of the work presented here relates to the timing of data collections, which could have influenced the scores obtained. Due to the athletes/teams having disparate training schedules across sports/teams, athlete mood, emotion, and environmental conditions could have influenced the completion of questionnaire packs in some cases. Third, across the three studies most of the participants were university athletes and as such the findings should not be generalized beyond this core population.

Based upon the findings of this thesis, it is possible to suggest a number of further possible future research directions. For instance, future researchers could further examine some of the current findings in alternative populations and using more objective outcomes. Additionally, future research could record coach instruction and other coaching behaviors within practice settings and determine whether such behaviors predict coach effectiveness. Such research could use an observational system to measure coach behavior (see Cushion & Jones, 2001), and potentially incorporate longitudinal and/or experimental designs. Based upon the findings of Study 3, future researchers could also investigate how leadership behavior and coaching effectiveness are linked with coaches' decision-making styles style. Specifically, it would be interesting to investigate how and when effective coaches make decisions.

Conclusion

Overall, through a combination of cross-sectional and longitudinal designs, the three studies helped to advance our knowledge and understanding of athletes' perceptions of coaching effectiveness. First, Study 1, identified important links between athletes' perceptions of their coach's behavior and their perceptions of coaching effectiveness, providing support for relevant aspects of the model of coaching effectiveness proposed by Horn (2008). Then, Study 2 linked athletes' perceptions of their coach's effectiveness with various athlete-level outcomes, offering strong support for Côté and Gilbert's (2009) integrative definition of coaching effectiveness across two divergent cultures. In doing so this study also extended research applying the coaching efficacy model (Feltz et al., 1999) to a new culture. Finally, Study 3 provided further empirical evidence supporting Horn's (2008) model of coaching effectiveness, as well as being the first study to integrate elements of Bass's (1985) transformational leadership theory with those of the coaching efficacy model. Through integration of several models and theories relevant to coaching effectiveness, the three studies forming this thesis make several important contributions to the literature on coaching effectiveness with the potential to influence future research as well as coaching practice.

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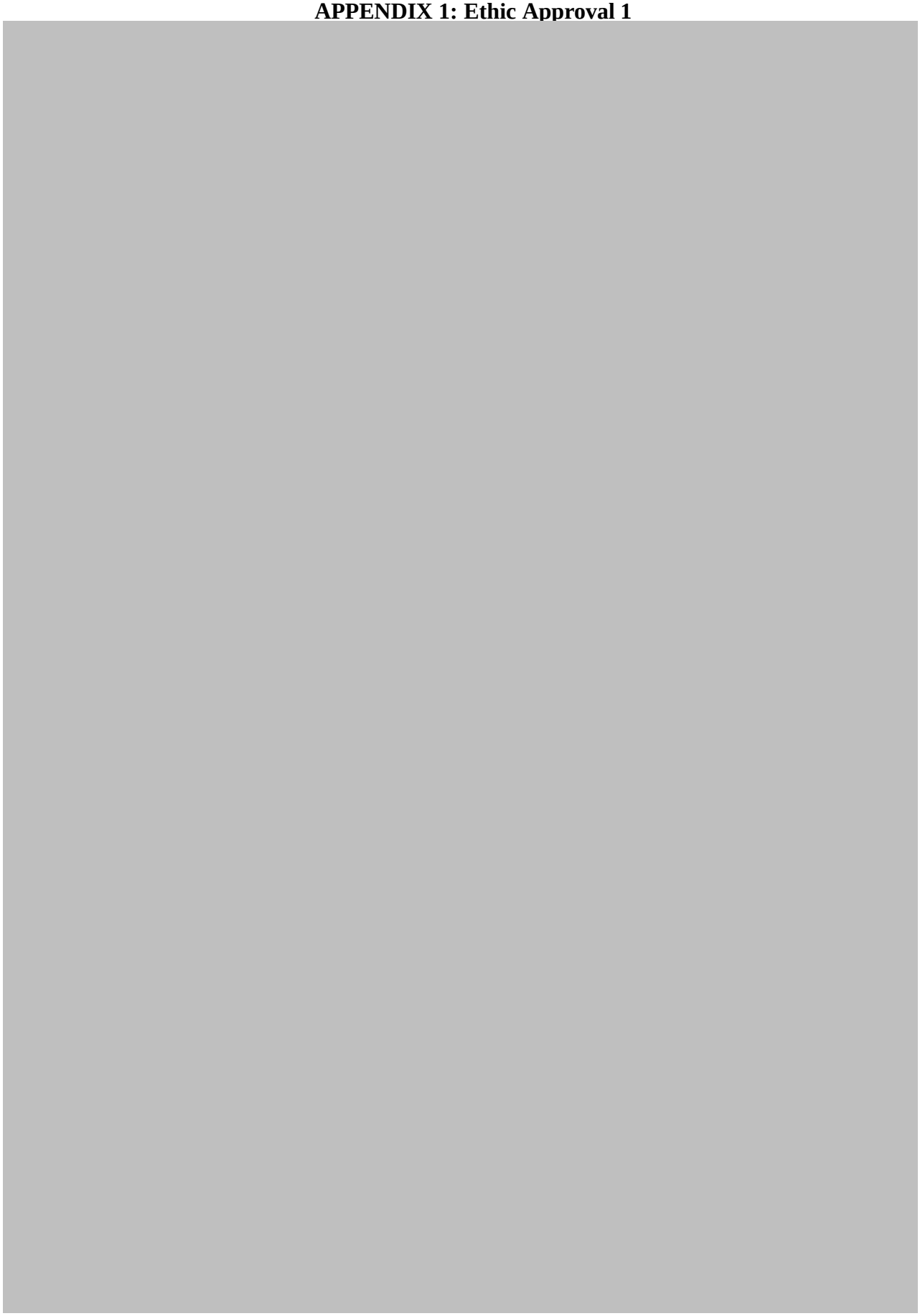
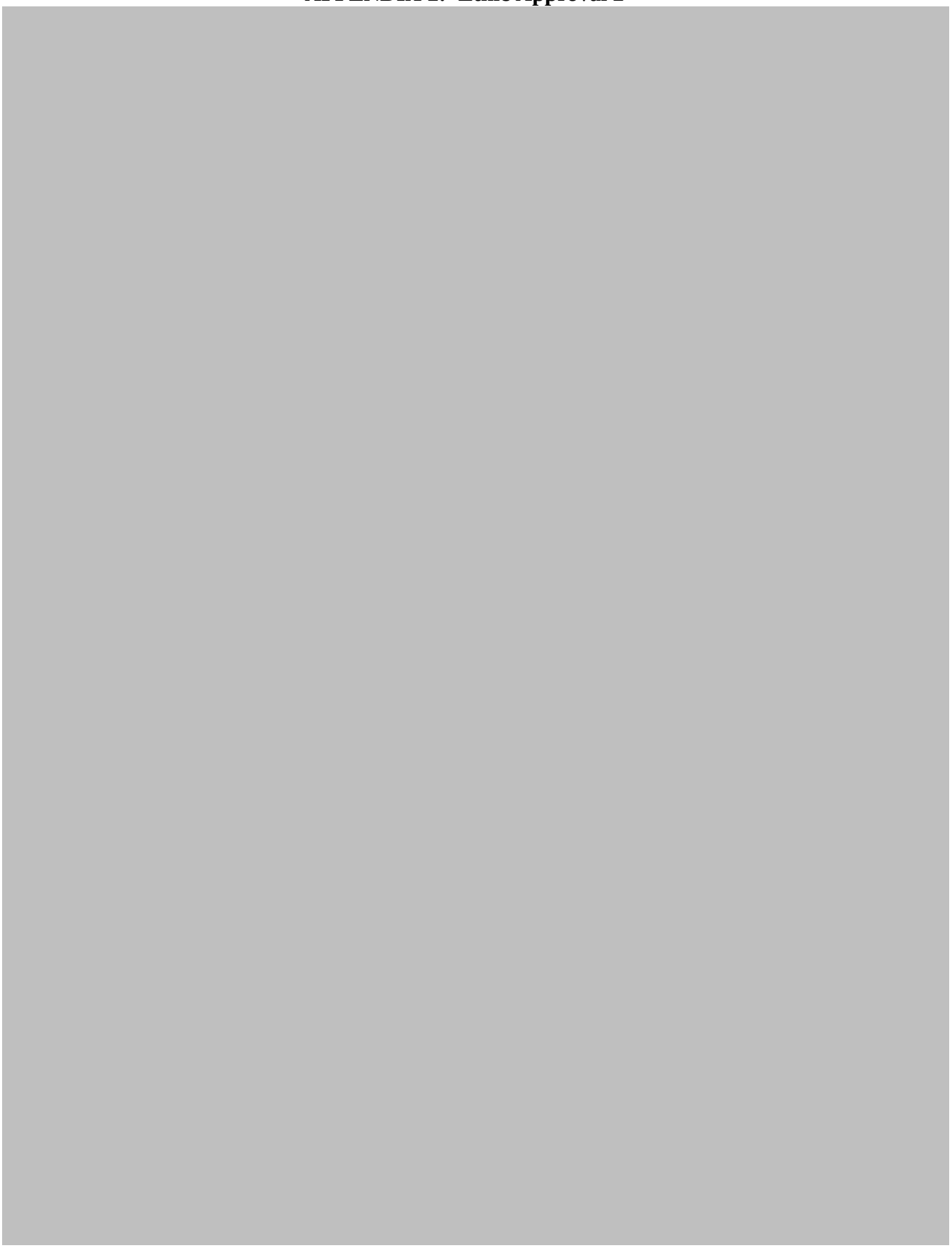
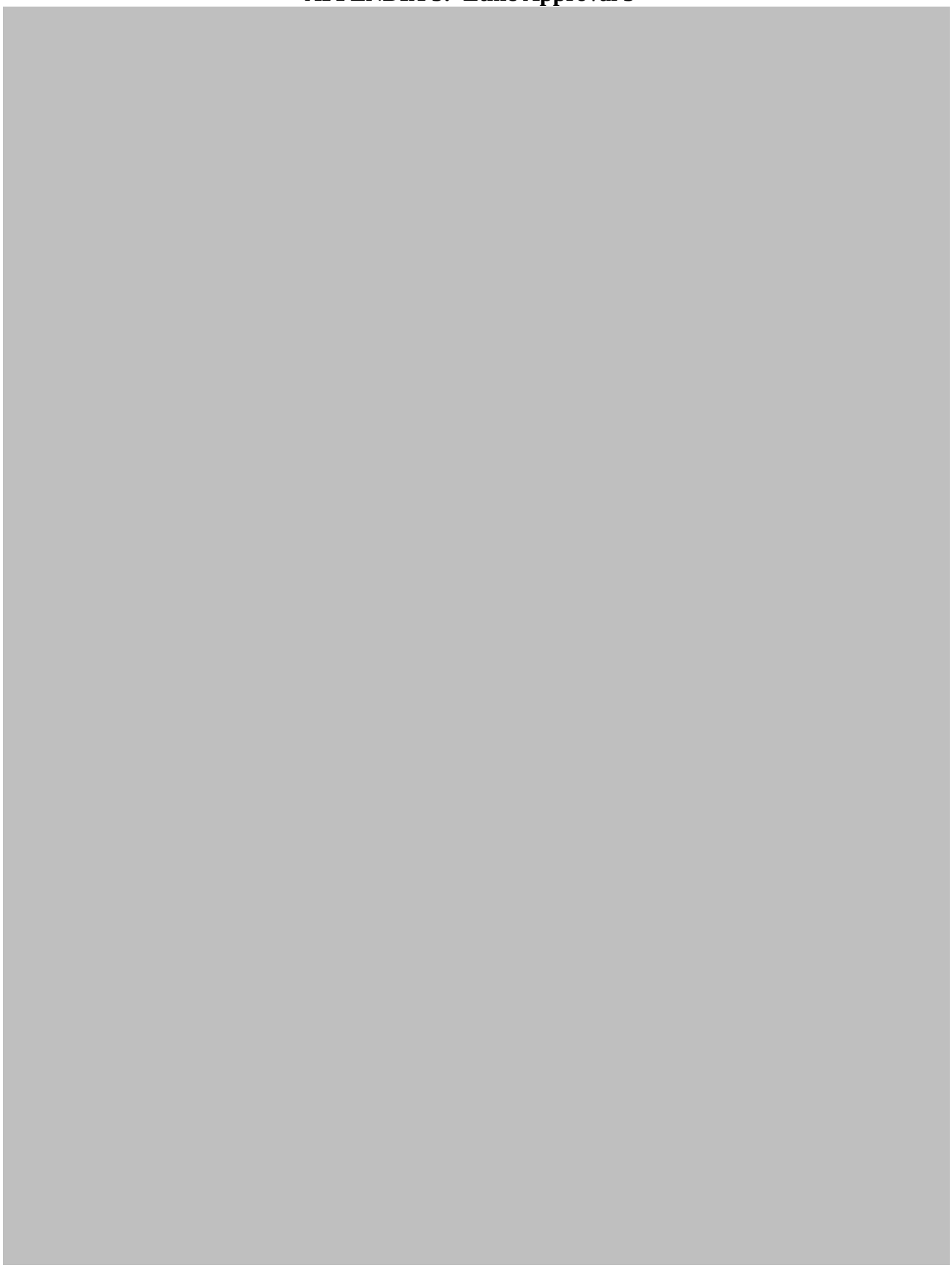
APPENDIX 1: Ethic Approval 1



APPENDIX 2: Ethic Approval 2



APPENDIX 3: Ethic Approval 3



APPENDIX 4: Chapter 2 Questionnaire Items

2.1 Demographic Questionnaire

1. Age (years and months): _____
2. Sex: Male □ Female □
3. Is your sport: Single-sex □ Mixed-sex □
4. Is your current head coach: Male □ Female □
5. Time with your current head coach (years and months):_____
6. Sport: _____
7. Approximate time (years and months) playing this sport: _____
8. Average *training/competition* hours per week _____
9. Level you play at (circle one): Recreational / local / university / regional / national / international
10. Point in season (circle one): Off-season / pre-season / early season / mid-season / late season

2.2 Coaching behavior:

***My physical training and conditioning coach*.** Is this your **head coach**? **Yes** □ **No** □
1. Provides me with a physical conditioning program in which I am confident. 0 1 2 3 4 5 6 7 8 9 10 **Never** **Fairly often** **Always**
2. Provide me with a physically challenging conditioning program. 0 1 2 3 4 5 6 7 8 9 10
3. Provide me with a detailed physical conditioning program 0 1 2 3 4 5 6 7 8 9 10
4. Provide me with a plan for my physical preparation. 0 1 2 3 4 5 6 7 8 9 10
5. Ensures that training facilities and equipment are organized. 0 1 2 3 4 5 6 7 8 9 10
6. Provide me with structured training sessions? 0 1 2 3 4 5 6 7 8 9 10

7. Provide me with an annual training program.										
0	1	2	3	4	5	6	7	8	9	10
My technical skills coach. Is this your **head coach**? **Yes** □ **No** □										
8. Provide me with an advice while I'm performing a skill.										
0	1	2	3	4	5	6	7	8	9	10
9. Give me specific feedback for correcting technical errors.										
0	1	2	3	4	5	6	7	8	9	10
10. Recognise opposing team's weaknesses during competition?										
0	1	2	3	4	5	6	7	8	9	10
11. Give me reinforcement about correct technique										
0	1	2	3	4	5	6	7	8	9	10
12. Provide me with feedback that helps me improve my technique.										
0	1	2	3	4	5	6	7	8	9	10
13. Provide visual examples to show how a skill should be done.										
0	1	2	3	4	5	6	7	8	9	10
14. Uses verbal examples that describe how a skill should be done										
0	1	2	3	4	5	6	7	8	9	10
15. Make sure I understand the techniques and strategies?										
0	1	2	3	4	5	6	7	8	9	10
16. Provide me with immediate feedback?										
0	1	2	3	4	5	6	7	8	9	10
***My mental preparation coach*.** Is this your **head coach**? **Yes** □ **No** □										
17. Provide advice on how to perform under pressure										
0	1	2	3	4	5	6	7	8	9	10
18. Provide advice on how to be mental tough										
0	1	2	3	4	5	6	7	8	9	10
19. Provide advice on how to stay confident about my abilities										
0	1	2	3	4	5	6	7	8	9	10
20. Provide advice on how to stay positive about myself										
0	1	2	3	4	5	6	7	8	9	10
21. Provide advice on how to stay focused										
0	1	2	3	4	5	6	7	8	9	10
***My goal setting coach*.** Is this your **head coach**? **Yes** □ **No** □										
22. Helps me identify strategies to achieve my goals										
0	1	2	3	4	5	6	7	8	9	10
23. Monitors progress towards my goals.										
0	1	2	3	4	5	6	7	8	9	10
24. Helps me set-short term goals										
0	1	2	3	4	5	6	7	8	9	10
25. helps me identify target dates for attaining goals										
0	1	2	3	4	5	6	7	8	9	10
26. Helps me set long term goals										
0	1	2	3	4	5	6	7	8	9	10
27. Provide support to attain my goals										
0	1	2	3	4	5	6	7	8	9	10

***My competitive strategies coach*.** Is this your **head coach**? **Yes** □ **No** □										
28. helps me focus on the process of performing well										
0	1	2	3	4	5	6	7	8	9	10
29. Prepares me to face a variety of situations in competition										
0	1	2	3	4	5	6	7	8	9	10
30. Keeps me focus in competition										
0	1	2	3	4	5	6	7	8	9	10
31. has a consistent routine at competition										
0	1	2	3	4	5	6	7	8	9	10
32. deals with problems I may experience at competitions										
0	1	2	3	4	5	6	7	8	9	10
33. Shows confidence in my ability during competitions										
0	1	2	3	4	5	6	7	8	9	10
34. Ensures that facilities and equipment are organized for competition										
0	1	2	3	4	5	6	7	8	9	10
My Head Coach…										
35. Shows understanding for me as a person										
0	1	2	3	4	5	6	7	8	9	10
36. Is a good listener										
0	1	2	3	4	5	6	7	8	9	10
37. Is easily approachable about personal problems I might have										
0	1	2	3	4	5	6	7	8	9	10
38. Demonstrates concern for my whole self (i.e., other parts of my life beyond sport)										
0	1	2	3	4	5	6	7	8	9	10
39. Is trustworthy with my personal problems.										
0	1	2	3	4	5	6	7	8	9	10
40. Maintains confidentiality regarding my personal life.										
0	1	2	3	4	5	6	7	8	9	10
41. Uses fear in his /her coaching methods.										
0	1	2	3	4	5	6	7	8	9	10
42. Yells at me when angry										
0	1	2	3	4	5	6	7	8	9	10
43. Disregards my opinion										
0	1	2	3	4	5	6	7	8	9	10
44. Shows favouritism towards others.										
0	1	2	3	4	5	6	7	8	9	10
45. Intimidates me physically										
0	1	2	3	4	5	6	7	8	9	10
46. Uses power to manipulate me										
0	1	2	3	4	5	6	7	8	9	10
47. Makes personal comments to me that I find upsetting.										
0	1	2	3	4	5	6	7	8	9	10
48. Spends more time coaching the best athletes.										
0	1	2	3	4	5	6	7	8	9	10

2.3 Coaching Effectiveness

1. Maintain confidence in his/her players?										
0	1	2	3	4	5	6	7	8	9	10
not at all effective				**moderately effective**						**extremely effective**
2. Recognise opposing team's strengths during competition?										
0	1	2	3	4	5	6	7	8	9	10
3. Mentally prepare players for game strategies?										
0	1	2	3	4	5	6	7	8	9	10
4. Understand competitive strategies?										
0	1	2	3	4	5	6	7	8	9	10
5. Instil an attitude of good moral character?										
0	1	2	3	4	5	6	7	8	9	10
6. Build the self-esteem of his players?										
0	1	2	3	4	5	6	7	8	9	10
7. Demonstrate the skills of your sport?										
0	1	2	3	4	5	6	7	8	9	10
8. Adapt to different game situations?										
0	1	2	3	4	5	6	7	8	9	10
9. Recognise opposing team's weaknesses during competition?										
0	1	2	3	4	5	6	7	8	9	10
10. Motivate his players?										
0	1	2	3	4	5	6	7	8	9	10
11. Make critical decisions during competition?										
0	1	2	3	4	5	6	7	8	9	10
12. Build team cohesion?										
0	1	2	3	4	5	6	7	8	9	10
13. Instil an attitude of fair play among his players?										
0	1	2	3	4	5	6	7	8	9	10
14. Coach individual players on technique?										
0	1	2	3	4	5	6	7	8	9	10
15. Build the self-confidence of his players?										
0	1	2	3	4	5	6	7	8	9	10
16. Develop players' abilities?										
0	1	2	3	4	5	6	7	8	9	10
17. Maximise the team's strengths during competition?										
0	1	2	3	4	5	6	7	8	9	10
18. Recognise talent in players?										

	0	1	2	3	4	5	6	7	8	9	10
19. Promote good sportsmanship?											
	0	1	2	3	4	5	6	7	8	9	10
20. Detect skill errors?											
	0	1	2	3	4	5	6	7	8	9	10
21. Adjust the game strategy to meet the team's talent?											
	0	1	2	3	4	5	6	7	8	9	10
22. Teach the skills of your sport?											
	0	1	2	3	4	5	6	7	8	9	10
23. Build team confidence?											
	0	1	2	3	4	5	6	7	8	9	10
24. Instil an attitude of respect for others?											
	0	1	2	3	4	5	6	7	8	9	10

2.4. Athlete Consent Form

Consent Form for Participation in the Research Study Entitled:

Coaching Effectiveness and Athlete Behaviour in Team and Individual Sports

- I have read the information provided and any questions I have asked have been answered to my satisfaction.
- I agree to participate in this research, realising that I may withdraw at any time – up to one month following my participation – without reason and without prejudice.
- I understand that all information provided is treated as strictly confidential and will not be released by the investigator unless required to by law.
- I am aware that my coach and teammates will not be made aware of any of my responses at any time.
- I have been advised as to what data is being collected, what the purpose is, and what will be done with the data upon completion of the research.
- I agree that research data gathered for the study may be published provided my name or other identifying information is not used.

Voluntary Consent by Participant:

I have read the preceding consent form, or it has been read to me, and I fully understand the contents of this document and voluntarily consent to participate in the research study entitled "Coaching Effectiveness and Athlete Behaviour in Team and Individual Sports" All of my questions concerning the research have been answered to my satisfaction. I hereby agree to participate in this research study. I also voluntarily agree to all the statements described in this document and understand this consent ends at the conclusion of this study.

Signed: _____ Name: _____

Date: _____ / _____ / _____

Your kind cooperation and truthfulness in answering the questionnaire and involved with this study is much appreciated. Thank you.

2.5 Athlete Information Sheet

Coaching Effectiveness and Athlete Behaviour in Team and Individual Sports

I am a PhD student in the School of Sport, Exercise, & Rehabilitation Sciences at the University of Birmingham. In this current study, I am investigating the topic of **"Coaching Effectiveness and Athlete Behaviour in Team and Individual Sports".** Information on this study is provided below, along what is required if you decide to participate.

Participant Information

i. An overall aim of my research is to further understanding of coach leadership behavior through the investigation of transformational leadership and coaching efficacy in sports coaches. To help achieve this aim in the current study I am investigating athletes' ratings of their coach's leadership behaviors and effectiveness.
ii. As such, we are asking athletes to complete a one-off questionnaire – completion which will take no more than 20 minutes – at the end of a training session. The questionnaire measures athletes' perceptions of their coach's leadership behavior rand coaching effectiveness. All answers will remain *completely confidential*; and athletes' answers will have no impact whatsoever on their standing on their team a*t no point will teammates or coaches are made aware of their responses*. In addition, at no point will any individuals be identified as part of this research.
iii. Participation in this research is entirely voluntary and participants are free to withdraw from the study at any time without prejudice up to one month following their participation. If you decide to withdraw your participation after completing the questionnaire, please contact me and ask for your research data to be withdrawn and destroyed within one month of the date you completed the questionnaire.
iv. The results of this study may be published in future through academic journals and presentations. However, no individual will be identifiable, and all results will be completely anonymous in their presentation.
v. For the data to be useful, it is important that participants are *honest* when answering questions. Importantly, *there are no right or wrong answers*, and participants are not expected to respond in a specific way; genuine responses are awe hope for.
vi. Finally, we would like to thank you for considering participating in this study. Please keep this letter for your records if you wish. If you have any questions regarding the research, please ask the researcher administering this questionnaire. If you subsequently have further questions please contact me (Ahmad Fikri; [redacted] or my PhD supervisor Dr Ian Boardley. [redacted]

Many thanks,

Ahmad FIKRI
Doctoral Researcher
[redacted]

APPENDIX 5: Chapter 3 Questionnaire Items

3.1 Demographic Questionnaire

1. Age (years and months): _____
2. Sex: Male □ Female □
3. Is your sport: Single-sex □ Mixed-sex □
4. Is your current head coach: Male □ Female □
5. Time with your current head coach (years and months): _____
6. Sport _____
7. Approximate time (years and months) playing this sport: _____
8. Average *training/competition* hours per week currently _____
9. Level you play at (circle one): Recreational / local / university / regional / national / international
10. Point in season (circle one): Off-season / pre-season / early season / mid-season / late season

3.2 Coaching Effectiveness

Not At All Effective					Moderately Effective					Extremely Effective
1. Maintain confidence in his players?										
0	1	2	3	4	5	6	7	8	9	10
2. Recognise opposing team's strengths during competition?										
0	1	2	3	4	5	6	7	8	9	10
3. Mentally prepare players for game strategies?										
0	1	2	3	4	5	6	7	8	9	10
4. Understand competitive strategies?										
0	1	2	3	4	5	6	7	8	9	10
5. Instil an attitude of good moral character?										
0	1	2	3	4	5	6	7	8	9	10
6. Build the self-esteem of his/her players?										
0	1	2	3	4	5	6	7	8	9	10
7. Demonstrate the skills of your sport?										
0	1	2	3	4	5	6	7	8	9	10
8. Adapt to different game situations?										
0	1	2	3	4	5	6	7	8	9	10
9. Recognise opposing team's weaknesses during competition?										
0	1	2	3	4	5	6	7	8	9	10
10. Motivate his/her players?										
0	1	2	3	4	5	6	7	8	9	10
11. Make critical decisions during competition?										
0	1	2	3	4	5	6	7	8	9	10
12. Build team cohesion?										
0	1	2	3	4	5	6	7	8	9	10
13. Instil an attitude of fair play among his/her players?										
0	1	2	3	4	5	6	7	8	9	10
14. Coach individual players on technique?										
0	1	2	3	4	5	6	7	8	9	10
15. Build the self-confidence of his/her players?										
0	1	2	3	4	5	6	7	8	9	10

16. Develop players' abilities?											
	0	1	2	3	4	5	6	7	8	9	10
17. Maximise the team's strengths during competition?											
	0	1	2	3	4	5	6	7	8	9	10
18. Recognise talent in players?											
	0	1	2	3	4	5	6	7	8	9	10
19. Promote good sportsmanship?											
	0	1	2	3	4	5	6	7	8	9	10
20. Detect skill errors?											
	0	1	2	3	4	5	6	7	8	9	10
21. Adjust the game strategy to meet the team's talent?											
	0	1	2	3	4	5	6	7	8	9	10
22. Teach the skills of your sport?											
	0	1	2	3	4	5	6	7	8	9	10
23. Build team confidence?											
	0	1	2	3	4	5	6	7	8	9	10
24. Instil an attitude of respect for others?											
	0	1	2	3	4	5	6	7	8	9	10

3.3 Sport Competence

Please rate your competence in each area:	**Not At All Competent**		**Neutral**		**Extremely Competent**
1. Technical skills	1	2	3	4	5
2. Tactical skills	1	2	3	4	5
3. Physical skills	1	2	3	4	5

3.4 Sport Confidence

Please indicate how you **generally feel**:	**Not at All**	**Somewhat**	**Moderately**	**Very Much So**
1. I feel self-confident	1	2	3	4
2. I'm confident I can meet challenges	1	2	3	4
3. I'm confident about performing well	1	2	3	4
4. I'm confident because I mentally picture myself reaching my goal	1	2	3	4
5. I'm confident of coming through under pressure	1	2	3	4

3.5 Connection

..Closeness	**Not at all**			**Half-Way**			**Extremely**
1. I like my coach	1	2	3	4	5	6	7
2. I trust my coach	1	2	3	4	5	6	7
3. I respect my coach	1	2	3	4	5	6	7
4. I feel appreciation for the sacrifices my coach has experienced in order to improve his/her performance	1	2	3	4	5	6	7
..Commitment							
5. I feel close to my coach	1	2	3	4	5	6	7

6. I feel committed to my coach	1	2	3	4	5	6	7
7. I feel that my sport career is promising with my coach	1	2	3	4	5	6	7
..Complementarity							
8. When I am coached by my coach, I feel at ease	1	2	3	4	5	6	7
9. When I am coached by my coach, I feel responsive to his/her efforts	1	2	3	4	5	6	7
10. When I am coached by my coach, I am ready to do my best	1	2	3	4	5	6	7
11. When I coach my athlete/When I am coached by my coach, I adopt a friendly stance	1	2	3	4	5	6	7

3.6 Moral Identity

Fair	**Compassionate**	**Caring**	**Friendly**	**Generous**
Hardworking	**Helpful**	**Kind**	**Honest**	

	Strongly Disagree	**Disagree**	**Slightly Disagree**	**Neutral**	**Slightly Agree**	**Agree**	**Strongly**
1. It would make me feel good to be a person who has these characteristics	1	2	3	4	5	6	7
2. Being someone who has these characteristics is an important part of who I am	1	2	3	4	5	6	7
3. I would be ashamed to be a person who has these characteristics	1	2	3	4	5	6	7
4. Having these characteristics is NOT really important to me	1	2	3	4	5	6	7
5. I strongly desire to have these characteristics	1	2	3	4	5	6	7

3.7 Athlete Consent Form

Consent Form for Participation in the Research Study Entitled:
ATHLETES' PERCEPTIONS OF COACHING EFFECTIVENESS AND ATHLETE-LEVEL OUTCOMES IN TEAM AND INDIVIDUAL SPORTS

- I have read the information provided and any questions I have asked have been answered to my satisfaction.
- I agree to participate in this research, realising that I may withdraw at any time – up to one month following my participation – without reason and without prejudice.
- I understand that all information provided is treated as strictly confidential and will not be released by the investigator unless required to by law.
- I am aware that my coach and teammates will not be made aware of any of my responses at any time.
- I have been advised as to what data is being collected, what the purpose is, and what will be done with the data upon completion of the research.
- I agree that research data gathered for the study may be published provided my name or other identifying information is not used.
- Voluntary Consent by Participant:
    - I have read the preceding consent form, or it has been read to me, and I fully understand the contents of this document and voluntarily consent to participate in the research study entitled "**ATHLETES' PERCEPTIONS OF COACHING EFFECTIVENESS AND ATHLETE-LEVEL OUTCOMES IN TEAM AND INDIVIDUAL SPORTS.** All of my questions concerning the research have been answered to my satisfaction. I hereby agree to participate in this research study. I also voluntarily agree to all the statements described in this document and understand this consent ends at the conclusion of this study.

Signed: _____

Name: _____

Email: _____

Date: _____ / _____ / _____

Your kind cooperation and truthfulness in answering the questionnaire and involved with this study is much appreciated. Thank you.

3.8 Athlete Information Sheet

Investigating Coach Effectiveness and Athlete-Level Outcomes

I am a PhD student in the School of Sport, Exercise, & Rehabilitation Sciences at the University of Birmingham. In this current study, I am investigating the topic of athletes' perceptions of coaching behaviors and Athlete-Level Outcomes**.** Information on this study is provided below, along what is required if you decide to participate.

Participant Information

i. An overall aim of my research is to further understanding of coach effectiveness throughout the athletes' outcomes. To help achieve this aim in the current study I am investigating athletes' perceptions of their coach's behavior and four athlete-level outcomes.
ii. All answers will remain *completely confidential*, and athletes' answers will have no impact whatsoever on their standing on their team as *at no point will teammates or coaches be made aware of their responses*. In addition, at no point will any individuals be identified as part of this research.
iii. Participation in this research is voluntary and participants are free to withdraw from the study at any time without prejudice up to one month following their participation. If you decide to withdraw your participation after completing the questionnaire, please contact me with your allocated ID Code within one month of the date you completed the questionnaire and ask for your research data to be withdrawn and destroyed.
iv. The results of this study may be published in future through academic journals and presentations. However, no individual will be identifiable, and all results will be completely anonymous in their presentation.
v. For the data to be useful, it is important that participants are *honest* when answering questions. Importantly, *there are no right or wrong answers*, and participants are not expected to respond in a specific way; genuine responses are all we hope for.
vi. Finally, we would like to thank you for considering participating in this study. Please keep this letter for your records if you wish. If you have any questions regarding the research, please ask the researcher administering this questionnaire. If you subsequently have further questions please contact me (Ahmad Fikri;) or my PhD supervisor Dr Ian Boardley

Many thanks,

Ahmad FIKRI
Doctoral Researcher

APPENDIX 6: Chapter 4 Questionnaire Items

4.1 Demographic Questionnaire

1. Age (years and months): _____
2. Sex: Male □ Female □
3. Is your sport: Single-sex □ Mixed-sex □
4. Is your current head coach: Male □ Female □
5. Time with your current head coach (years and months): _____
6. Sport _____
7. Approximate time (years and months) playing this sport: _____
8. Average *training/competition* hours per week currently _____
9. Level you play at (circle one): Recreational / local /university /regional /national / international
10. Point in season (circle one): Off-season / pre-season / early season / mid-season / late season

4.2 Coaching effectiveness

Not At All Effective					Moderately Effective					Extremely Effective
1. Maintain confidence in his players?										
0	1	2	3	4	5	6	7	8	9	10
2. Instil an attitude of good moral character?										
0	1	2	3	4	5	6	7	8	9	10
3. Build the self-esteem of his/her players?										
0	1	2	3	4	5	6	7	8	9	10
4. Motivate his/her players?										
0	1	2	3	4	5	6	7	8	9	10
5. Build team cohesion?										
0	1	2	3	4	5	6	7	8	9	10
6. Instil an attitude of fair play among his/her players?										
0	1	2	3	4	5	6	7	8	9	10
7. Build the self-confidence of his/her players?										
0	1	2	3	4	5	6	7	8	9	10
8. Mentally prepare players for game strategies?										
0	1	2	3	4	5	6	7	8	9	10
9. Promote good sportsmanship?										
0	1	2	3	4	5	6	7	8	9	10
10. Build team confidence?										
0	1	2	3	4	5	6	7	8	9	10
11. Instil an attitude of respect for others?										
0	1	2	3	4	5	6	7	8	9	10

4.3 Transformational leadership

	Not At All		Sometimes		All Of The Time
1. Treated each team member as an individual	1	2	3	4	5
2. Helped team members to develop their strengths	1	2	3	4	5
3. Considered that I have different strengths and abilities from others	1	2	3	4	5
4. Recognized that different athletes had different needs	1	2	3	4	5
5. Led by example	1	2	3	4	5
6. Led from the front whenever he/she could	1	2	3	4	5
7. Led by 'doing' rather than simply 'telling'	1	2	3	4	5
8. Was a good role model for me to follow	1	2	3	4	5

4.4 Trust

Based upon your experiences with your coach during the last month, what is your level of ***agreement*** *with the following* ***statements****?*	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1. My coach and I can both freely share our ideas, feeling and hopes	1	2	3	4	5
2. We can freely talk about difficulties at training and I know that (s)he will want to listen	1	2	3	4	5
3. We would both feel sense of loss if one of us left and we could longer work together	1	2	3	4	5
4. If I share my problems with my coach, I know (s)he will respond constructively and caringly	1	2	3	4	5
5. I would have to say that we have both made considerable emotional investment in our working relationship	1	2	3	4	5
6. My coach approaches his/her job with professionalism and dedication	1	2	3	4	5
7. Given my coach's track record, I see no reason to doubt his/her competence and preparation for the job	1	2	3	4	5
8. I can rely on my coach not to make my training more difficult by his/her careless work	1	2	3	4	5
9. Most people, even those who are not close to my coach, respect him/her as a coach	1	2	3	4	5
10. Other work associates of mine who interact with my coach consider him/her to be knowledgeable	1	2	3	4	5

4.5 Antisocial behavior Teammate and Opponent

While playing for my team **during the last month,** I...	**Never**	**Rarely**	**Some times**	**Often**	**Very Often**
1. Criticised an opponent	1	2	3	4	5
2. Argued with a team-mate	1	2	3	4	5
3. Deliberately fouled an opponent	1	2	3	4	5
4. Verbally abused a team-mate	1	2	3	4	5
5. Retaliated after a bad foul	1	2	3	4	5
6. Criticised a team-mate	1	2	3	4	5
7. Tried to wind up an opponent	1	2	3	4	5
8. Swore at a team-mate	1	2	3	4	5
9. Tried to injure an opponent	1	2	3	4	5
10. Intentionally distracted an opponent	1	2	3	4	5
11. Showed frustration at a team-mate's poor play	1	2	3	4	5
12. Intentionally broke the rules of the game	1	2	3	4	5
13. Supported a team-mate	1	2	3	4	5

4.6 Athlete Consent Form

Consent Form for Participation in the Research Study Entitled:
A Longitudinal Investigation of Transformational Leadership and Coaching Effectiveness in Sport Coaches**.** DO ATHLETES' PERCEPTIONS OF THEIR COACH'S EFFECTIVENESS MEDIATE LONGITUDINAL EFFECTS OF TRANSFORMATIONAL LEADERSHIP BEHAVIOUR ON ATHLETE OUTCOMES?

- I have read the information provided and any questions I have asked have been answered to my satisfaction.
- I agree to participate in this research, realising that I may withdraw at any time – up to one month following my participation – without reason and without prejudice.
- I understand that all information provided is treated as strictly confidential and will not be released by the investigator unless required to by law.
- I am aware that my coach and teammates will not be made aware of any of my responses at any time.
- I have been advised as to what data is being collected, what the purpose is, and what will be done with the data upon completion of the research.
- I agree that research data gathered for the study may be published provided my name or other identifying information is not used.
- Voluntary Consent by Participant:
    - I have read the preceding consent form, or it has been read to me, and I fully understand the contents of this document and voluntarily consent to participate in the research study entitled "**DO ATHLETES' PERCEPTIONS OF THEIR COACH'S EFFECTIVENESS MEDIATE LONGITUDINAL EFFECTS OF TRANSFORMATIONAL LEADERSHIP BEHAVIOUR ON ATHLETE OUTCOMES**?
    - All of my questions concerning the research have been answered to my satisfaction. I hereby agree to participate in this research study. I also voluntarily agree to all the statements described in this document and understand this consent ends at the conclusion of this study.

Signed: _____

Name: _____

Email: _____

Date: _____ / _____ / _____

Your kind cooperation and truthfulness in answering the questionnaire and involved with this study is much appreciated. Thank you.

8.7.Athlete Information Sheet

I am a PhD student in the School of Sport, Exercise, & Rehabilitation Sciences at the University of Birmingham. In this current study, I am investigating the topic of DO ATHLETES' PERCEPTIONS OF THEIR COACH'S EFFECTIVENESS MEDIATE LONGITUDINAL EFFECTS OF TRANSFORMATIONAL LEADERSHIP BEHAVIOUR ON ATHLETE OUTCOMES?**.** Information on this study is provided below, along what is required if you decide to participate.

Participant Information

vii. An overall aim of this research is to further understanding of coach effectiveness throughout the Athletes' Perceptions of their Coach Influence Prosocial and Antisocial Behaviour through Trust and Moral Disengagement. To help achieve this aim in the current study we use a Longitudinal Investigation as a design for this study.

viii. This study is longitudinal; therefore, data collections will take across three time points approximately 6-8 weeks apart.

ix. All answers will remain *completely confidential*, and athletes' answers will have no impact whatsoever on their standing on their team as *at no point will teammates or coaches be made aware of their responses*. In addition, at no point will any individuals be identified as part of this research.

x. Participation in this research is entirely voluntary and participants are free to withdraw from the study at any time without prejudice up to one month following their participation. If you decide to withdraw your participation after completing the questionnaire please contact me with your allocated ID Code within one month of the date you completed the questionnaire and ask for your research data to be withdrawn and destroyed.

xi. The results of this study may be published in future through academic journals and presentations. However, no individual will be identifiable, and all results will be completely anonymous in their presentation.

xii. For the data to be useful, it is important that participants are *honest* when answering questions. Importantly, *there are no right or wrong answers*, and participants are not expected to respond in a specific way; genuine responses are all we hope for.

xiii. Finally, we would like to thank you for considering participating in this study. Please keep this letter for your records if you wish. If you have any questions regarding the research please ask the researcher administering this questionnaire. If you subsequently have further questions please contact me (Fikri;) or my PhD supervisor Dr Ian Boardley

Many thanks,

Ahmad FIKRI
Doctoral Researcher