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Athletes' Perceptions of Coaching Effectiveness and Athlete-Level Outcomes in Team and Individual Sports: A Cross-Cultural Investigation

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Abstract

This research aimed to investigate whether athletes' perceptions of their coach's effectiveness on dimensions of coaching efficacy (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 (Côté & 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, drawing upon the work of Côté, Bruner, Strachan, Erickson, and Fraser-Thomas (2010), Côté and Gilbert (2009) identified 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 outlined by Côté and Gilbert (2009). As such, the primary aim of the current investigation was to address this deficit in the current literature.

Definitions for these four outcomes outlined by Côté and Gilbert (2009) have been provided in the literature. First, connection relates to constructive understanding and social associations between individuals in the sport environment (Vierimaa, Ericson, Côté, & Gilbert, 2012). Next, confidence signifies the belief or degree of certainty individuals possess about their ability to achieve success in sport (Vealey, 1986). In turn, competence refers to elevated levels of technical, tactical and physical skills in one's sport, and is reflected in elevated achievement, performance or ability (Vierimaa et al., 2012). Finally, character represents positive ethical values, moral development, and sportspersonship (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.

The Coaching Efficacy Model

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 (Feltz et al., 1999). 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.

Boardley (in press) recently proposed a revised coaching efficacy model, specifying coaching efficacy influences athlete-level outcomes via athletes' perceptions of their coach's behavior. As such, athletes' perceptions of their coach are proposed to be a proximal influence upon the four athlete-level outcomes outlined by Cote and Gilbert (2009). In support of Boardley's (in press) model, research comparing coaches' and athletes' perceptions of coach efficacy/effectiveness has demonstrated both the congruence between, and distinct nature of, such perceptions (e.g., Broodryk, Van den Berg, Kruger, & Ellis, 2014;

Kavussanu et al., 2008; Short & Short, 2004). Based upon this work – and Boardley's (in press) model – athletes' perceptions of coaching effectiveness may be predictive of athletes' connection, confidence, competence, and character.

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. Specifically, perceptions of coach motivation effectiveness positively predicted athletes' effort, commitment and enjoyment, of technique effectiveness positively predicted athletes' task self-efficacy, and of character building effectiveness positively predicted athletes' prosocial behavior. Subsequently, Boardley and Kavussanu (2009) investigated 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). Such perceptions negatively predicted athletes' antisocial opponent and teammate behavior, and positively predicted their prosocial opponent behavior. 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 outlined as outcomes of effective coaching by Côté and Gilbert (2009).

To empirically test whether coaching effectiveness is linked with the four athlete-level outcomes outlined by Côté and Gilbert (2009), representative variables for the four outcomes need to be identified. A suitable variable representing athlete connection is the

coach-athlete relationship, which is composed of three dimensions (i.e., 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 elevated levels of motivation effectiveness may be more likely to report a strong coach-athlete relationship. This is because this dimension of coaching effectiveness in part represents a coach's effectiveness in building player-coach cohesion (Feltz et al., 1999). 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 outlined by Côté and Gilbert (2009) is confidence. Athletes' perceptions of their coach's motivation effectiveness may be an important antecedent of athletes' sport confidence, as motivation effectiveness reflects the ability of coaches to develop the psychological skills and states of athletes. Importantly, one of the psychological states Feltz et al. (1999) linked with coaches' self-confidence. 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[1]. However, to date the proposed association between coach motivation effectiveness and self-confidence – as opposed to self-efficacy – has been examined.

[1] Whilst conceptually distinct from self-confidence, self-efficacy (i.e., the belief in one's capabilities to organise and execute the courses of action to produce given attainments; Bandura, 1997, p.3) represents a situational-specific form of self-confidence and therefore there is considerable conceptual overlap between the two.

The third athlete-level outcome of effective coaching outlined by Côté and Gilbert (2009) was competence. Athletes' perceptions of their coach's technique effectiveness may be an important prerequisite for heightened sport competence as such perceptions reflect coaches' abilities to develop athletes' technical abilities and teach the skills of their sport (Feltz et al., 1999). 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. 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). 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 of effective coaching outlined by Côté and Gilbert (2009) 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. It is reasonable to expect then that athletes who rate their coaches highly on character building effectiveness are likely to have been exposed to a relatively high frequency of character building coaching behaviors. Exposure to such behaviors should in turn promote athletes' moral 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 exposure to 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). Further, Boardley and Kavussanu (2009) found athletes' perceptions of their coach's character building competency negatively predicted athletes' antisocial opponent and teammate behavior, and positively predicted their prosocial opponent behavior. However, to date researchers have not investigated whether links between athletes' perceptions of their coach's character building effectiveness are positively linked with athletes' moral identity.

Cultural Influences on Coaching Effectiveness

Due to the inherent complexity of coaching, it is possible some of the links between athlete perceptions of effective coaching and athlete-level outcomes 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 United Kingdom (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 cultures to determine whether the increased emphasis on performance and competitive success in UK coach development in comparison to Malaysia influenced the proposed links between athletes' perceptions of coaching effectiveness and athlete-level outcomes.

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 outlined 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[2] (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[3]

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

[2] Conceptual arguments for the relevance of game strategy effectiveness as a potential predictor could also be made. However, given the dimensionality (i.e., technical, tactical, and physical) of the competence construct assessed here, technique effectiveness was considered the most relevant predictor.

[3] Data were collected from samples reflecting a diverse range of demographic characteristics to reflect a broad range of sports, as well as the complex nature of sport coaching.

= 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 item. 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). The main difference between the modified CES and the original scale is that in the original scale, coaches are asked to rate how confident they are in their own ability using a scale from 0 (*not at all confident*) to 10 (*extremely confident*). In contrast, in the modified scale athletes are asked to rate their coach's effectiveness using a scale ranging from 0 (*not at all effective*) to 10 (*extremely effective*). This modified scale has been used successfully with university athletes, with Boardley et al.

(2008) providing evidence for its validity and internal consistency (i.e., alpha coefficients = .92 for motivation, .85 for technique, and .88 for character building).

Coach-Athlete Relationship. 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 this scale's validity (e.g., Jowett & Meek, 2002) and internal consistency (i.e., alpha coefficients ranged from .82 to .89; Jowett & Ntoumanis, 2004) has been provided.

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 several 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 (e.g., Dirks, Treat, & Weersing, 2007; Senko & Harackiewicz, 2002), and Causgrove Dunn et al. (2007) provided evidence for its internal consistency (alpha coefficient = .86).

Moral Identity. Moral identity was measured using a 5-item instrument developed by Aquino and Reed (2002) that conceptualizes moral identity 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 (e.g., 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[4] 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 2. Alpha coefficients indicated acceptable to excellent levels of internal reliability (Nunnally, 1978) for all scales in both the UK and Malaysian samples.

[4] All Malaysian participants were either current or previous university students.

Based on the mean values presented in Table 2, on average, both UK- and Malaysia-based athletes perceived their coach to be quite effective for all of the assessed dimensions of coaching effectiveness, and scored moderately highly for three of the four outcomes (i.e., all but moral identity). For moral identity, on average both UK- and Malaysia-based athletes only scored moderately on the degree to which moral character was experienced as a central part of their overall self-concept. 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.

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[5]. Specifically, motivation effectiveness was entered as the predictor for connection and confidence, technique effectiveness was entered as the predictor for competence, and character building was entered as the predictor for character. The results of these analyses are presented in Table 3.

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

[5] Entering all four dimensions of coaching effectiveness in this step would in theory have allowed a comparative analysis between the relative predictive strength of the different dimensions of coaching effectiveness. However, the high degree of association amongst the dimensions mean this would not have been appropriate due to potential issues with multicollinearity.

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%.

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%[6], respectively, of the variance in UK- and Malaysia-based athletes' ratings of the strength of the coach-athlete relationship. Thus, 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. It may also be due to heightened perceptions of compatibility between coach and athlete, as past research has shown female basketball players who perceived high compatibility with their coach evaluated their coach's behaviors more positively (Kenow & Williams, 1999).

[6] Throughout the discussion where percentage of variance explained is referred to, these values refer to the percentage of variance beyond that explained by control variables.

These findings support the potential importance of coach motivation effectiveness for optimizing coach-athlete relationships and facilitating positive coaching environments.

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%, respectively, of the variance in UK- and Malaysia-based athletes' sport confidence. 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. Past research has also identified a positive link between female volleyball coaches' motivation efficacy and their players' perceptions of team efficacy (Vargas-Tonsing, Warners, & Feltz, 2003). Coaches perceived as being more effective in motivation effectiveness may 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). This finding reinforces the potential importance of coach motivation effectiveness for athlete sport confidence.

Next, we tested whether athletes' perceptions of their coach's technique effectiveness positively predicted athletes' sport competence. Regression analyses supported the relevant hypothesis, with perceptions of technique effectiveness explaining 7% and 19%, respectively, of the variance in UK- and Malaysia-based athletes' perceptions of sport competence. Thus, when perceiving their coach to be high in technique effectiveness, athletes tended to consider themselves 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 competent in their sport (Vierimaa et al., 2012). Thus, these finding reinforce the possible importance of coach technique effectiveness for the enhancement of athlete 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%, respectively, of the variance in UK- and Malaysia-based athletes' perceptions of their moral identity. 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). This finding highlights the potential importance of coach character development effectiveness for athlete moral development.

Overall, our findings provide support for the conceptual framework outlined 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 coaching 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 prominent 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 four dimensions of coaching 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 supported in both the UK and Malaysia data. However, closer examination of our findings shows that effect sizes were consistently larger in the Malaysia 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 identified differences in coach development between the two countries. 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 be concerned with the performance-related outcomes UK-based coaches are also asked to focus on. 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 encouraged to investigate factors such as this that may explain the larger effect sizes seen in the Malaysia 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, use of a cross-sectional design limits the study findings. 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 outlined by Côté and Gilbert (2009). Next, although we investigated one dependent variable for each of the four athlete-level outcomes delineated by Côté and Gilbert (2009), 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, although we matched the two samples for sport type, it was not possible to match them for all sample characteristics. Although we controlled for some of these characteristics in our analyses, it is still possible these or other non-cultural differences may have influenced the study findings. Future researchers should seek to match samples more closely for demographic characteristics when comparing samples from distinct cultures. In addition, although we controlled for effects of team versus individual sport classification in our analyses, it would be interesting in future research to specifically explore the effects of such differences. For instance, researchers could investigate whether levels of perceived coach effectiveness across the four dimensions of coaching efficacy differ between team and individual sports. Researchers could also explore other research questions centered on group

differences, such as whether athletes' perceptions of their coach's game-strategy effectiveness differ for those coached by mass participation versus performance-related coaches. Another interesting avenue for future work would be to determine whether coach self-reports of coaching efficacy predict the four athlete-level outcomes assessed presently. Finally, 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.

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.

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Table 1. Demographic Information by Sport for United Kingdom (*N* =269) and Malaysia (*N* =284) Samples

Sport	Male/Female (*n*)	*M* Age (years)	*M* Time with Current Coach (years)	*M* Sport Experience (years)
United Kingdom				
Hockey	34	19.39	3.17	7.29
Volleyball	46	24.48	3.76	8.35
Basketball	50	20.65	2.97	7.66
Squash	47	19.76	4.34	7.85
Table Tennis	48	20.73	3.82	7.30
Golf	44	21.06	4.84	9.10
Malaysia				
Hockey	47	18.78	4.76	7.01
Volleyball	49	21.69	3.73	4.10
Basketball	50	21.52	3.88	5.60
Squash	44	19.88	4.37	6.29
Table Tennis	47	20.04	3.74	5.80
Golf	47	19.22	2.89	2.63

Table 2. 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.

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

Table 3. 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
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
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	
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
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	

Note. Sport experience was expressed in years; Sex was coded 0 for females and 1 for males; Sport type was coded 0 for individual and 1 for team.
*$p < .05$, **$p < .01$, ***$p < .001$