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The relationship between coach leadership, the coach-athlete relationship, team success, and the positive developmental experiences of adolescent soccer players

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The relationship between coach leadership, the coach-athlete relationship, team success, and the positive developmental experiences of adolescent soccer players

Abstract

Background: The goals of participation youth sports are primarily concerned with the facilitation of positive youth development as opposed to outright success. Consequently, there are strong theoretical and empirical links between sports coaching and athlete development. Transformational leadership behaviours, in particular, have been theoretically linked to positive developmental outcomes within a youth sport context, while the coach-athlete relationship is a key tool used by coaches who aim to teach life skills to young athletes. Outright team success has also been shown to correlate with important developmental variables such as a mastery climate and athlete perception of youth sports coaches. **Aims:** The purpose of this study was to test the relationship between coach transformational leadership behaviours, the perceived quality of the coach-athlete relationship, team success, and the positive developmental experiences of adolescent soccer players. **Method:** Cross-sectional data were taken from 455 adolescent athletes aged between 11 and 18 years. Each participant was competing in a local soccer competition that is classified as a participation sport. Thus, the theoretical focus is on developmental and skill gains. Each participant completed the Differentiated Transformational Leadership Inventory for Youth Sport, the Coach-Athlete Relationship Questionnaire, and the Youth Experience Survey for Sport. Team success was measured by the total number of competition points accumulated during the season. **Findings:** The results show that coach transformational leadership behaviour and the coach-athlete relationship have a moderate positive correlation with developmental experiences. Team success has no relationship with overall developmental experiences. The best predictor of developmental experiences is a combination of coach transformational leadership behaviour and the quality of the coach-athlete relationship. The most influential leadership behaviours are individual consideration, intellectual stimulation, and appropriate role modelling. **Discussion:** Transformational leadership and the quality of the coach-athlete relationship may work synergistically to influence positive athlete outcomes within youth sports. Importantly, coaches who practise within the youth sport context are able to facilitate positive developmental outcomes from both team success and team failure by taking advantage of naturally occurring teachable moments. The best way to take advantage of these may be to engage in intellectual stimulation, individual consideration, and positive role modelling, in addition to facilitating positive, developmentally appropriate coach-athlete relationships. Future coach education programmes should incorporate relevant interpersonal and intrapersonal skills that allow youth sports coaches to engage in these behaviours. Longitudinal work is needed in order to make causal inferences between transformational leadership behaviour, the quality of the coach-athlete relationship, and positive youth development through sports.

Keywords

soccer, adolescent, experiences, developmental, positive, players, success, relationship, team, athlete, leadership, coach, between

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**The relationship between coach leadership, the coach-athlete relationship, team success
and the positive developmental experiences of adolescent soccer players.**

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26

Abstract

27 *Background.* The goals of participation youth sports are primarily concerned with the
28 facilitation of positive youth development as opposed to outright success. Consequently,
29 there are strong theoretical and empirical links between coach behaviour and developmental
30 outcomes. Transformational leadership behaviours in particular, have been theoretically
31 linked with positive developmental outcomes within a youth sport context, while the coach-
32 athlete relationship is a key tool used by coaches who aim to teach life skills to young
33 athletes. Outright team success has also been shown to correlate with important
34 developmental variables such as a mastery climate and athlete perception of youth sport
35 coaches.

36 *Aims.* The purpose of this study was to test the relationship between coach transformational
37 leadership behaviours, the perceived quality of the coach-athlete relationship, team success,
38 and the positive developmental experiences of adolescent soccer players.

39 *Method.* Cross-sectional data was taken from 455 adolescent athletes aged between 11 and 18
40 years of age. Each participant was competing in a local soccer competition that is classified
41 as a participation sport. Thus, the theoretical focus is on developmental and skill gains. Each
42 participant completed the Differentiated Transformational Leadership Inventory for Youth
43 Sport, the Coach-Athlete Relationship Questionnaire, and the Youth Experience Survey for
44 Sport. Team success was measured by the total number of competition points accumulated
45 during the season.

46 *Findings.* Results show that coach transformational leadership behaviour and the coach-
47 athlete relationship have a moderate positive correlation with developmental experiences.
48 Team success has no relationship with overall developmental experiences. The best predictor
49 of developmental experiences is a combination of transformational leadership behaviour and

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50 the quality of the coach-athlete relationship. The most influential leadership behaviours are
51 individual consideration, intellectual stimulation and appropriate role modelling.

52 *Discussion.* Transformational leadership and the quality of the coach-athlete relationship may
53 work synergistically to influence positive athlete outcomes within youth sport. Importantly,
54 coaches who practice with the youth sport context should not have team success as the
55 primary aim of their coaching practice when developmental outcomes take precedence. The
56 best way to increase positive developmental outcomes may be to engage in intellectual
57 stimulation, individual consideration, and positive role modelling. Transformational
58 leadership provides a sound theoretical and empirical basis for evidence-based coaching
59 practice and coach-education initiatives. Future coach education programs should also
60 incorporate relevant interpersonal skills to allow youth sport coaches to facilitate positive and
61 developmentally-appropriate coach-athlete relationships. Longitudinal work is needed in
62 order to make causal inferences between transformational leadership behaviour, the quality of
63 the coach-athlete relationship and positive youth development through sport.

64

65 Key words: Youth Sport, Coaching, Transformational Leadership

66

67 **The relationship between coach leadership, the coach-athlete relationship, team success**
68 **and the positive developmental experiences of adolescent soccer players.**

69 The focus on facilitating positive youth development through organised sporting
70 programs has intensified gradually over recent years. This interest has been driven by a
71 gradual shift in psychology from a deficit-based understanding of psychopathology and
72 developmental trajectories to an asset-based understanding (Gould and Carson 2008).
73 Consequently, positive youth is typically associated with the development of personal
74 strengths and assets (Damon 2004). It is argued that the plasticity of adolescent development
75 combined with a strengths-based approach to development leads to key developmental gains
76 (Lerner et al. 2005). This asset-building approach has been highlighted by Benson (2007) as
77 providing essential protection against high-risk and antisocial behaviours, and the
78 enhancement of capabilities that allow youth to be successful in school and in the
79 community.

80 While a wide range of approaches can result in positive youth development (Catalano
81 et al. 2004), youth sport has been promoted as a unique social context with the potential to
82 facilitate many developmental assets (Fraser-Thomas, Côté and Deakin 2005; Weiss 2008).
83 In fact, youth sport participation is associated with many general indicators of development,
84 including identity development, personal exploration, initiative, improved cognitive and
85 physical skills, cultivating social connections, teamwork, and social skills (Hansen, Larson
86 and Dworkin 2003). When compared to formal schooling, unstructured, or non-voluntary
87 activities, organised leisure activities provide an appropriate combination of attention,
88 motivation and challenge that makes youth more open to developmental gains (Larson 2000).
89 In support of this, youth who participate in sports and other extracurricular activities have
90 been shown to report higher rates of learning experiences and life skill gains than those who
91 participate in regular schooling and unsupervised time (Dworkin, Larson and Hansen, 2003).

92 However, despite popular claims that sport facilitates positive development, there is a
93 dearth of empirical evidence to suggest that sport itself is a sufficient vehicle (Brunelle,
94 Danish and Forneris 2007). Studies of out-of-school activities have shown that sport was the
95 only activity that brought about both positive and negative developmental outcomes for youth
96 (Eccles and Barber 1999; Hansen, Larson and Dworkin 2003). Thus, sports participation does
97 not inherently facilitate positive development, but rather, under the right conditions sport can
98 be used as a vehicle to facilitate positive youth development. Fraser-Thomas et al. (2005)
99 argue that there are two contextual factors that are associated with either positive or negative
100 development through sport; program design and adult influence. Peterson (2004) extends this
101 by concluding that it is the personal characteristics of group leaders that are critical for the
102 success of programs of positive youth development. This is reinforced by Côté and Gilbert
103 (2009) who place the development of competence and self-esteem, along with the
104 development of character and social engagement, as the athlete outcomes of effective
105 coaching.

106 The training of youth sports coaches has shown to result in increases in positive
107 developmental outcomes such as self-esteem and personal and social skills (Coatsworth and
108 Conroy 2009; Macdonald, Côté and Deakin 2010; Smoll et al. 2003). Coatsworth and Conroy
109 (2009) have taken significant steps towards an understanding of how positive youth
110 development may take place within a 'real world' context. They concluded that the behaviour
111 of a coach in the form of praising autonomous behaviour results in increases to perceived
112 competence and self-esteem, which in turn lead to the positive developmental outcomes of
113 initiative, goal setting and identity reflection. Despite this, very little is known about the
114 causal mechanisms that explain the variability in developmental outcomes that are garnered
115 by young athletes as a result of sports participation. In particular, little is known about
116 specific qualities and behaviours of the coach that may impact these outcomes (Petitpas,

117 Cornelius, Van Raalte, & Jones, 2005). Consequently, this lack of evidence is manifested in
118 an inability to increase the consistency of systematic developmental benefits (Conroy &
119 Coatsworth, 2006). It is therefore important to begin to systematically explore the possible
120 coach behaviours that are associated with positive youth development.

121 A promising avenue for research has been the transformational leadership theory.
122 Transformational leadership is a form of leadership that occurs when leaders: broaden and
123 enlarge the interest of those whom they lead; act morally; motivate their followers to go
124 beyond individual self-interest for the good of the group and address and engage each
125 individual follower in true commitment (Avolio & Bass, 2002). Rowold (2006) has
126 demonstrated that the coach's transformational leadership behaviour is positively correlated
127 with satisfaction with the coach, and the effort that athletes put into training. The degree of a
128 coach's transformational leadership behaviour has also been shown to predict athlete
129 performance, task and social cohesion, and intrinsic motivation (Callow et al. 2009;
130 Charbonneau, Barling and Kelloway 2001). Further, Vallee and Bloom (2005) have argued
131 that a coach's transformational leadership behaviour provides the foundation for the holistic
132 development of athletes and successful University sporting programs. The culmination of this
133 research has led to the conclusion that transformational leadership is extremely important
134 within a participation youth sport context. Its' unique components such as intellectual
135 stimulation, facilitating positive motivation, and strengths-based individual consideration are
136 argued to be key determinants of positive developmental outcomes for young athletes (Vella,
137 Oades and Crowe in press).

138 Jowett and Chaundry (2004) have shown that positive athlete outcomes such as team
139 cohesion may better be predicted by coach leadership behaviours in conjunction with the
140 athlete's perception of the coach-athlete relationship. This is consistent with suggestions that
141 coach leadership aimed at facilitating positive outcomes for athletes may best be conceived of

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142 as incorporating both coach behaviour and the coach-athlete relationship (Vella, Oades and
143 Crowe 2010). Such suggestions are complemented by qualitative research that shows that the
144 coach-athlete relationship was a necessary tool of youth sports coaches used to facilitate the
145 positive developmental outcome of life skill development (Gould et al. 2007) and are
146 consistent with the assertion that engaging relationships with adult role models is an essential
147 component of positive youth development programs (Fraser-Thomas, Côté and Deakin 2005;
148 Peterson 2004). The coach-athlete relationship may therefore be an important causal variable
149 when considering positive youth development through sport, and it may be particularly
150 valuable to examine the impact of the coach-athlete relationship in conjunction with
151 transformational leadership behaviour. This approach would be consistent with recent work
152 which has shown that relational variables mediate the relationship between transformational
153 leadership and follower outcomes (Walumbwa and Hartnell 2011).

154 For optimal developmental outcomes, it has been consistently suggested that coaches
155 define success in terms of providing maximum effort, improving skills, and increasing
156 positive interpersonal interactions, as opposed to outright success (Martens 2004; Smoll and
157 Smith 2005). Thus sports participation is much more likely to lead to negative developmental
158 outcomes for athletes if they are lead to believe that the only objective is to beat their
159 opponents. In support of this, Cumming and colleagues have shown that winning percentage
160 does not predict athlete enjoyment, plans to play sport for the following year, or how much
161 young athlete's enjoyed playing for their coach (Cumming, Smoll, Smith and Grossbard
162 2007). However, the relationship between 'winning' and positive development remains
163 unclear. It is plausible that those athletes with higher rates of personal and social skills,
164 initiative and self-esteem may as a consequence be more successful athletes. Consequently,
165 there may be a positive relationship between developmental experiences and team success.
166 Alternatively, team success may be achieved at the expense of developmental experiences. In

167 this case, a coach may forego opportunities to teach life skills in order to teach technical and
168 tactical skills and therefore there may be a negative relationship between team success and
169 developmental experiences. Lastly, it is also plausible that the two are unrelated. In this case,
170 both winning and losing may be seen as opportunities to teach life skills and developmental
171 assets, rendering both team success and team failure as conducive to facilitating positive youth
172 development through sport.

173 Thus, this study sought to investigate the relationship between coach transformational
174 leadership behaviour, the coach-athlete relationship, team success, and the positive
175 developmental experiences of youth sports participants over a single sports season. Given the
176 theoretical benefits that are derived from the use of transformational leadership as a measure
177 of coach behaviour in participation youth sports (Vella, Oades and Crowe in press), of
178 particular interest is interaction between the components of transformational leadership and
179 specific developmental experiences. Extending results of previous research (Jowett and
180 Chaundry 2004), and consistent with the definition of coach leadership (Vella, Oades and
181 Crowe 2010), it is hypothesised that a combination of transformational leadership behaviour
182 and the perceived quality of the coach-athlete relationship will provide the most reliable
183 prediction of positive developmental experiences during sports participation. Team success is
184 hypothesised to have a positive relationship with positive developmental experiences, but is
185 hypothesised to account for a much smaller proportion of the variance in positive
186 developmental experiences than coach transformational leadership behaviour and the
187 perceived quality of the coach-athlete relationship. Further, this study will explore which
188 combination of transformational leadership behaviours provide the best prediction of positive
189 developmental experiences. This is important as certain components such as strengths-based
190 individual consideration are theoretically linked to the greatest developmental gains (Roth
191 and Brooks-Gunn 2003; Vella, Oades and Crowe in press). Lastly, as several sex differences

192 have been found in previous studies of community youth development programs (Lerner,
193 Lerner, et al. 2005), this study also examined potential sex differences in these relationships.

194 **Method**

195 **Participants**

196 A total of 455 adolescent soccer players from one metropolitan soccer association in
197 Sydney, Australia took part in the study. Two hundred and seventy-four participants were
198 male (60%). Participants ranged from 11 to 18 years of age, with a mean age of 15.12 years
199 (SD = 1.77). Participants had an average playing experience of 7.23 years (SD = 3.27).
200 According to association rules, each player played and lived within one medium to high
201 socio-economic status region of Sydney which is governed by one soccer association. Each
202 coach also lived within this region. All participants were categorised as participation athletes
203 engaged in team sport. Participation coaching is categorised by an emphasis that is not on
204 competition or performance, and where participants are less intensively engaged with the
205 sport. The objectives of participation coaches are characterised by short-term goals,
206 enjoyment, and health-related outcomes (Côté and Gilbert 2009), however, winning may be a
207 more likely goal in practice (Jones and Wallace 2005). Participation sport was chosen as it
208 represents programs where the emphasis is on developmental outcomes, rather than team
209 success, and as such they closely approximate community programs of positive youth
210 development. Each participant was engaged in a season-long commitment to a team of same-
211 aged athletes who were graded according to their ability. Each team competed weekly in a
212 league against teams of their own or similar ability from the same metropolitan area. Each
213 team trained once or twice weekly. In total, participants were drawn from 79 different teams,
214 over 16 different clubs. All coaches were screened for specialised training, but none were
215 found to have received any training other than the minimal coaching accreditation from the

216 national body. This course was reviewed and does not include any training that would
217 exclude them from this study.

218 **Measures**

219 **Transformational Leadership.** Athletes' perceptions of their coach's transformational
220 leadership behaviour was measured using the Differentiated Transformational Leadership
221 Inventory for Youth Sport (Vella, Oades and Crowe in press). The DTLI-YS contains 22
222 items that form 6 subscales; individual consideration, inspirational motivation, intellectual
223 stimulation, fostering acceptance of group goals and promoting team work, appropriate role
224 model, and contingency reward. Each item is rated on a 5-point Likert scale ranging from 1
225 (*not at all*) to 5 (*all of the time*). Example items are 'My coach is a good role model for me to
226 follow', 'My coach helps team members to develop their strengths', and 'My coach
227 challenges me to think about problems in new ways'.

228 **Coach-Athlete Relationship.** The athlete's perceived quality of the coach-athlete
229 relationship was measured using the Coach-Athlete Relationship Questionnaire (CART-Q;
230 Jowett and Ntoumanis 2004). The CART-Q contains 11 items that form 3 subscales;
231 closeness, commitment, and complementarity. However, the CART-Q is used as an overall
232 measure of the perceived quality of the coach-athlete relationship and subscales are
233 disregarded, as suggested by Lafreniere, Jowett, Vellerand and Carboneau (2011). Each item
234 is rated on a 7 point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).
235 Example items are 'I like my coach', 'I trust my coach', and 'I respect my coach'.

236 **Team Success.** As per the Soccer Association's rules all teams played 16 games in the
237 season. Each team received 3 competition points for a win, 1 point for a tie, and 0 points for a
238 loss. Thus, the total number of competition points accumulated over the 16-game season
239 provides an objective measure of team success. These totals ranged from 4 points (1 win, 1
240 tie and 14 losses) to 46 points (15 wins, 1 tie, and 0 losses).

241 **Positive Developmental Experiences.** Positive developmental experiences have been
242 measured using the Youth Experience Scale for Sport (YES-S; MacDonald et al. 2009). The
243 YES-S has 37 items that form 5 subscales; Personal and Social Skills, Cognitive Skills, Goal
244 Setting, Initiative, and Negative Experiences. Items are measured on a 4 point Likert scale
245 ranging from 1 (*Not at all*) to 4 (*Yes, definitely*). Example items are ‘I set goals for myself in
246 this activity’, ‘This activity increased my desire to stay in school’, and ‘I learned about
247 helping others’.

248 **Procedure**

249 Each club within the Soccer Association was contacted at the start of the season with
250 information about the study. In total, 16 different clubs agreed to participate in the study.
251 These clubs were then responsible for disseminating information to players via email and
252 their club website. Players under the age of 16 also required parental consent, and therefore
253 their parents were also informed. Each club contacted every player from 11 to 18 years of
254 age. Times were arranged for the researchers to collect data from each club during the last
255 two weeks of the season. This time was chosen to ensure that each player had experienced a
256 minimum of one season playing under their coach.

257 Research activity was carried out at the club house of participating clubs. In
258 accordance with the approving institution ethics committee each participant, and their
259 nominated caregiver, was given verbal and written information on the study. This was
260 followed by a written consent form for participants under the age of 16. Participants aged 16
261 and over gave tacit consent by returning a completed survey. Each participant was given a
262 booklet that contained the YES-S, DTLI-YS and the CART-Q. The anonymous
263 questionnaires were completed in a quiet room, and took between 10 and 25 minutes to
264 complete. Importantly, coaches were not present at this time, and each participant was

265 assured of complete confidentiality. This was aided by a box that the researchers took to each
266 meeting for the participants to place their completed surveys in.

267 **Data Analysis**

268 All data were subjected to tests of normality and heterogeneity of variance. All data
269 from the DTLI-YS and CART-Q appeared to be moderately negatively skewed (Skewness
270 statistics ranging from -.14 to -1.34) and had moderate kurtosis values (Kurtosis statistics
271 ranging from -.04 to 2.42). The only exception to this was the ‘Inspirational Motivation’
272 subscale of the DTLI-YS. For ease of interpretation, all data from these scales were
273 transformed using the square root transformation as described by Tabachnick and Fidell
274 (2001) for moderately negatively skewed data. Following this transformation, data proved to
275 be normally distributed (Skewness statistics ranging from .01 to .80, and Kurtosis statistics
276 ranging from -.09 to .78). Analyses were subsequently conducted using the transformed data.
277 The ‘Negative Experiences’ subscale of the YES-S was reverse scored when computing total
278 YES-S scores so that higher scores indicate more positive developmental experiences. All
279 YES-S data was normally distributed.

280 **Results**

281 **Descriptive Statistics and Scale Reliabilities**

282 Means, standard deviations, and Cronbach Alpha coefficients for all scales are
283 presented in Table 1. For understandability the untransformed statistics are presented. All
284 scales and subscales showed acceptable internal consistency with all Cronbach Alpha values
285 of greater than .70.

286 [Insert Table 1 here]

287 **Correlations**

288 Table 2 displays the Pearson correlation coefficients between the subscale and total
289 scores on all measures. Overall measures of transformational leadership and the coach athlete

290 relationship are significantly positively correlated with overall positive developmental
291 experiences. High levels of coach transformational leadership behaviour, and a good quality
292 coach-athlete relationship were all associated with athletes who reported higher personal and
293 social skill experiences, goal setting experiences, and initiative experiences, as well as lower
294 rates of negative experiences. Only transformational leadership behaviour was associated
295 with cognitive skill experiences. More specifically, each transformational leadership
296 behaviour was significantly positively correlated with personal and social skills, goal setting,
297 and initiative, and significantly negatively correlated with negative experiences. Cognitive
298 skills had a positive correlation with intellectual stimulation and appropriate role modelling.
299 The coach athlete relationship was associated with all developmental experiences except for
300 cognitive skills. Further, team success had no relationship with overall positive
301 developmental experiences or with any specific developmental experience, except for
302 personal and social skill experiences.

303 [Insert Table 2 here]

304 **Regression Analyses**

305 Linear regressions were run to establish whether transformational leadership
306 behaviour, the coach-athlete relationship and team success are significant predictors of
307 positive developmental experiences. Transformational leadership behaviour ($F_{(1, 453)} = 55.89$,
308 $p < .001$, adjusted $R^2 = .11$) and the coach-athlete relationship ($F_{(1, 453)} = 74.18$, $p < .001$,
309 adjusted $R^2 = .14$) are significant predictors of positive developmental experiences. Team
310 success ($F_{(1, 453)} = 2.54$, $p = .11$, adjusted $R^2 = .00$) does not predict developmental
311 experiences.

312 A multiple regression analysis using backwards elimination was conducted in order to
313 ascertain the best predictors of positive developmental experiences. Criteria for removal of
314 predictors was set at a significance level of .10. Overall measures of coach transformational

315 leadership behaviour, the perceived quality of the coach-athlete relationship, and team
316 success were entered as predictor variables, with total YES-S score as the dependent variable.
317 Results show that a combination of coach transformational leadership behaviour and the
318 perceived quality of the coach-athlete relationship provide the best predictor of positive
319 developmental experiences ($F_{(2, 380)} = 46.58, p < .001$). The adjusted R^2 value indicated that
320 this model accounts for 19% of the variance in positive developmental experiences.

321 A multiple regression analysis using backwards elimination was also conducted in
322 order to ascertain the most influential transformational leadership behaviours in predicting
323 positive developmental experiences. Removal of predictors was set at a significance level of
324 greater than .10. All six transformational leadership behaviours were entered into the model
325 as predictor variables, with total YES-S score as the dependent variable. Results confirm that
326 a combination of individual consideration, intellectual stimulation and appropriate role
327 modelling provide the best predictor of positive developmental experiences ($F_{(3, 451)} = 20.32,$
328 $p < .001$). The adjusted R^2 statistic for this model shows that this model accounts for 11% of
329 the variance in developmental experiences.

330 **Sex Differences**

331 In order to test for a differential effect of transformational leadership behaviour on
332 positive developmental experiences as a function of sex, a multiple linear regression was
333 used. In this model, sex was entered as the moderating variable. Transformational leadership
334 behaviour was centred in order to address the issue of multicollinearity of the interaction term
335 by converting the raw DTLI total scores to z scores. The interaction term was calculated
336 using the DTLI total z scores and sex (male = 1, female = 2). Results confirm that there is no
337 significant effect of the interaction between sex and transformational leadership behaviour on
338 positive developmental experiences after controlling for each individually ($p > .05$).

339 Therefore, the relationship between coach transformational leadership behaviour and positive
340 developmental experiences is not influenced by the sex of the athlete.

341 **Discussion**

342 This study sought to investigate the relationship between coach transformational
343 leadership behaviour, the perceived quality of the coach-athlete relationship, team success,
344 and the positive developmental experiences of young athletes. Several important findings
345 were recorded. Firstly, results demonstrate that team success has no relationship with the
346 overall developmental experiences of young athletes. Secondly, overall ratings of coach
347 transformational leadership behaviours are positively correlated with all positive
348 developmental experiences, and are negatively correlated with negative developmental
349 experiences. More specifically, all transformational leadership behaviours were associated
350 with the development of personal and social skills, goal setting, and initiative. Only
351 intellectual stimulation, and appropriate role modelling were associated with the development
352 of cognitive skills. The perceived quality of the coach-athlete relationship is also positively
353 correlated with positive developmental experiences. As hypothesised, a combination of
354 transformational leadership behaviour and the quality of the coach-athlete relationship
355 provides the best predictor of positive developmental experiences. Individual consideration,
356 intellectual stimulation and appropriate role modelling were shown to be the most influential
357 transformational leadership behaviours when considering positive developmental
358 experiences.

359 Despite inconsistent results, programs of positive youth development have generally
360 been shown to have a positive impact on the lives of young athlete participants (e.g., Danish,
361 2002; Weiss, 2008). It has been argued that the coach is the key figure in facilitating this
362 impact (Fraser-Thomas, Côté and Deakin 2005; Peterson, 2004; Vella, Oades and Crowe
363 2011). Results of this study confirm that the coach plays a critical and influential role in

364 facilitating positive developmental outcomes for young athletes. Transformational leadership
365 and the quality of the coach-athlete relationship are significant predictors of positive
366 developmental experiences. In general, coaches who were low in transformational leadership
367 behaviour or who were reported to have poor quality coach-athlete relationships were more
368 likely to have athletes who had a greater number of negative experiences and a lower level of
369 personal and social skill, goal setting skill, cognitive skill, and initiative experiences.

370 Importantly, team success showed no relationship with overall ratings of positive
371 developmental experiences. This is problematic given that the sole criteria for judging the
372 effectiveness of most youth sports coaches is team success (Jones and Wallace 2005). This is
373 a promising and positive finding as it enables an opportunity for all coaches of youth sports to
374 become facilitators of positive developmental outcomes by demonstrating that the acquisition
375 of developmental assets is not dependent upon team success. The implication of this is that
376 coaches who practice within the participation youth sports context, where the emphasis of
377 participation is on making developmental gains (Côté et al. 2010), should emphasise the
378 acquisition of developmental assets, rather than focus their coaching practice on team
379 success. There is already some evidence to suggest that coaches within this context are aware
380 of this responsibility (Vella, Oades and Crowe 2011), however, how this knowledge
381 translates to 'real world' coaching practice is still unknown. Until youth sport coaches come
382 to value the acquisition of developmental assets over outright success as a measure of their
383 coaching effectiveness, coaching behaviour is unlikely to be transformed.

384 Coaches who value the acquisition of developmental assets are suggested to focus on
385 increasing transformational leadership behaviours and facilitating good coach-athlete
386 relationships that are developmentally appropriate. This follows the results of this study that
387 show that a combination of transformational leadership behaviour and the perceived quality
388 of the coach-athlete relationship provide the best predictor of positive developmental

389 experiences. Such results are consistent with previous research which has demonstrated that
390 coach leadership accounted for more of the variance in social and task cohesion when
391 combined with a measure of the coach-athlete relationship (Jowett and Chaundry, 2004).
392 These results are also consistent with work which places the coach-athlete relationship as an
393 inherent component of coach leadership (Vella, Oades and Crowe 2010). Further, this study
394 serves to confirm coach leadership as inherently constituted by both coach behaviour and the
395 quality of the coach-athlete relationship. Despite being separate constructs, there is a large
396 proportion of the variance in positive developmental experiences that is common to both
397 coach behaviour and the coach-athlete relationship. This suggests that the two constructs
398 largely work synergistically, rather than cumulatively, when explaining variations in athlete
399 outcomes.

400 The athletes' degree of perceived individual consideration, intellectual stimulation
401 and coach role modelling behaviours can explain the highest proportion of the variance in
402 positive developmental experiences. The individual consideration component of coach
403 behaviour captures the extent to which the coach can recognise the strengths and abilities of
404 each athlete and provide for their individual needs based on these strengths. It is unsurprising
405 that this component should be one of the most important in facilitating positive
406 developmental experiences given that positive youth development is underpinned by theory
407 which promotes the development of strengths and developmental assets (Benson 2007;
408 Damon 2004). A strengths and asset-based approach to developmental programs such as
409 participation sports is argued to be the key ingredient in facilitating important developmental
410 gains during a period of high developmental plasticity (Lerner, Almerigi et al. 2005). As
411 such, Benson (2007) has noted that the development of strengths increases the likelihood
412 young people to enhance key skills such as interpersonal and cognitive skills, which will
413 encourage them to engage and flourish in school and in the community.

414 Organised leisure activities such as sports are argued to be an appropriate avenue for
415 developmental gains because they provide a unique combination of motivation, attention and
416 challenge that cannot be found in regular schooling, or in unsupervised or non-voluntary
417 activities (Larson, 2000). Thus, it is not surprising that intellectual stimulation is an important
418 predictor of developmental experiences. This is reinforced by the finding that a coach's
419 intellectual stimulation behaviours are associated with the cognitive skill experiences of
420 athletes in this study. This is a fascinating finding that is worthy of further study. Given that
421 sport has already been associated with cognitive competence and academic achievement
422 (Broh, 2002; Hansen, Larson and Dworkin, 2003), these findings lay a platform for research
423 into the causal mechanisms of such development by showing that the intellectual stimulation
424 of adolescent athletes is associated with cognitive skill development.

425 The extent to which the coach is seen as an appropriate role model is also important.
426 Peterson (2004) acknowledges that it is the personal characteristics of group leaders such as
427 coaches that are critical to the success of positive youth development programs. Coaches
428 hold a position of significant influence in youth sport, being seen as an expert and role model
429 by young participants (Coatsworth and Conroy 2006). Coaches also have a greater number of
430 interactions within the sporting context than other influential agents such as parents or policy
431 makers, and their influence is steadily strong from early adolescence through to late teens
432 (Chan, Lonsdale and Fung in press). These results confirm that the coach is indeed a strong
433 and influential role model within youth sports, with the perceived quality of the coach as a
434 role model linked with the development of positive developmental experiences.

435 Demonstrated associations between coach transformational leadership behaviour and
436 positive developmental outcomes for athletes necessitate the consideration of coach training
437 as a primary source of promoting positive athlete outcomes. Following the results of this
438 study, coach training should focus on equipping coaches with the necessary skills to facilitate

439 positive, age- and context-appropriate relationships with athletes. It should also focus on
440 leadership training in order to increase the positive leadership behaviours of coaches in this
441 context, with transformational leadership providing a strong option on which to base such
442 training. Another appropriate avenue in this type of training is the Pyramid of Teaching
443 Success in Sports (Gilbert et al. 2010) which is a tool for promoting the professional
444 development of youth sport coaches. It is based on John Wooden's pyramid of success
445 (Wooden 2004), and incorporates many of the virtues and skills needed by youth sports
446 coaches to establish positive coach-athlete relationships and coach behaviour.

447 Transformational leadership training for youth sport coaches would address a piece of
448 the coaching education puzzle that has long been missing. Côté and Gilbert (2009) have
449 shown that coaching effectiveness incorporates three core components; professional
450 knowledge, interpersonal knowledge and intrapersonal knowledge. However, mainstream
451 coach education courses have typically focussed on the professional knowledge component
452 of effective coaching. As such, these coach education programs equip coaches with
453 knowledge of the game and of the sports sciences, but effectively render them as
454 inadequately qualified due to a lack of content that is relevant to real-world coaching practice
455 (Cushion, Armour and Jones 2003). As such, coaches of participation sports are reluctant to
456 engage with coach education courses because they lack relevant content, and would be more
457 likely to attend formal coach education programs if areas such as leadership were addressed
458 (Vargas-Tonsing 2007). Therefore, youth sport coaches seem to suggest that the current
459 coach education systems are not capable of equipping them with the skills necessary to
460 facilitate the theoretical goals of participation sports. This is evidenced by coach leadership
461 training programs which have shown positive results following training coaches in
462 interpersonal and intrapersonal skills (Smoll and Smith 2010) which are not currently
463 addressed through formal coach education channels.

464 A significant limitation of this study is the homogeneity of the sample. The sample is
465 relatively homogenous in terms of ethnicity and socio-economic-status. Generalisability is
466 also restricted by the context in which this study was conducted. All participants were drawn
467 from participation soccer clubs, where the focus (theoretically) is not on winning and success.
468 In order to generalise to alternate sports and contexts, such as performance sports or
469 individual sports, replication within these contexts is needed. Secondly, there is a possibility
470 of social desirability bias being present in this data. Given that the data for the coach-athlete
471 relationship and coach leadership measures showed a moderate negative skew it may be
472 assumed that at the very least there were ceiling effects present. Therefore, some caution has
473 been taken when examining results of this study. Further, in order to assert causality it is
474 necessary for future research to take measures over multiple time periods. Baseline and
475 follow up measures would go some way to providing evidence for the causal impact of coach
476 leadership on positive youth development that this study is unable to provide. Future research
477 may also wish to broaden the scope of analysis by incorporating contextual factors such as
478 club policy, parental influence, or peer influence.

479 In summary, transformational leadership behaviours and the quality of the coach-
480 athlete relationship have a strong association with the positive developmental experiences of
481 young athletes. This provides evidence for the influence of coach leadership as it is currently
482 defined (Vella, Oades and Crowe 2010). Importantly, team success had no impact on the
483 overall developmental experiences of these athletes, providing evidence that the
484 developmental goals associated with participation sports are not dependent upon team
485 success. Future coach training interventions are suggested to incorporate education and
486 training relating to relevant interpersonal and intrapersonal skills. Transformational
487 leadership behaviours and the skills necessary to facilitate positive coach-athlete relationships
488 should be a focus of future coach education. Particular attention should be paid to the

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489 individual consideration and inspirational motivation components of transformational
490 leadership.

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643 Table 1
 644 *Untransformed means, standard deviations and Cronbach Alpha coefficients for each*
 645 *subscale of the DTLI-YS, CART-Q, and YES-S.*
 646

	M	SD	α
DTLI	88.55	14.31	.93
Individual Consideration	16.52	3.03	.75
Inspirational Motivation	16.65	2.76	.72
Intellectual Stimulation	11.17	2.64	.74
Fostering Acceptance of Group Goals	12.09	2.17	.70
Appropriate Role Model	15.37	3.59	.84
Contingent Reward	16.74	3.13	.81
CART-Q	60.56	14.19	.95
YES-S	112.72	12.61	.86
Personal and Social Skills	43.60	6.24	.81
Cognitive Skills	9.31	3.64	.82
Goal Setting	11.13	2.67	.73
Initiative	13.92	2.04	.71
Negative Experiences	15.24	5.50	.84

647

648 Table 2
 649 *Pearson correlation coefficients between the subscale and total scores of the DTLI, CART-Q,*
 650 *YES-S, and team success.*

	Personal & social skills	Cognitive skills	Goal setting	Initiative	Negative Experiences	YES-S Total
Individual consideration	.25**	.03	.12**	.22**	-.21**	.29**
Inspirational motivation	.22**	.07	.14**	.20**	-.21**	.28**
Intellectual stimulation	.31**	.14**	.15**	.20**	-.08	.30**
Contingent reward	.19**	.01	.12*	.21**	-.20**	.24**
Fostering group goals	.23**	.06	.11*	.13**	-.10*	.22**
Appropriate role model	.27**	.15**	.17**	.17**	-.14**	.30**
DTLI-YS Total	.30**	.10*	.17**	.23**	-.19**	.33**
Coach-Athlete relationship	.34**	.06	.17**	.28**	-.25**	.38**
Team Success	.10*	.06	.04	.06	.01	.08

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

652