



Citation for published version:

Carr, S & Fitzpatrick, N 2011, 'Experiences of dyadic sport friendships as a function of self and partner attachment characteristics.', *Psychology of Sport and Exercise*, vol. 12, no. 4, pp. 383-391.
<https://doi.org/10.1016/j.psychsport.2011.03.003>

DOI:

[10.1016/j.psychsport.2011.03.003](https://doi.org/10.1016/j.psychsport.2011.03.003)

Publication date:

2011

Document Version

Peer reviewed version

[Link to publication](#)

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Experiences of dyadic sport friendships as a function of self and partner attachment characteristics

Abstract

Objectives

To examine the link between adolescent-parent attachment relationships and experiences of friendship quality in the context of the Actor-Partner Interdependence Model.

Design and method

One hundred and ninety three male adolescents involved in team sports completed self-report assessments of relationship security with a key parental attachment figure and of the nature of their friendship with a nominated sporting best friend. In 40 reciprocal best friend dyads friendship quality perceptions were examined as a consequence of attachment characteristics of both the *self* and one's *best friend*.

Results

Results provided evidence that the nature of the adolescent-parent attachment relationship was significantly related to sporting friendship experiences. More secure adolescent-parent attachment characteristics corresponded to more positive sporting friendships. Furthermore, adolescents' perceptions of the quality of dyadic sporting friendships were apparently constructed not only as a function of their own attachment characteristics but also of the attachment characteristics of their best friend.

Conclusion

There is a suggestion that adolescent perceptions of dyadic sporting friendships are constructed as a consequence of both actor and partner attachment characteristics.

Introduction

Studies targeting peer relationships in children and adolescents have conceptualised the issue in terms of peer acceptance, the perceived quality of mutual, dyadic friendships involving a degree of affection, or levels of popularity within a broader circle of peers to whom affective ties are not as strong (Newcomb & Bagwell, 1995). The perceived quality of dyadic friendships is the focus for the current investigation, specifically focusing on *features* of dyadic bonds that might be seen as indicators of relationship quality, such as the level of support, companionship, or conflict. Research has consistently identified such friendship quality in adolescence as a critical determinant of a variety of important outcomes such as general satisfaction with peer relations¹ (Ladd, 1999), emotional responses to peer relations (Hartup, 1989), peer acceptance (Parker & Asher, 1993) and rejection (Coie & Cillessen, 1993; Hartup, 1989; Ladd, 1999), self-esteem (Keefe & Berndt, 1996), social anxiety (La Greca & Moore Harrison, 2005) and achievement (Parker & Gottman, 1989). Weiss and her colleagues (e.g., Weiss, Smith, & Theeboom, 1996; Weiss & Smith, 1999, 2002; Smith, 2003) have identified young people's friendships in sport-related settings as a particularly important area for investigation.

In Weiss et al.'s (1996) qualitative work with children and adolescents a number of distinct dimensions emerged that help us to understand young people's friendship experiences in sport. Children and adolescents experienced a number of positive aspects of friendship from their involvement in sport, including companionship, self-esteem enhancement, intimacy, emotional support, and assistance in conflict resolution. Reported negative friendship dimensions included experiences of conflict and betrayal. In further research, Weiss and Smith (1999) expanded their earlier work (e.g., Weiss et al., 1996) by developing and validating the Sport Friendship Quality Scale (SFQS) as a means of assessing children's and adolescents' perceptions of the quality of these important aspects of their sporting friendships. The SFQS is a self-report measure of perceived dimensions of friendship quality that reflects children's perceptions of a relationship experienced with a nominated best friend in sport.

¹ In this sentence we take "friendship" to refer to a deeper and more intimate connection and "peer relationships" to refer to more superficial interactions which have lesser affective ties (Newcomb & Bagwell, 1995).

These developments have stimulated a body of research that has sought to enhance our understanding of the importance of quality in sport contexts in relation to issues such as well-being, motivation, and involvement. For example, Weiss and Smith (2002) identified young people's perceptions of ability to resolve conflict and companionship with a nominated best-friend in tennis as positively associated with commitment to the sport and levels of enjoyment. Ullrich-French and Smith (2006) showed that perceptions of positive dimensions of friendship quality were positively associated with enjoyment and levels of self-determined motivation in youth soccer. Moreover, the likelihood of children remaining involved in soccer was significantly predicted by perceived positive soccer friendship quality reported a year earlier, with those reporting more positive friendship dimensions being more likely to have continued their involvement (Ullrich-French & Smith, 2009). Cox and Ullrich-French (2010) recently identified that youngsters involved in physical education (PE) who reported peer relationships characterised by more positive friendship quality and general peer acceptance were less likely to experience worry in PE, had higher perceptions of competence, and reported higher levels of involvement in physical activity. Hence, evidence is mounting in support of the important role that friendship quality plays in youth sport.

Another important area of research has centred on identification of the antecedents of friendship quality in youth sport. Some of this research has focused on context-specific variables that are likely to facilitate or impede the development of positive friendships. For example, Ommundsen, Roberts, Lemyre, and Miller (2006) identified that perceptions of friendship quality were positively predicted by perceptions of the motivational climate created by coaches in the context of adolescent soccer. Specifically, a perceived mastery oriented motivational climate (emphasising features such as the encouragement of cooperative learning, all players having an important role regardless of ability, and effort being valued more highly than ability) positively predicted perceptions of friendship quality with a nominated best friend in soccer. In contrast, a perceived performance oriented environment (encouraging individual rivalry and promoting unequal recognition) negatively predicted friendship

quality. Such findings suggest that the manner in which the sporting environment is constructed by coaches may provoke a social atmosphere that enhances or impedes positive friendship formation.

In addition to contextual predictors of friendship quality researchers have also devoted attention to more distal antecedents. For example, recent sporting literature (e.g., Carr, 2009a, 2009b) has looked to young people's attachment relationships with parents as a potential predictor of their friendship quality. In the attachment literature West et al. (1998) have outlined that "...adolescents' success in creating new supportive relationships is critically influenced by the affectively charged pattern of attachment behaviors and beliefs about attachment carried forward from the attachment history with their parents" (p. 662). Previous sport-related research has explored the role of parental relationships from the perspective of a role modelling hypothesis (e.g., Gustafson & Rhodes, 2006), parental belief systems (e.g., Bois et al., 2002, 2005), and the construction of the parental motivational climate (e.g., Carr & Weigand, 2001; Carr, Weigand, & Hussey, 1999; Carr, Weigand, & Jones, 2001). Furthermore, Ullrich-French and Smith (2009) have recognised the importance of exploring how different social relationships in children's lives are interconnected and how they may interact to regulate broader experiences of sport. To this end, attachment theory offers an interesting and new perspective in relation to the influence of parental relationships on children and adolescents' sporting involvement (Carr, 2009a).

The sport psychology literature has begun to recognise attachment theory (e.g., Bowlby, 1969/1982, 1973, 1980) as a significant conceptual framework for advancing the understanding of social relationships in the context of sport and exercise (e.g., Carr, 2009a, 2009b; Davis & Jowett, 2010; Forrest, 2008). Bowlby (1969/1982) hypothesised infants as biologically predisposed to form selective bonds with special and proximate caring figures in their environment and suggested that formative discrimination of attachment figures begins in infancy, where proximity to significant others is of critical importance to the maintenance and restoration of safety. Attachment theorists (e.g., Ainsworth et al., 1978; Bowlby, 1973; Sroufe & Waters, 1977) have argued that different patterns of cognition, affect,

and behaviour develop in response to caregivers' sensitivity, availability, and responsiveness to infants' desire for proximity.

As young children develop, attachment theory predicts that the experiences of care and support provided by key caregivers (typically parents) help them to construct (or not) "a feeling of security and help-seeking behaviors that function to protect them in situations of distress and to facilitate their exploration of the social world in general" (Duchesne & Larose, 2007, p. 1502). These systems of cognition, affect, and behaviour are reflections of what Bowlby termed *internal working models* that are constructed in response to the attachment experiences that children encounter. These internal working models can be thought of as a *psychological organisation* that serves to guide children's beliefs with respect to important issues such as (a) the availability of key attachment figures as a source of comfort and security, (b) judgements about their own self-worth and deservedness in attachment relations, and (c) how best to deal with distress within the constraints of the attachment environment in which they find themselves (Cook, 2000; Duchesne & Larose, 2007; Sroufe & Waters, 1977). When youngsters develop a *secure* working model they adopt a positive internal representation of themselves in attachment contexts, viewing attachment figures as psychologically available and responsive and developing a positive sense of their self-worth in attachment contexts. However, when they develop an *insecure* working model they adopt a negative internal representation, fearing rejection and inconsistent responses from attachment figures and adopting a negative sense of self in attachment contexts (Duchesne & Larose, 2007; Kobak & Hazan, 1991). Florian, Mikulincer, and Bucholtz (1995) have suggested that insecurely attached children, who grow up with a lack of belief in the availability of attachment figures (Ainsworth et al., 1978), are likely to develop "a generalized belief in a non-supportive world" (p. 666).

Attachment security has been conceptualised and assessed both categorically and continuously in the literature. Most famously, Ainsworth et al. (1978) forwarded a number of distinct categories of attachment that are differentially related to attachment history of infants and caregivers; the most

illustrious perhaps being secure, ambivalent, and avoidant styles of attachment. However, other researchers (e.g., Collins & Read, 1990; West, Rose, Spreng, Sheldon-Keller & Adam, 1998) have adopted a continuous approach to attachment security and have paid attention to the *degree* to which individuals might be considered securely or insecurely attached, providing a continuous assessment (i.e., more/less security) of various conceptual indicators of attachment security.

Recognising the psychological importance of children's relationships with initial caregivers (typically parents), Bowlby (1973, 1980) hypothesized that the internal working models of attachment children construct as a consequence of initial attachment relationships will serve to marshal future patterns of cognition, affect, and behaviour. Bodies of attachment literature (e.g., George, Kaplan, & Main, 1985, 1996; Main, Kaplan, and Cassidy, 1985; Main & Goldwyn, 1998) therefore afford particular importance to childhood relationships with *parents* in regulating later states of mind in relation to attachment and relationship formation. This is a conceptual reflection of the evolutionary importance of the parent-child relationship (Bowlby, 1969/1982). Building upon this argument, Carr (2009b) hypothesised that adolescents' attachment relationships with key caregivers are likely to reflect the nature of internal working models that may function as a psychological template during the construction of new close relationships in sport. Specifically, he reasoned (a) that adolescents whose early experiences enable them to develop a secure attachment model are more likely to develop internal working models of themselves and others that facilitate positive relationships with friends, (b) that adolescents often develop a style of interaction with others that closely reflects the attachment relationship that they experience with caregivers (e.g., an individual whose mother is rejecting and withholds support and affection may come to respond in a similar manner towards their friends) (Weimer et al., 2004; Youngblade & Belsky, 1992), and (c) that adolescents can internalize complex patterns of emotional regulation developed in early attachment relationships and subsequently reproduce these strategies in their relationships with their friends (e.g., Contreras & Kerns, 2000; Contreras, Kerns, Weimer, Gentzler, & Tomich, 2000). For example, insecure children may develop a self-protective

distancing strategy with caregivers in order to avoid dealing with rejection and unavailability that they perceive as a likely occurrence. Subsequently, such children seek less intimacy, proximity, and social support from friendships in line with the framework of emotional responses to attachment relationships that they have developed (Weimer et al., 2004). In support of these predictions, Carr's (2009b) investigation identified that adolescents' self-reported levels of attachment security in relation to a nominated key caregiver significantly predicted their reports of sporting friendship quality with a nominated best friend. Features of attachment security with a key caregiver were positively related to a number of the features of positive sport friendship quality forwarded by Weiss and Smith (1999).

An Actor-Partner Interdependence Model (APIM) perspective

Carr's (2009b) investigation was an important first step towards understanding the manner in which adolescents' internal working models of attachment relate to their friendship quality in the context of youth sport. However, it should be noted that his investigation was limited to exploring the hypothesis from an *intrapersonal* perspective (i.e., the influence of an adolescent's relationship security with a key caregiver on his or her *own* perception of relationship quality with a best friend). Recent research in the broader sphere of peer relationships has recognised that perceptions of dyadic peer relationships in adolescence are constructed as a consequence of both *intrapersonal* and *interpersonal* processes and should be considered as a multilevel phenomenon (e.g., Cillessen, Lu Jiang, West, & Laszkowski, 2005). In the broader literature on attachment, researchers have provided evidence that models of attachment of *both* the self *and* one's partner are likely to predict the *self's* perception of the relationship and behaviour within it (Campbell, Simpson, Kashy, & Rholes, 2001). In the context of sport friendships this would suggest that adolescents' perceptions of friendship quality may depend not only on their own attachment characteristics but also on the attachment characteristics of their friend.

However, there is also a methodological impetus to such a multilevel investigation (Liu, 2009). Previous studies of dyadic relations have often attempted to analyse individual responses from each dyad member, assuming independent observations (e.g., 50 dyads might be analysed as 100 individual

cases, predicting each *individual's* outcome variable from both her own predictor variable and that of her partner). However, Kashy and Kenny (2000) have outlined that ignoring the non-independent nature of dyadic data in this way poses significant threats to the accuracy of analyses (see Kenny, Kashy, & Cook, 2006). Kenny and his colleagues have developed the “Actor-Partner Interdependence Model” (APIM, Cook & Kenny, 2005; Kashy & Kenny, 2000; Kenny & Cook, 1999) as a promising method of tackling the issue of interdependence in dyadic research. The APIM enables researchers to distinguish between *partner effects* (i.e., the extent to which specified characteristics of the *self* are a function of specified characteristics of *one's partner* in a given dyad) and *actor effects* (i.e., the extent to which specified characteristics of the *self* are a function of specified characteristics of the *self*). In the youth sport friendship literature it will be important to explore the extent to which individuals' perceptions of friendship quality (which have been shown to be important predictors of a variety of critical outcomes) are constructed not only from variables that reside from within the self but also from those that reside from one's partner.

The current study

This study had two major objectives. Firstly, we sought to further corroborate Carr's (2009b) preliminary data linking adolescents' attachment security with key caregivers to their perceptions of friendship quality within a dyadic sporting friendship. Whilst such analyses reflect an exclusively intrapersonal approach to the dyadic experience we felt that it was still important to further verify (with a larger sample) the specific relationships that exist between dimensions of caregiver attachment and self-reported sport friendship. Secondly, we used the multilevel modelling (MLM) procedures illuminated by Kenny et al. (2006) in order to assess the effects of both actor *and* partner attachment characteristics on perceptions of dyadic sport friendship quality. Previous findings (e.g., Carr, 2009b) suggest that higher levels of *actor* attachment security would predict *actor* perceptions of positive friendship quality. However, it was also hypothesised that the attachment security of one's best friend (i.e., *partner*) would influence one's own (i.e., *actor's*) perception of the friendship. In addressing each

of the above objectives we felt that it was important to adopt a multidimensional approach to our exploration of sport friendships. Previous investigations (e.g., Cox & Ullrich-French, 2010; Ommundsen et al., 2006) have tended to collapse perceptions of friendship quality dimensions into a single “positive friendship quality” scale. However, we felt that it was important to utilise the multidimensional structure of friendship quality assessment in our analyses. This is because the “overlap” between internal models of attachment (of either self or partner) in relationships such as friendship dyads is likely to be partial (Allen & Land, 1999; Belsky & Cassidy, 1995). That is, it has been predicted (e.g., Allen & Land, 1999; Belsky & Cassidy, 1995) that while *certain* features of friendships (e.g., features of intimacy such as self-disclosure and mutual awareness of others’ needs) are highly likely to be underpinned by attachment characteristics, others are less likely to overlap (e.g., stability) due to variations in the nature and function of the different relationships. By maintaining a multidimensional approach to our analyses of friendship quality we stood a better chance of uncovering the specific aspects of sporting friendship quality that most significantly overlapped with attachment characteristics.

Method

Participants

A sample of 193 adolescent boys from sports teams (cricket, rugby or soccer) in southern regions of the UK completed self-report measures. The sample had an average age of 14 years and 1 month ($SD = 1.29$ years, range = 12-16 years) and comprised over 95% Caucasians. In order to ensure a degree of familiarity with other team members it was ensured that all participants had been involved with their respective team for at least a year.

Procedures

Surveys were administered during typical team training sessions in the presence of an investigator. Participants were instructed to complete the surveys without conferring with peers, to be as honest as they could, and were encouraged to ask any questions concerning items that confused them or that they did not understand. Surveys typically took around 15 minutes to complete and consent was

obtained from the boys, their parents, and their coaches prior to participation. Ethical approval was obtained from the lead author's institutional ethics committee.

Measures

Adolescent Attachment Questionnaire. Following previous investigations of adolescent attachment in sport (e.g., Carr, 2009b), the *Adolescent Attachment Questionnaire* (AAQ; West et al., 1998) was employed in this investigation. The AAQ provides a *continuous* measurement of attachment² and researchers (e.g., Bartholomew & Shaver, 1998; Shaver, Belsky, & Brennan, 2000) in the field of adult attachment have concluded “that attachment measures are more precise when analyzed in terms of dimensions rather than types” (Shaver et al., 2000, p. 25).

The AAQ assesses adolescents’ perceptions of relationship security with a nominated adult attachment figure (“the person who mostly took care of you”)³ on three continuous dimensions developed around Bowlby’s ideas of the key characteristics of children’s attachment relationships with key caregivers. The first subscale, *availability*, consists of three items (e.g., “I’m confident that my Mum/Dad will listen to me”) and is based upon Bowlby’s (1973) contention that a secure attachment relationship involves an attachment figure that is perceived to be available and responsive to adolescents’ attachment-related distress and anxiety. This subscale therefore taps into perceptions of the attachment figure as reliably responsive and available to the adolescent’s attachment needs. The second subscale, *angry distress*, consists of three items (e.g., “I get annoyed at my Mum/Dad because it seems I have to demand his/her care and support”) and is conceptually linked to Bowlby’s (1973) contention that in less secure attachment bonds anger is likely to be directed towards attachment figures when attachment-related needs and desires are frustrated. The subscale therefore assesses negative angry

² It is beyond the scope of this paper to discuss the measurement of attachment at length. Readers are referred to more thorough discussion of attachment measurement in the sporting (e.g., Carr, 2009a, 2009b) and general (e.g., Bartholomew & Shaver, 1998; Shaver, Belsky, & Brennan, 2000) attachment literature.

³ It should be noted that 80% of the sample (n = 154) identified their mother as the key caregiver, 19% (n = 36) identified their father, and 1% (n = 2) identified their grandmother. There was no significant difference in attachment security as a function of the attachment figure identified (only mothers and fathers were compared).

responses to perceived unavailability of the attachment figure. The final subscale, *goal-corrected partnership*, also consists of three items (e.g., “I feel for my Mum/Dad when he/she is upset”) and reflects Bowlby’s (1969/1982) suggestion that secure attachment bonds are characterized by an increasing sense of empathy towards the attachment figure and that he or she is respected as a separate individual with needs and feelings. Adolescents respond to these nine items on a continuous five-point Likert-type scale ranging from 1 (*Strongly Disagree*) to five (*Strongly Agree*). Items for each subscale are averaged (*angry distress* items are reversed for the purpose of creating an overall score) so that higher scores reflect adolescent perceptions of a conceptually more secure relationship with the attachment figure.⁴ All nine items can then be averaged to obtain an overall rating of attachment that varies according to the degree of relationship security. West et al. (1998) have provided evidence in favour of the validity of the AAQ in relation to categorical assessment of attachment using the Adult Attachment Interview (AAI, George et al., 1984-1996; Main & Kaplan, 1985). Specifically, adolescents classified as securely attached according to the AAI endorse higher levels of *available responsiveness* and *goal corrected partnership* subscales on the AAQ. Adolescents classified as insecurely attached on the AAI report lower levels of *goal corrected partnership* with their attachment figure on the AAQ. Furthermore, insecure classifications on the AAI also relate to *angry distress* on the AAQ.

Sport Friendship Quality. The Sport Friendship Quality Scale (SFQS; Weiss & Smith, 1999) was used to assess adolescents’ perceptions of friendship quality with a nominated best friend on their sports team. Specifically, the SFQS measures sport friendship quality on 22 items that assess five positive relationship dimensions (i.e., *companionship and pleasant play*, *self-esteem enhancement and support*, *loyalty and intimacy*, *things in common*, and *conflict resolution*) and the negative dimension of *conflict experiences* in the relationship. Example items are: “I like to play with my friend” (*companionship and pleasant play*), “After I make mistakes, my friend encourages me” (*self-esteem enhancement and support*), “My friend looks out for me” (*loyalty and intimacy*), “My friend and I have

⁴ It should therefore be noted that higher scores on the angry distress subscale actually reflect *lower* levels of reported angry distress.

the same values” (*things in common*), “My friend and I make up easily when we have a fight” (*conflict resolution*), and “My friend and I have arguments” (*conflict experiences*). Participants were asked to write the name of their best friend in the team at the top of the questionnaire to remind them to focus on only that particular friend when responding to the questions. They responded to the 22 items on a five-point Likert-type scale ranging from 1 (*not at all true*) to five (*really true*). Items for each subscale are averaged so that higher scores reflect adolescent perceptions of a higher level of the construct. Responses to items from the five positive dimensions can also be averaged to produce an overall *positive friendship quality* score (Ullrich-French & Smith, 2006). Weiss and Smith (1999, 2002) have provided support in favour of the reliability and validity of the SFQS with youth samples ranging from 8–18 years of age.

Data analysis. Descriptive statistics and bivariate correlations were examined to gain an overview of sample characteristics and variable relationships. Following this, multiple regression analyses were conducted to examine the first hypothesis and explore the main effects of attachment characteristics on dimensions of friendship quality.⁵

To examine the second hypothesis, we were only able to select adolescents who were part of a mutually exclusive best friend sporting dyad for further analysis (i.e., only dyads where both partners had nominated each other as best friends were included). This resulted in a sample of 40 dyads (80 adolescents). The average age of these 80 participants was 14 years and 2 months ($SD = 1.18$) and there were over 95% Caucasians. These 80 participants who were part of mutual friendships did not differ significantly from other participants in terms of the quality of friendship scores they reported. We used MLM to explore actor and partner effects in our data. Kenny et al. (2006) have recommended MLM as an effective method for estimating APIM when dyad members are indistinguishable (e.g., two male best friends as opposed to a husband and wife pairing). In MLM there are two levels of analysis: *person*

⁵ This part of our analysis was conducted primarily to further verify existing data (i.e., Carr, 2009b) exploring these predictive relationships using a larger sample. We therefore conducted this analysis using a multidimensional approach to attachment and sport friendship to accurately replicate Carr’s approach.

(level 1) and *group* (level 2). In the context of the APIM, MLM regards data from dyad members as individual scores that are nested within a group ($n = 2$). A total of 7 MLM analyses were conducted with overall positive friendship quality, companionship and pleasant play, self-esteem enhancement and support, loyalty and intimacy, things in common, conflict resolution, and conflict experiences as DVs and both actor and partner overall attachment security scores as the IVs.

Results

Descriptive statistics, internal consistency of scales, and bivariate correlations.

Descriptive statistics for the whole sample are displayed in Table 1. The internal consistency of all scales was examined using Cronbach's (1951) alpha coefficient, these figures are also displayed in Table 1. The internal consistency values of the *angry distress* and *goal-corrected partnership* subscales of the AAQ and the *self-esteem enhancement and support* and *conflict resolution* subscales of the SFQS were marginally less than generally acceptable values (i.e., >0.7 , Nunally, 1978). However, given that the difference was marginal and that deletion of specific items did not significantly improve the consistency of these scales, the decision was made to retain them in further analysis. These internal consistency values are generally in line with what previous research has identified with the exception of the goal corrected partnership scale of the AAQ and the self-esteem enhancement and support scale of the SFQS, which have shown high internal consistency in samples of similar age to those in this investigation. It is possible that these discrepancies might be accounted for by the fact that our sample did not contain female participants. Correlations are displayed in Table 2 and revealed a number of positive relationships between dimensions of the AAQ and the friendship quality variables. Generally, the sample displayed reasonably high absolute levels of attachment security and of positive friendship quality and correlations indicated that attachment characteristics were related to all dimensions of friendship quality.

Multiple regression analyses

A series of multiple regression analyses (see Table 3) were conducted to examine whether the adolescent-parent attachment characteristics were significant predictors of the sport friendship variables. The three attachment subscales were entered into each regression model simultaneously as it was felt that insufficient empirical or conceptual evidence currently exists to confidently support the proposition that a given subscale was more or less likely to influence the outcome variables. Accordingly, multicollinearity indices for the AAQ predictors were examined for each regression model. Given that the bivariate association between the AAQ subscales was only weak to moderate and that SPSS reported consistently low Variance Inflation Factors (in the range of 1 to 2) for all regression models, a high chance of multicollinearity was deemed unlikely (Pedhazur, 1997). As reflected in Table 3, all regression models were significant. The *goal-corrected partnership* dimension of the AAQ was the only significant predictor of all positive dimensions of sport friendship and total friendship quality. The *angry distress* dimension was the only significant predictor of experiences of conflict.

Multilevel Modeling

Kashy and Kenny (2000) have suggested that the degree of non-independence that is present in dyadic data can be assessed by examining intraclass correlations between dyad members' scores. Examination of intraclass correlations between best friend dyad members' (40 dyads, 80 individuals) scores for all IVs and DVs revealed potential correlations for *loyalty and intimacy* ($r = .34, p = .03$), *conflict resolution* ($r = .28, p = .07$), *experiences of conflict* ($r = .37, p = .02$), and *total positive friendship quality* ($r = .32, p = .04$)⁶. The presence of such correlations suggests non-independence between dyad members' scores and warrants non-independent assumptions for analyzing dyadic data (Kashy and Kenny, 2000). Consequently, we conducted a series of MLM analyses for the 40 best friend dyads using both actor and partner total attachment security scores as IVs and each of the friendship

⁶ It should be noted that the remaining dependent variables demonstrated correlations with significance levels at between .10 and .17. Whilst this does not explicitly indicate non-independence, Kenny (2009) has suggested that it nonetheless remains a likelihood. Therefore it is recommended that data be conservatively treated as non-independent in such cases.

quality variables as DVs for each analysis. These analyses were conducted using an SPSS MACRO file specifically developed by Kenny (2009) for the analysis of dyadic data using the APIM and MLM. Table 4 displays the actor and partner effects of attachment security on the friendship quality variables. In Table 4, b represents the unstandardized parameter estimate of an IV when the other IVs in the model are controlled, and η^2 indicates the effect size of the IV computed from the t value and degrees of freedom of the parameter estimate (Rosenthal, 1991). Specific positive effects of *actor* attachment security were identified for *companionship and pleasant play, self-esteem enhancement and support, conflict resolution, and total friendship quality*. Positive effects of *partner* attachment security were identified for *things in common, and total friendship quality*. Kenny's (2009) SPSS MACRO files also enable the examination of how actor and partner characteristics interact to predict perceptions of friendship quality. However, our analyses did not identify significant interaction effects for any of the dependent variables. We briefly discuss this issue in the following section.

Discussion

This study sought to further develop understanding of adolescent friendships in the context of sport by exploring the link between attachment bonds with key caregivers and perceptions of dyadic sport friendship quality. Whilst there is a burgeoning body of evidence arguing for the importance of perceived friendship quality in sport (e.g., Smith, 2003; Ullrich-French & Smith, 2006, 2009), little is known about the important variables that may predict friendship quality in this age group or about how construction of such perceptions may be a complex function of specific characteristics of both members of a given dyad. Our specific purposes were (a) to further corroborate previous studies that have examined the link between dimensions of adolescent attachment characteristics and sport friendship (e.g., Carr, 2009b), and (b) to recognize the argument from both mainstream (e.g., Collins, 2002) and sporting (e.g., Jowett & Meek, 2000; Jowett & Wylleman, 2006) literature that the *dyad* is an essential unit of analysis in social relationship research by employing an APIM (e.g., Kashy & Kenny, 2000) approach to examine both *actor* and *partner* attachment effects on perceived friendship quality.

Our initial multiple regression analyses provided strong support for Carr's (2009b) preliminary findings suggesting that on an *intrapersonal* level adolescents' attachment bonds with their key caregivers are likely to be associated with their perceptions of friendship quality. In support of Carr's (2009b) findings, our data also suggested that the goal-corrected partnership dimension of adolescents' reported caregiver attachment was the only significant predictor of all positive dimensions of friendship quality. The fact that this finding has been repeated with an independent and larger sample provides further credence to the suggestion that reported levels of goal-corrected partnership with key caregivers may be symptomatic of an important feature of internal working models which plays a role in how adolescents experience sporting friendships. Bowlby (1969/1982) outlined that goal-corrected partnership is a central feature of secure working models of attachment and it reflects the fact that adolescents are able to think of their caregiver as a separate human being with needs, feelings, and goals to which the adolescent is able to respond with empathy and understanding (this is in some ways a reciprocation of the type of care that adolescents have themselves been exposed to from caregivers in a typical secure attachment bond). In insecure attachment bonds the development of this feature is less likely because (a) children have themselves been less frequently exposed to this type of caregiver *model* in response to their own needs and desires, and (b) residual anger and frustration at a lack of caregiver availability and responsiveness to one's own needs make it less likely that one will be sympathetic to the needs of the caregiver (Bowlby, 1969/1982). Our results indicate that this specific feature of adolescent-parent attachment may be a critical indicator of important features of internal working models that significantly enhance or impede adolescents' close friendship quality in sport.

It is also interesting to speculate as to why other features of parental attachment bonds such as *angry distress* and *available responsiveness* were not found to significantly predict dimensions of sport friendship quality in this study. As we discussed in our introductory section, researchers (e.g., Allen & Land, 1999; Belsky & Cassidy, 1995) have suggested that the intense, intimate nature of the family experiences conceptualized to underpin the formation of attachment styles are unlikely to overlap

completely with the relationships young people develop with peers. Carr (2009b) suggested that “while parent-child attachment characteristics may “guide” *certain aspects* [italics added] of peer relations there may well be aspects of relationships with peers that are less likely to be underpinned by the “cognitive maps” that attachment relationships with parents provide” (p. 659). Dimensions such as *angry distress* and *available responsiveness* may be less central to any overlap between parental attachment bonds and peer relationships in sport than *goal corrected partnership*. Future research would be advised to investigate this issue further by exploring whether these dimensions of parental attachment relationships are more predictive of peer relationship quality (a) in friendships outside of the sporting context, (b) in the friendships of more mature adolescent or adult samples, or (c) in adolescent female friendships. Furthermore, Newcomb and Bagwell (1995) have suggested that friendships are often “horizontal” in nature, involving mutual affection and a more evenly balanced sharing of power dynamics. Given that parental attachment bonds can be considered as more “vertical” in nature it may be important to explore whether other sporting relationships that more obviously share this vertical characteristic (such as the coach-athlete bond) are more likely to be influenced by these additional dimensions of the AAQ. It may be that when individuals occupy roles in more horizontal relationships (such as friendships) they are less likely to call upon features of an attachment model that has been constructed out of their participation in a more vertical relationship with a parent or caregiver.

Examining perceived sport friendship quality within the context of the APIM makes for an interesting and new contribution to the study of sport friendships. Such analyses enabled us to examine how adolescents’ perceptions of the quality of their sport friendship were a function of their *own* and their *friend’s* attachment characteristics. Actor effects were identified for *companionship and pleasant play, self-esteem enhancement and support, conflict resolution, and total positive friendship quality*, suggesting that when adolescents themselves report more secure relationships with caregivers then they are more likely to perceive friendships in sport as positive on a number of levels. This is in line with the earlier findings from our multiple regression analyses. From a multidimensional perspective these

findings implicate *actors'* attachment characteristics as particularly important in the prediction of *certain* dimensions of friendship quality and it is interesting to briefly speculate on such issues. For example, perceptions of *self-esteem enhancement and support* (e.g., “My friend has confidence in me when we play cricket”; “My friend gives me a second chance to perform skills”) were more closely linked to actor attachment characteristics. Initially, it seems logical to expect responses to these *self-esteem enhancement and support* statements to depend quite heavily upon the *partner* in a given dyad (i.e., the statements seem to require a judgment about what the partner *does* or *believes* in the context of the relationship). However, the attachment literature (e.g., Cook, 2000; Duchesne & Larose, 2007; Sroufe & Waters, 1977) has suggested that one of the central features of working models of attachment is the development of strong subconscious beliefs in relation to (a) the perceived worthiness of the self in the eyes of others, and (b) the support likely to be received from others. If this assumption is accurate, it may be that young athletes have constructed strong internal expectations (based upon earlier attachment experiences) in relation to the support and self-esteem enhancement that they believe relationship partners are *likely* to express towards them. This internal expectation may be powerful enough to influence their perceptions of this dimension of friendship quality more strongly than any characteristics the partner possesses. Alternatively, it may be that other partner characteristics (unrelated to parental attachment) not measured in this study, have more influence in relation to such aspects of sport friendship quality.

The fact that the *things in common* dimension of perceived friendship quality was significantly predicted by *partner* attachment characteristics but *not* by actor attachment is interesting and suggests that *certain aspects* of perceived friendship quality may be particularly susceptible to partner influence. Closer examination of the items that constitute this subscale of the SFQS reveals that it taps into perceptions that one shares “common interests,” has “similar values,” and “thinks the same way” as one’s friendship partner. Our findings suggest that the construction of such perceptions in the context of a dyadic sporting friendship may be more heavily dependent upon the *partner’s* attachment

characteristics than the actor's. This is logical because for adolescents to develop the perception that a friend *shares* their interests, values, and ways of thinking it may be necessary for *their friend* to possess certain cognitive and emotional characteristics. The attachment literature has suggested that key features of constructs such as *empathy* involve factors such as *perspective-taking* (i.e., a cognitive ability related to taking other people's point of view) and *empathic concern* (i.e., the tendency to feel sympathy or concern for other people). There has been evidence in support of the claim that insecure attachment bonds and poor care experiences with parents are linked with hindered perspective-taking and empathic concern (e.g., Britton & Fuendeling, 2005; Reti et al., 2002). It may be that the partner effect in relation to *things in common* in our study can be explained by the fact that decreased attachment security in relation to parental relationships reflects less-developed cognitive and emotional capacities in relation to such empathic features and this seems to be *felt* by relationship partners in sport friendships, hindering their construction of a perception that common values, interests, and ways of being are shared. Observational data in relation to sport friendship dyad interactions over time may help to corroborate such claims and to isolate specific instances of empathic behavior of dyad members in a given friendship.

In summary, our data provide an interesting insight into the important role that adolescents' attachment bonds with key caregivers are likely to play in the development of their sporting friendships. Firstly, we have provided support for the assumption (Bowlby, 1969/1982) that parental attachment bonds are likely to reflect important features of individuals' internal working models of attachment that surface in other close relationships (some of which develop in the context of sport). Secondly, by adopting an APIM approach to our research we have also provided an initial glimpse at the complex role that attachment characteristics may play in the construction of social relationships. Specifically, the effects of adolescents' attachment styles are not limited to effects experienced solely within the adolescent themselves but appear to also be "transmitted to" and "received by" the relationship partners with whom they elect to form close friendships in the context of sport. Perceptions of sporting friendships are complex in the sense that they are ultimately *individual* perceptions. However, they are

individual perceptions of a relationship that takes place with another person. Our data support the idea that such perceptions should be thought of as a “co-coordinated and emergent musicality” (Pincus et al., 2007, p. 635) constructed partially as a consequence of ingrained, subconscious beliefs about relationships that individuals essentially “bring with them” and partly as a function of interactions with relationship partners (through which partner characteristics are inevitably “transmitted” and “received”).

Of course, there are issues in our study that require further development and discussion. For example, our sample consisted exclusively of male adolescents and it will be important for future studies to examine similar questions in samples of female dyadic friendships and also to examine the complexities that emerge when sporting friendships consist of mixed-sex pairings. It is also important that research seeks to explore whether the specific facets of the parental attachment relationship that did not appear to be predictive of friendship quality in our investigation (i.e., angry distress and available responsiveness) are more likely to feature in friendships that involve females, more mature individuals, or even non-sporting friendships. Additionally, it is important to speculate about how the *sporting context* itself may be related to our findings. From a conservative perspective, it might be suggested that partner characteristics did not actually feature heavily in the prediction of individual perceptions of sport friendship quality in our participants (with the exception of the *things in common* SFQS subscale). This could be viewed as supporting the contention that partners’ attachment characteristics were less influential than actors’ in the broader construction of friendship quality perceptions. However, it is also possible to suggest that certain features of the male team sport context explored in this study make it more difficult for partner effects to “shine through.” For example, youth sport research (e.g., Carr & Weigand, 2001) has identified that the contextual and wider social climate surrounding sport and PE for *male* adolescents is more heavily characterized by a performance-oriented emphasis. Perhaps issues such as the motivational environment in which the sporting friendships in our investigation were situated created a contextual barrier to the expression, manifestation or activation of deep rooted internal models of attachment, rendering them less likely to exert an influence on friendships. Ommundsen et al. (2005)

have identified that performance-oriented motivational climates seem to inhibit positive friendship quality and future studies might explore whether such a climate also dampens actor or partner attachment effects on sport friendship perceptions. It is possible that a competitive sporting environment, which encourages the perception that teammates are rivals, dampens the likelihood of intimacy and closeness in sporting relations and makes it less likely that internal models of attachment (typically related to experiences of more intimate parental bonds) will be called upon for guidance.

Our study did not provide evidence that attachment styles of actor and partner interacted to predict perceptions of friendship quality. However, both historical (e.g., Sullivan, 1953) and contemporary (e.g., Criss et al., 2002; Price, 1996) accounts of the socialization significance of peer relationships have suggested that such relationships might attenuate the negative effects of harsh, punitive, or unloving family environments. Ullrich-French and Smith (2009) have provided evidence that the quality of sporting experiences can be “propped up” by certain social relationships (e.g., parental relations) when there are deficiencies in others (e.g., peer relations). Future research would be wise to investigate further whether insecurely attached children in sport are more likely to experience positive outcomes in a friendship when their friend possesses attachment characteristics that help to buffer the negative effects of their own working model. Furthermore, it should be noted that a number of the subscales employed in this investigation did not achieve high levels of internal consistency and future research should pay careful attention to these issues when employing the measures we adopted. There is also the potential that self report measures of attachment do not adequately tap deeper, subconscious elements of attachment (see Carr, 2009a). There is therefore a need for future studies to move beyond self-reports of both attachment variables and friendship characteristics and to examine, for example, how observational and interview assessment of the constructs supports the data uncovered in this investigation.

Our attachment measure tapped adolescents’ attachment scores on a continuous level. Whilst this has advantages in relation to power of analyses, it may also be interesting to explore how actor and

partner effects differ when attachment is assessed categorically. It may be that there are specific effects associated with specific types of attachment insecurity that are not captured when attachment is conceptualized on an insecure-secure continuum. Finally, it is worth briefly considering some of the practical implications of the current study. From our perspective, it is particularly important for policy makers and governing bodies in youth sport to be aware of the predictive capacity that distal variables in relation to the parent-child relationship may have in regulating influential constructs such as perceptions of youth sport friendship quality. It may well be that by focusing intervention efforts on the general quality of parent-child attachment relations in wider society there would be knock-on effects for important sport relationship constructs. Our findings further confirm the notion that youth sport is inextricably linked to important variables that are rooted in a much broader social context.

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Table 1. Descriptive statistics and alpha values ($n = 193$)

Variable	<i>M</i>	<i>SD</i>	Alpha
Angry distress	4.13	.67	.65
Availability	4.09	.72	.75
Goal-corrected partnership	4.01	.65	.66
Total AAQ score	4.08	.54	.78
CPP	4.13	.59	.75
SEES	3.93	.59	.66
LI	3.88	.70	.72
TIC	3.88	.63	.74
CR	3.64	.76	.65
EC	2.40	1.10	.85
Total positive SFQS score	3.91	.51	.89

Note: All scores are measured on a 5-point scale where 1 reflects a *more negative* level of the variable and 5 *more positive* (except for EC where 5 is more negative). CPP = companionship and pleasant play, SEES = self-esteem enhancement and support, LI = loyalty and intimacy, TIC = things in common, CR = conflict resolution, EC = experiences of conflict.

Table 2. Correlations among all variables ($n = 193$).

	1	2	3	4	5	6	7	8	9	10	11
1) Angry Distress	-	.34	.28	.69	.08	.10	.06	.05	.13	-.16	.07
2) Availability		-	.65	.86	.20	.34	.20	.21	.33	-.06	.32
3) Goal-Corrected Partnership			-	.81	.36	.46	.38	.39	.45	-.01	.52
4) Total AAQ				-	.27	.38	.22	.27	.38	-.09	.39
5) CPP					-	.37	.67	.64	.50	.10	.81
6) SEES						-	.48	.37	.49	-.13	.69
7) LI							-	.63	.50	.08	.85
8) TIC								-	.47	.09	.80
9) CR									-	.00	.75
10) EC										-	.04
11) Total positive SFQS											-

Note: r values $\geq .15$ are significant at the .05 level and r values $\geq .19$ are significant at the .01 level. CPP = companionship and pleasant play, SEES = self-esteem enhancement and support, LI = loyalty and intimacy, TIC = things in common, CR = conflict resolution, EC = experiences of conflict.

Table 3. Multiple regression analyses displaying significant prediction of sport friendship variables from attachment characteristics ($n = 193$).

Dependent Variable	Model F	Model p	R^2	Significant Predictors	B	$SE B$	β	p
1 CPP	28.33	<.001	13%	Goal-Corrected Partnership	.33	.06	.36	.00
2 SEES	50.12	<.001	20%	Goal-Corrected Partnership	.42	.06	.46	.00
3 LI	20.42	<.001	17%	Goal-Corrected Partnership	.47	.07	.43	.00
4 TIC	33.43	<.001	14%	Goal-Corrected Partnership	.37	.06	.39	.00
5 CR	47.22	<.001	20%	Goal-Corrected Partnership	.52	.08	.45	.00
6 EC	4.67	<.03	2%	Angry Distress	-.23	.12	-.16	.03
7 TOT SFQS	69.25	<.001	26%	Goal-Corrected Partnership	.40	.05	.52	.00

Note: CPP = companionship and pleasant play, SEES = self-esteem enhancement and support, LI = loyalty and intimacy, TIC = things in common, CR = conflict resolution, EC = experiences of conflict, TOT SFQS = total positive friendship quality. For all models degrees of freedom = 192

Table 4. Parameter Estimates of Multilevel Modeling Analyses Examining the Actor and Partner Effects of Attachment Security on Friendship Quality Variables ($n = 80$)

	CPP			SEES			LI			TIC			CR			EC			TOT SFQS			
	<i>b</i>	<i>t</i>	η^2	<i>b</i>	<i>t</i>	η^2	<i>b</i>	<i>t</i>	η^2	<i>b</i>	<i>t</i>	η^2	<i>b</i>	<i>t</i>	η^2	<i>b</i>	<i>t</i>	η^2	<i>b</i>	<i>t</i>	η^2	
Fixed Components																						
Actor Total AAQ	.24*	2.21	.07	.35**	3.36	.15	.09	.69	.01	.12	1.01	.02	.33**	2.39	.09	-.25	-1.02	.02	.22*	2.37	.08	
Partner Total AAQ	.17	1.53	.02	.12	1.16	.02	.22	1.64	.04	.31**	2.59	.09	.11	.79	.01	-.07	-.27	.00	.19*	2.06	.06	

Note: CPP = companionship and pleasant play, SEES = self-esteem enhancement and support, LI = loyalty and intimacy, TIC = things in common, CR = conflict resolution, EC = experiences of conflict, TOT SFQS = total positive friendship quality, $p < .05 = *$, $p < .01 = **$, *b* = actor/partner effect coefficient, η^2 = effect size.