

# Athletes' perceptions of coaching effectiveness and athlete-level outcomes in team and individual sports

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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

## 51 **Introduction**

52 Sport coaches fulfill important roles in sport, being responsible for numerous  
53 outcomes relevant to athlete development and performance. Importantly, drawing upon the  
54 work of Côté, Bruner, Strachan, Erickson, and Fraser-Thomas (2010), Côté and Gilbert  
55 (2009) identified four specific athlete-level outcomes that should result from effective  
56 coaching: competence, confidence, connection, and character. Consistent with these proposed  
57 outcomes, research on coaching effectiveness has identified significant associations between  
58 athletes' assessments of their coach's effectiveness and relevant athlete outcomes (e.g.,  
59 Boardley, Kavussanu, & Ring, 2008). However, to date researchers have not investigated  
60 links between athletes' perceptions of their coach's effectiveness and all four of the athlete-  
61 level outcomes outlined by Côté and Gilbert (2009). As such, the primary aim of the current  
62 investigation was to address this deficit in the current literature.

63 Definitions for these four outcomes outlined by Côté and Gilbert (2009) have been  
64 provided in the literature. First, connection relates to constructive understanding and social  
65 associations between individuals in the sport environment (Vierimaa, Ericson, Côté, &  
66 Gilbert, 2012). Next, confidence signifies the belief or degree of certainty individuals possess  
67 about their ability to achieve success in sport (Vealey, 1986). In turn, competence refers to  
68 elevated levels of technical, tactical and physical skills in one's sport, and is reflected in  
69 elevated achievement, performance or ability (Vierimaa et al., 2012). Finally, character  
70 represents positive ethical values, moral development, and sportpersonship (Bredemeier &  
71 Shields, 1996). Côté and Gilbert (2009) proposed this diverse range of athlete-level outcomes  
72 reflects the multifaceted nature of sport coaching and the highly variable roles sport coaches  
73 adopt.

## 74 **The Coaching Efficacy Model**

75           A framework that has proved useful in guiding research on coaching effectiveness is  
76 the coaching efficacy model introduced by Feltz, Chase, Moritz and Sullivan (1999).  
77 Researchers applying the coaching efficacy model to the assessment of coaching  
78 effectiveness have defined coaching effectiveness as the extent to which coaches can  
79 implement their knowledge and skills to positively affect the learning and performance of  
80 their athletes (Boardley et al., 2008; Kavussanu, Boardley, Jutkiewicz, Vincent, & Ring,  
81 2008). Importantly, the dimensionality of the original coaching efficacy model has been  
82 supported when athletes' assessments of their coach's effectiveness have been assessed using  
83 this framework (Boardley et al., 2008; Kavussanu et al., 2008). This model consists of four  
84 sub-dimensions of coaching effectiveness: motivation, game strategy, technique, and  
85 character building (Feltz et al., 1999). Motivation effectiveness relates to athletes' ratings of  
86 their coach's ability to develop the psychological skills and motivational states of the athletes  
87 they coach. Game strategy effectiveness represents athletes' assessments of their coach's  
88 ability to lead and coach athletes to a successful performance during competition. Technique  
89 effectiveness concerns athletes' evaluations of their coach's instructional and diagnostic  
90 abilities. Finally, character building effectiveness pertains to athletes' perceptions of their  
91 coach's ability to influence athletes' personal development and positive attitudes toward  
92 sport.

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

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

103         Research grounded in the coaching efficacy model has established links between  
104 athletes’ perceptions of their coach and athlete-level outcomes (Boardley et al., 2008;  
105 Boardley, Jackson, & Simmons, 2015; Boardley & Kavussanu, 2009). First, Boardley et al.  
106 (2008) found rugby union players’ perceptions of their coach’s effectiveness predicted  
107 numerous athlete-level outcomes. Specifically, perceptions of coach motivation effectiveness  
108 positively predicted athletes’ effort, commitment and enjoyment, of technique effectiveness  
109 positively predicted athletes’ task self-efficacy, and of character building effectiveness  
110 positively predicted athletes’ prosocial behavior. Subsequently, Boardley and Kavussanu  
111 (2009) investigated field hockey and netball players’ perceptions of their coach’s character  
112 building competency (i.e., evaluations of a coach’s ability to affect their athletes’ personal  
113 development and positive attitude toward sport; Myers et al., 2006). Such perceptions  
114 negatively predicted athletes’ antisocial opponent and teammate behavior, and positively  
115 predicted their prosocial opponent behavior. Most recently, Boardley et al. (2015) identified  
116 consistent positive links between golfers’ perceptions of their coach’s motivation efficacy  
117 (i.e., players’ confidence in their coach’s ability to influence the psychological skill and states  
118 of their players; Feltz et al., 2008) and players’ task self-efficacy across three studies.  
119 Although informative, collectively the above studies only considered variables relevant to  
120 two (i.e., confidence, character) of the four athlete-level outcomes outlined as outcomes of  
121 effective coaching by Côté and Gilbert (2009).

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

125 coach-athlete relationship, which is composed of three dimensions (i.e., closeness,  
126 commitment, and complementarity; Jowett & Ntoumanis, 2004). Closeness represents  
127 athletes feeling cared for, liked, valued, and able to trust their coach (Jowett & Meek, 2000).  
128 Commitment refers to athletes' intentions to maintain their relationship with their coach  
129 (Jowett & Ntoumanis, 2004). Finally, complementarity signifies athletes' readiness,  
130 responsiveness, friendliness, and willingness to cooperate with their coach (Jowett &  
131 Ntoumanis, 2004). Importantly, athletes who perceive their coach to have elevated levels of  
132 motivation effectiveness may be more likely to report a strong coach-athlete relationship.  
133 This is because this dimension of coaching effectiveness in part represents a coach's  
134 effectiveness in building player-coach cohesion (Feltz et al., 1999). Thus, coaches perceived  
135 to be high in motivation effectiveness should have athletes who report higher levels of  
136 connection with their coach, as represented by the strength of the coach-athlete relationship.  
137 However, this supposition has not been empirically tested to date.

138         The second athlete-level outcome outlined by Côté and Gilbert (2009) is confidence.  
139 Athletes' perceptions of their coach's motivation effectiveness may be an important  
140 antecedent of athletes' sport confidence, as motivation effectiveness reflects the ability of  
141 coaches to develop the psychological skills and states of athletes. Importantly, one of the  
142 psychological states Feltz et al. (1999) linked with coaches' self-confidence. Empirical  
143 support for this was provided by Boardley et al. (2015), who found golfers' perceptions of  
144 their coach's motivation efficacy positively predicted players' golf self-efficacy<sup>1</sup>. However,  
145 to date the proposed association between coach motivation effectiveness and self-confidence  
146 – as opposed to self-efficacy – has been examined.

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<sup>1</sup> 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.

147           The third athlete-level outcome of effective coaching outlined by Côté and Gilbert  
148 (2009) was competence. Athletes' perceptions of their coach's technique effectiveness may  
149 be an important prerequisite for heightened sport competence as such perceptions reflect  
150 coaches' abilities to develop athletes' technical abilities and teach the skills of their sport  
151 (Feltz et al., 1999). Given perceptions of coaching effectiveness are thought to be largely  
152 based on the coaching behaviors athletes observe (see Horn, 2008), it is assumed coaches  
153 perceived to be high in technique effectiveness should engage frequently in effective  
154 technical coaching behaviors. Support for this supposition is seen in research that has shown  
155 coaches who provide technical instruction during practice produce athletes with higher levels  
156 of perceived competence (Falcão, Bloom, & Gilbert, 2012). Thus, coaches perceived to be  
157 high in technique effectiveness should have athletes who report higher levels of sport  
158 competence. However, this possibility has not been empirically tested to date.

159           The final athlete-level outcome of effective coaching outlined by Côté and Gilbert  
160 (2009) was character. According to Boardley and Kavussanu (2009), coaches perceived to be  
161 highly capable in character building coaching should demonstrate a greater frequency of  
162 character-development behaviors, such as promoting good sportpersonship, respect for  
163 others, and fair play. It is reasonable to expect then that athletes who rate their coaches highly  
164 on character building effectiveness are likely to have been exposed to a relatively high  
165 frequency of character building coaching behaviors. Exposure to such behaviors should in  
166 turn promote athletes' moral development. An important indicator of athletes' moral  
167 development is their moral identity, which represents the degree to which a person's moral  
168 character is experienced as a central part of his/her overall self-concept (Aquino & Reed,  
169 2002). Given their likely basis in exposure to character-development coaching behaviors,  
170 athletes' perceptions of their coach's character building effectiveness may therefore be an  
171 important antecedent of athletes' moral identity. Consistent with this possibility, empirical



172 evidence has shown perceived character building effectiveness positively predicts athletes'  
173 prosocial behavior (Boardley et al., 2008). Further, Boardley and Kavussanu (2009) found  
174 athletes' perceptions of their coach's character building competency negatively predicted  
175 athletes' antisocial opponent and teammate behavior, and positively predicted their prosocial  
176 opponent behavior. However, to date researchers have not investigated whether links between  
177 athletes' perceptions of their coach's character building effectiveness are positively linked  
178 with athletes' moral identity.

### 179 **Cultural Influences on Coaching Effectiveness**

180         Due to the inherent complexity of coaching, it is possible some of the links between  
181 athlete perceptions of effective coaching and athlete-level outcomes proposed to this point  
182 may vary between cultures, as cultural differences can influence the behaviors, values,  
183 emotions and mental states of cultural group members (Krane & Baird, 2005). To this end, in  
184 the current study we tested the study hypotheses with athletes from both the United Kingdom  
185 (UK) and Malaysia to provide a more comprehensive understanding of the ubiquity of the  
186 study findings between these two cultures. These two specific cultures were selected because  
187 there are notable differences between these two cultures with respect to coach development.  
188 Whereas in the UK there is a strong emphasis on performance and competitive success in  
189 coach development (The National Coaching Foundation, 2008), in Malaysia the primary  
190 objective of coaching relates to mass participation and health-based outcomes (National Sport  
191 Policy, 2009). Thus, we tested our hypotheses in these two cultures to determine whether the  
192 increased emphasis on performance and competitive success in UK coach development in  
193 comparison to Malaysia influenced the proposed links between athletes' perceptions of  
194 coaching effectiveness and athlete-level outcomes.

### 195 **The Current Research**



216 = 21.07,  $SD = 3.23$ ), sport experience from one to 28 years ( $M = 7.94$ ,  $SD = 4.21$ ) and time  
217 with their current coach from three months to five years ( $M = 3.83$ ,  $SD = 1.21$ ).

218 **Malaysia Sample.** Male ( $n = 146$ ) and female ( $n = 138$ ) athletes from the same three  
219 team (volleyball [ $n = 49$ ], hockey [ $n = 47$ ] and basketball [ $n = 50$ ]) and individual (squash [ $n$   
220 =44], table tennis [ $n = 47$ ] and golf [ $n = 47$ ]) sports as for the UK sample were recruited in  
221 the peninsular region of Malaysia; a similar range of competitive standards to the UK sample  
222 were represented (i.e., local = 59, university = 97, regional = 26, national = 52, and  
223 international = 9). Athletes' ages ranged from 17 to 28 years ( $M = 20.02$ ,  $SD = 1.73$ ), sport  
224 experience from one to 12 years ( $M = 5.22$ ,  $SD = 2.87$ ) and time with their current coach  
225 from three months to five years ( $M = 3.05$ ,  $SD = 1.37$ ).

## 226 **Measures**

227 **Coaching Effectiveness.** An adapted version of the Coaching Efficacy Scale (CES;  
228 Feltz et al., 1999) was used to measure athletes' perceptions of their coach's effectiveness  
229 (Boardley et al., 2008; Kavussanu et al., 2008). We used three of the four subscales from the  
230 adapted scale: motivation (7 items), technique (6 items) and character building (4 items).  
231 Instructions informed athletes that coaches differ in their ability to positively affect and  
232 improve the learning and performance of their athletes, before asking them to rate how  
233 effective their coach was for each item. Example items were "build the self-esteem of his/her  
234 players" (motivation), "demonstrate the skills of his/her sport" (technique), and "instill an  
235 attitude of good moral character" (character building). The main difference between the  
236 modified CES and the original scale is that in the original scale, coaches are asked to rate  
237 how confident they are in their own ability using a scale from 0 (*not at all confident*) to 10  
238 (*extremely confident*). In contrast, in the modified scale athletes are asked to rate their coach's  
239 effectiveness using a scale ranging from 0 (*not at all effective*) to 10 (*extremely effective*).  
240 This modified scale has been used successfully with university athletes, with Boardley et al.

241 (2008) providing evidence for its validity and internal consistency (i.e., alpha coefficients =  
242 .92 for motivation, .85 for technique, and .88 for character building).

243         **Coach-Athlete Relationship.** The coach-athlete relationship was assessed using the  
244 11-item Coach Athlete Relationship-Questionnaire (CART-Q; Jowett & Ntoumanis, 2004).  
245 This questionnaire is composed of three subscales that break down the coach-athlete  
246 relationship into closeness (4 items), commitment (3 items) and complementarity (4 items).  
247 Example items are “I trust my coach” (closeness), “I feel committed to my coach”  
248 (commitment), and “When I am coached by my coach, I feel responsive to his/her efforts”  
249 (complementarity). Athletes’ responded using a 7-point scale ranging from 1 (*not at all*) to 7  
250 (*extremely*). Evidence for this scale’s validity (e.g., Jowett & Meek, 2002) and internal  
251 consistency (i.e., alpha coefficients ranged from .82 to .89; Jowett & Ntoumanis, 2004) has  
252 been provided.

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

261         **Competence.** Sport competence was measured using an adapted version of the Sport  
262 Competence Inventory from Causgrove Dunn et al. (2007), which assesses athletes’  
263 perceived technical, tactical and physical competence in their sport. In the instructions,  
264 technical skills were described as an athlete’s ability to move and perform the tasks necessary  
265 to achieve success in his/her sport (e.g., passing, shooting, guarding and skating). Tactical

266 skills were described as focusing on the specific actions and decisions that athletes make  
267 during competition to gain an advantage over their opponents (e.g., decision-making, reading  
268 the play and strategy). Finally, physical skills were described as those relating to physical  
269 fitness and functional qualities that allow athletes to perform sports skills and meet a sport's  
270 physical demands (e.g., speed, agility and endurance). Once these descriptions had been  
271 provided athletes were asked to rate their competence for the three aspects of competence  
272 using a 5-point scale ranging from 1 (*not at all competent*) to 5 (*extremely competent*). Scores  
273 for the three items were then averaged to provide an overall indicator of sport competence.  
274 This scale has been shown to be a valid indicator of sport competence (e.g., Dirks, Treat, &  
275 Weersing, 2007; Senko & Harackiewicz, 2002), and Causgrove Dunn et al. (2007) provided  
276 evidence for its internal consistency (alpha coefficient = .86).

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

## 286 **Procedures**

287 **UK Sample.** After receiving approval from the University Ethics Committee, head  
288 coaches of teams from the six sports were contacted and asked for the opportunity to speak  
289 with the athletes they coach and invite them to participate in the study. For coaches who  
290 agreed to permit access to the athletes they coached, convenient times and dates for data

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

301 **Malaysian Sample.** Similar procedures to those used for the UK sample were used to  
302 collect data in Malaysia. All participants were fluent in English as they learnt it as part of  
303 their University curriculum<sup>4</sup> so there was no need for any translation or adjustment of the  
304 questionnaire pack for data collection in Malaysia. Questionnaire packs were printed locally  
305 in Malaysia by a nominated representative who was trained in the data collection procedures.  
306 Data collection took place over a three-month period in the middle of the competitive season.  
307 Completed questionnaires were sent to the UK for data entry and analysis via a secure  
308 international courier.

## 309 **Results**

### 310 **Descriptive Statistics, Scale Reliabilities and Correlational Analyses**

311 All data analyses were conducted using SPSS version 22.0. Descriptive statistics,  
312 Cronbach's (1951) alpha coefficients and bivariate Pearson correlations for all study  
313 variables are presented in Table 2. Alpha coefficients indicated acceptable to excellent levels  
314 of internal reliability (Nunnally, 1978) for all scales in both the UK and Malaysian samples.

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<sup>4</sup> All Malaysian participants were either current or previous university students.

315 Based on the mean values presented in Table 2, on average, both UK- and Malaysia-based  
316 athletes perceived their coach to be quite effective for all of the assessed dimensions of  
317 coaching effectiveness, and scored moderately highly for three of the four outcomes (i.e., all  
318 but moral identity). For moral identity, on average both UK- and Malaysia-based athletes  
319 only scored moderately on the degree to which moral character was experienced as a central  
320 part of their overall self-concept. Pearson correlations were interpreted in accordance with  
321 Cohen's (1992) guidelines on effect sizes. In both the UK and Malaysian samples, the four  
322 dimensions of coaching effectiveness were strongly and positively interrelated and athletes'  
323 perceptions for all dimensions of coaching effectiveness were moderately and positively  
324 interrelated with all athlete-level outcomes.

### 325 **Multiple Hierarchical Regression Analyses**

326 A series of hierarchical multiple regression analyses were performed to test the main  
327 study hypotheses. For each regression, sex, sport experience and sport type (i.e.,  
328 team/individual) were entered in an initial step to control for any effects of these variables on  
329 the dependent variables. Then, in a subsequent step the coaching effectiveness dimension  
330 hypothesized to predict the relevant dependent variable was entered<sup>5</sup>. Specifically, motivation  
331 effectiveness was entered as the predictor for connection and confidence, technique  
332 effectiveness was entered as the predictor for competence, and character building was entered  
333 as the predictor for character. The results of these analyses are presented in Table 3.

334 Four multiple regressions were conducted with both datasets. First, for the analysis  
335 predicting connection, in the UK data the control variables collectively explained 7% of its  
336 variance in the initial step; the subsequent step demonstrated motivation effectiveness to be a

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<sup>5</sup> 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.

337 significant positive predictor of connection, explaining an additional 29% of its variance. In  
338 the Malaysian data, the control variables accounted for 9% of the variance in connection, and  
339 motivation effectiveness accounted for a further 41%. Second, for the analysis predicting  
340 sport confidence, in the UK data the control variables collectively explained 5% of its  
341 variance in the initial step; the subsequent step demonstrated motivation effectiveness to be a  
342 significant positive predictor of sport competence, explaining an additional 14% of its  
343 variance. In the Malaysian data, the control variables accounted for 3% of the variance in  
344 sport confidence, and motivation effectiveness accounted for an additional 19%.

345 Third, for the analysis predicting sport competence, in the UK data the control  
346 variables collectively explained 3% of its variance in the initial step; the subsequent step  
347 demonstrated technique effectiveness to be a significant positive predictor of sport  
348 competence, explaining an additional 7% of its variance. In the Malaysian data, the control  
349 variables accounted for 7% of the variance in sport competence, and technique effectiveness  
350 accounted for an additional 19%. Finally, for the analysis predicting moral identity, in the UK  
351 data the control variables collectively explained 3% of its variance in the initial step; the  
352 subsequent step demonstrated character building effectiveness to be a significant positive  
353 predictor of moral identity, explaining an additional 7% of its variance. In the Malaysian  
354 data, the control variables accounted for 10% of the variance in moral identity, and character  
355 building effectiveness accounted for a further 17%.

## 356 Discussion

357 Sport coaches fulfil numerous roles aimed at influencing and enhancing athletes'  
358 learning and performance. One way of evaluating how effectively coaches are accomplishing  
359 these roles is by assessing a range of desired outcomes proposed to result from effective  
360 coaching. Drawing upon the conceptual arguments of both Feltz et al. (1999) and Côté and  
361 Gilbert (2009), in the current study we sought to investigate whether team- and individual-



362 sport athletes' perceptions of their coach's effectiveness were predictive of four athlete-level  
363 outcomes. Moreover, we aimed to examine whether the predicted effects would be supported  
364 in athletes from both the UK and Malaysia. Over the following paragraphs we review and  
365 discuss the findings relating to these study aims.

366 First, we hypothesized that athletes' perceptions of their coach's motivation  
367 effectiveness would positively predict levels of athlete connection, as represented by the  
368 strength of the coach-athlete relationship (Côté & Gilbert, 2009; Jowett & Cockerill, 2002;  
369 Jowett & Meek, 2000). Regression analyses provided support for this hypothesis, with  
370 athletes' perceptions of their coach's motivation effectiveness explaining 29% and 41%<sup>6</sup>,  
371 respectively, of the variance in UK- and Malaysia-based athletes' ratings of the strength of  
372 the coach-athlete relationship. Thus, when athletes perceived their coach to be effective in  
373 developing the psychological skills and motivational states of athletes they tended to report  
374 greater connection with their coach. Whilst this may be due to the coach's ability to develop  
375 coach-athlete cohesion as argued previously, other mechanisms may also be involved. For  
376 instance, Myers, Wolfe, Maier, Feltz and Reckase (2006) found soccer and ice hockey  
377 players' perceptions of their coach's motivation competency positively predicted satisfaction  
378 with their coach. It is therefore possible that when coaches engage in behaviors perceived as  
379 effective in developing athletes' psychological preparation and skills, this may result in  
380 athletes being more satisfied with their coach, leading to stronger coach-athlete relationships.  
381 It may also be due to heightened perceptions of compatibility between coach and athlete, as  
382 past research has shown female basketball players who perceived high compatibility with  
383 their coach evaluated their coach's behaviors more positively (Kenow & Williams, 1999).

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<sup>6</sup> 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.

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

386 We also anticipated athletes' perceptions of their coach's motivation effectiveness  
387 would positively predict athletes' sport confidence. Regression analyses supported this  
388 hypothesis, as perceptions of motivation effectiveness explained 14% and 19%, respectively,  
389 of the variance in UK- and Malaysia-based athletes' sport confidence. Thus, consistent with  
390 our hypothesis, when athletes perceived their coach to be effective in developing the  
391 psychological skills and motivational states of athletes, they tended to report increased sport  
392 confidence. Past research has also identified a positive link between female volleyball  
393 coaches' motivation efficacy and their players' perceptions of team efficacy (Vargas-  
394 Tonsing, Warners, & Feltz, 2003). Coaches perceived as being more effective in motivation  
395 effectiveness may engage more frequently in coaching behaviors seeking to develop athletes'  
396 psychological skills such as imagery, goal setting, and self-talk, which may help athletes to  
397 increase their confidence levels. Additionally, coaches perceived as more effective in  
398 motivation effectiveness may also utilize efficacy-enhancing coach behaviors such as  
399 instruction-drilling, acting confident themselves, and encouraging positive talk (see Vargas-  
400 Tonsing, Myers, & Feltz, 2004). This finding reinforces the potential importance of coach  
401 motivation effectiveness for athlete sport confidence.

402 Next, we tested whether athletes' perceptions of their coach's technique effectiveness  
403 positively predicted athletes' sport competence. Regression analyses supported the relevant  
404 hypothesis, with perceptions of technique effectiveness explaining 7% and 19%, respectively,  
405 of the variance in UK- and Malaysia-based athletes' perceptions of sport competence. Thus,  
406 when perceiving their coach to be high in technique effectiveness, athletes tended to consider  
407 themselves more competent in technical, tactical and physical aspects of sport. Perceived  
408 technique effectiveness pertains to coaches' abilities to utilize coaching behaviors that

409 provide athletes with opportunities to master their technical, tactical, and physical sport skills.  
410 Therefore, it appears the more coaches spend time communicating information regarding  
411 athletes' technical, tactical and physical development, the more athletes feel competent in  
412 their sport (Vierimaa et al., 2012). Thus, these finding reinforce the possible importance of  
413 coach technique effectiveness for the enhancement of athlete sport competence.

414 Finally, we hypothesized athletes' perceptions of their coach's character building  
415 effectiveness would positively predict athletes' moral identity. Regression analyses supported  
416 the relevant hypothesis, with perceptions of character building effectiveness explaining 7%  
417 and 17%, respectively, of the variance in UK- and Malaysia-based athletes' perceptions of  
418 their moral identity. This finding is consistent with past research that has shown perceptions  
419 of character building effectiveness positively predict athletes' prosocial behavior (Boardley et  
420 al., 2008), and perceptions of character building competency negatively predict athletes'  
421 antisocial opponent and teammate behavior, and positively predict prosocial opponent  
422 behavior (Boardley & Kavussanu, 2009). This finding highlights the potential importance of  
423 coach character development effectiveness for athlete moral development.

424 Overall, our findings provide support for the conceptual framework outlined by Côté  
425 and Gilbert (2009), and their assertion that effective coaching should lead to development of  
426 athletes' connection, confidence, competence, and character. The current research has  
427 provided empirical support for the latter aspects of this proposed framework by linking  
428 perceptions of coaching effectiveness with indices of the four athlete-level outcomes  
429 specified. Further, although the three types of coaching knowledge specified in Côté and  
430 Gilbert's (2009) definition of coaching effectiveness (i.e., professional, interpersonal, and  
431 intrapersonal) were not specifically investigated, all three types of coaching knowledge are  
432 likely to underpin effective coaching behaviors across the three dimensions of coaching  
433 effectiveness investigated. For instance, professional knowledge is likely to inform coaches'

434 diagnostic and skill-development behaviors and is therefore essential for prominent levels of  
435 technique effectiveness. Similarly, interpersonal knowledge is expected to be central to  
436 coaching behaviors aimed at establishing connections with athletes and therefore should  
437 undergird motivation effectiveness. Finally, intrapersonal knowledge is essential for effective  
438 reflective practice and therefore is likely to support all aspects of coach development and  
439 learning across the four dimensions of coaching effectiveness. Future researchers are  
440 encouraged to specifically investigate these proposed links between coach knowledge,  
441 behavior, and effectiveness.

442         A further aim of this study was to determine whether our findings were consistent  
443 between athletes from the UK and Malaysia. Overall, our findings were generally consistent  
444 between the two cultures, with all four of our main hypotheses supported in both the UK and  
445 Malaysia data. However, closer examination of our findings shows that effect sizes were  
446 consistently larger in the Malaysia data than in the UK data. Whilst it is difficult to identify  
447 what specifically may explain this, it is possible this difference may be related to the  
448 identified differences in coach development between the two countries. More specifically, it  
449 may be that the increased focus on participation and health-related outcomes in Malaysia  
450 allows coaches to tailor their coaching towards the specific needs of athletes without having  
451 to be concerned with the performance-related outcomes UK-based coaches are also asked to  
452 focus on. This may lead to a strengthening of the link between athletes' perceptions of their  
453 coach's effectiveness and athlete-level outcomes seen in the current data. However, as we  
454 didn't specifically look at this issue, future researchers are encouraged to investigate factors  
455 such as this that may explain the larger effect sizes seen in the Malaysia data.

#### 456 **Limitations and Future Directions**

457         The current study revealed numerous interesting findings. Despite this, several  
458 limitations are evident, and the findings should be interpreted with these in mind. First, self-

459 report measures were used to assess all study variables. Although fully validated measures  
460 were used throughout, it is still possible the study findings were affected to some degree by  
461 issues such as social desirability (Reynolds, 1982), and anchoring effects, and time pressure  
462 (see Paulhus & Vazire, 2007). Future researchers could look to replicate the study findings  
463 using alternate methods of assessment such as other-reports and objective measures of athlete  
464 outcomes (e.g., performance in skill tests, observed pro-social behavior). Second, use of a  
465 cross-sectional design limits the study findings. Such designs are useful when conducting an  
466 initial exploratory study such as this one, but are limited in that they are unable to determine  
467 cause and effect relationships between study variables (Carlson & Morrison, 2009). Future  
468 researchers could employ an experimental design whereby aspects of coaching effectiveness  
469 are manipulated to determine their effect on one or more of the athlete outcomes outlined by  
470 Côté and Gilbert (2009). Next, although we investigated one dependent variable for each of  
471 the four athlete-level outcomes delineated by Côté and Gilbert (2009), other variables could  
472 have been selected for investigation. As such, future researchers are encouraged to investigate  
473 additional variables that may stem from effective coaching, such as enjoyment and moral  
474 disengagement. Further, although we matched the two samples for sport type, it was not  
475 possible to match them for all sample characteristics. Although we controlled for some of  
476 these characteristics in our analyses, it is still possible these or other non-cultural differences  
477 may have influenced the study findings. Future researchers should seek to match samples  
478 more closely for demographic characteristics when comparing samples from distinct cultures.  
479 In addition, although we controlled for effects of team versus individual sport classification in  
480 our analyses, it would be interesting in future research to specifically explore the effects of  
481 such differences. For instance, researchers could investigate whether levels of perceived  
482 coach effectiveness across the four dimensions of coaching efficacy differ between team and  
483 individual sports. Researchers could also explore other research questions centered on group

484 differences, such as whether athletes' perceptions of their coach's game-strategy  
485 effectiveness differ for those coached by mass participation versus performance-related  
486 coaches. Another interesting avenue for future work would be to determine whether coach  
487 self-reports of coaching efficacy predict the four athlete-level outcomes assessed presently.  
488 Finally, researchers should also look to extend the present findings by studying links between  
489 coaching effectiveness and athlete-level outcomes in cultures beyond the two investigated  
490 here.

### 491 **Conclusion**

492 In conclusion, the current study linked athletes' perceptions of their coach's effectiveness  
493 with various athlete-level outcomes. In doing so it provided support for Côté and Gilbert's  
494 (2009) conceptual framework across a range of team and individual sports and in two  
495 divergent cultures. Additionally, the study provided further support for the relevance of the  
496 coaching efficacy model (Feltz et al., 1999) for research on coaching effectiveness. Overall  
497 our findings provide support for the potential importance of athletes' perceptions of their  
498 coach's effectiveness for the optimal development of their competence, connection,  
499 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	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
<b>UK Sample</b>									
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
<b>Malaysia Sample</b>									
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	<i>b</i>	SE B	$\beta$	<i>t</i>	$R^2$	<i>F</i> Change
<b>Connection</b>						
<i>United Kingdom</i>						
<i>Step 1</i>						7.06
Sex	.37	.10	.22	3.70***		
Sport Experience	.00	.01	.03	.60	.07	
Individual vs. Team	.22	.09	.14	2.39*		
<i>Step 2</i>						80.81
Motivation Effectiveness	.34	.03	.48	8.98***	.29	
<i>Malaysia</i>						
<i>Step 1</i>						9.83
Sex	.47	.10	-.02	-.46		
Sport Experience	.07	.01	.23	4.01***	.09	
Individual vs. Team	.31	.10	.18	3.13**		
<i>Step 2</i>						152.27
Motivation Effectiveness	.35	.02	.60	12.34***	.41	
<b>Confidence</b>						
<i>United Kingdom</i>						
<i>Step 1</i>						5.24
Sex	-.09	.06	-.08	-1.36		
Sport Experience	.02	.00	.19	3.19*	.05	
Individual vs. Team	-.00	.06	.00	-.05		
<i>Step 2</i>						27.65
Motivation Effectiveness	.14	.02	.31	5.25***	.14	
<i>Malaysia</i>						
<i>Step 1</i>						3.62
Sex	-.10	.05	-.11	-1.91		
Sport Experience	.01	.01	.08	1.44	.03	
Individual vs. Team	-.11	.05	.10	2.11*		
<i>Step 2</i>						54.67

Motivation Effectiveness	.13	.01	.42	7.39***	.19	
<b>Moral Identity</b>						
<i>United Kingdom</i>						
<i>Step 1</i>						2.96
Sex		.05	.06	.05	.86	
Sport Experience		.01	.00	.10	1.61	.03
Individual vs. Team		-.15	.06	-.15	-2.48*	
<i>Step 2</i>						10.82
Character Building Effectiveness		.08	.02	.20	3.29**	.07
<i>Malaysia</i>						
<i>Step 1</i>						10.96
Sex,		.32	.07	-.23	-4.06***	
Sport Experience,		.03	.01	.12	2.21*	.10
Individual vs. Team		-.27	.08	.19	-3.37**	
<i>Step 2</i>						23.84
Character Building Effectiveness		.12	.02	.27	4.88***	.17
<b>Competence</b>						
<i>United Kingdom</i>						
<i>Step 1</i>						3.24
Sex,		-.20	.07	-.16	-2.61**	
Sport Experience,		.00	.00	.05	.85	.03
Individual vs. Team		.05	.07	.04	.71	
<i>Step 2</i>						11.55
Technique Effectiveness		.11	.03	.21	3.40**	.07
<i>Malaysia</i>						
<i>Step 1</i>						7.04
Sex		.03	.08	.02	.43	
Sport Experience		.02	.01	.08	1.45	.07
Individual vs. Team		.33	.08	.23	4.12***	
<i>Step 2</i>						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.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$