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Development and Properties of the Adolescent Friendship Attachment Scale

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Abstract

Two studies are reported presenting the development of the Adolescent Friendship Attachment Scale (AFAS), a 30 item self-report measure of adolescent close friendship conceptualized as an attachment relationship. Study One reports the results of exploratory and confirmatory factor analyses with a sample of 490 adolescents aged 13 to 19 years. A second-order factor model was supported with a single friendship attachment factor underlying three first order factors (Secure, Anxious/Ambivalent, Avoidant) similar to those reported in the broader attachment literature. The AFAS subscales were found to be appropriately reliable and demonstrated appropriate convergent and discriminant validity when compared to measures of attachment styles (the Relationship Questionnaire) and parental and peer group attachment (the Inventory of Parent and Peer Attachment). Study Two reports a successful replication of the factor structure with an independent sample of 787 adolescents. Further research evaluating the predictive utility of the AFAS is recommended.

Key words: adolescence; friendship; attachment; assessment; peers

Development and properties of the Adolescent Friendship Attachment Scale

In modern, western societies adolescence is seen as a period of physical, psychological, and social transformation. As individuals progress through childhood and puberty towards adulthood they are generally expected to become increasingly individuated and independent from the family. It is an expectation that friendships with peers will develop in childhood and that such relationships will become increasingly stable and central to the individual as they mature. While friends for preschoolers are primarily a source of positive play (Ladd, Kochendorfer, & Coeman, 1996), by the middle school years children report that their friends provide emotional support and intimacy (Berndt & Ladd, 1989). While childhood friendships are important for healthy development and adjustment, they do not usually have the same significance then that they can have in adolescence and adulthood (Erwin, 1998). By adolescence individuals spend more time with their friends than their parents, their friends become the prime source of intimacy and disclosure, and intimate friends become a major source of social and emotional support (Furman & Bierman, 1984; Hazan & Zeifman, 1994; Wilkinson, 2004). The formation of intimate adolescent friendships can be seen as part of the developmental extension of attachment networks that culminates in the transfer of attachment functions to peers and the development of secure base romantic relationships in adulthood (Hazan & Zeifman, 1994; Doherty & Feeney, 2004).

Beginning from infancy, individuals form a variety of relationships with a range of key figures in their social environment. From an attachment theory perspective, multiple attachment relationships are considered the norm and these relationships are thought to be arranged hierarchically according to how attachment needs are met, with a principle caregiver at the top of the hierarchy (Bowlby, 1988). As the individual develops and begins to explore the physical and social world more extensively in childhood, the possibility for the formation of peer relationships that fulfill aspects of attachment functions arises (Hazan &

Zeifman, 1994). The formation of these relationships are not only influenced by the attachment system, but also by affiliation and caregiving systems and, after puberty, by sexual gratification systems (Furman & Wehner, 1997).

There is general agreement that a close relationship with a 'best' friend in adolescence can take on characteristics of an attachment relationship (Furman, 1996; Miller & Hoicowitz, 2004). The vast majority of adolescents have at least one close friend that can be described as their best friend, although those nominated as close friends can change over brief periods (Brown, 2004). Typically these friendships will be with the same gender and girls will display more intimacy than boys (Brown & Klute, 2003). Most adolescents also belong to a more extended network of peer relationships known as 'cliques'. These cliques vary in size, ranging from three to ten with an average of five members (Ennett, Bauman, & Koch, 1994). Most members of a clique are similar in age and gender and, in settings with significant cultural diversity, similar in ethnicity (Brown, 2004). Both best friends and cliques influence adolescent behavior and the quality of both kinds of relationship impact on adolescent adjustment (Wilkinson & Kraljevic, 2004).

Brown and Klute (2003) point out that there is a failure in much of the research on adolescent relationships to distinguish between dyadic friendships and friendship cliques. This is an important issue because this also represents the distinction between 'best' friends and 'peers' at an empirical level and the distinction between attachment relationships and affiliative relationships at the theoretical level. While best friendships may be thought of as involving attachment processes, the formulation of peer relationships as attachment relationships may be misplaced as by definition attachment processes are said to be restricted to dyadic relationships (Bowlby, 1988; Ainsworth, 1989). This is not to say that peer relationships are not influential but rather that they are influential through affiliative group processes rather than through their ability to address attachment functions for the individual.

Over the past 20 years or so there have been a number of attempts to develop broadly

based measures of the quality of best friend relationships in adolescence. Generally the instruments produced can be said to have had a more empirical than theoretical genesis and the psychometric analysis of many has been less than ideal (see Furman, 1996 for a review). Most of these measures have included sub-scales that either explicitly or implicitly measure aspects of attachment related concepts although none has had attachment as its principle focus.

The most widely used instrument to specifically measure attachment related aspects of peer relationships in adolescence is the Inventory of Parental and Peer Attachment (IPPA) (Armsden & Greenberg, 1987). The Peer scale of the IPPA has twenty-five items assessing three sub-scales: Trust, Communication, and Alienation. Respondents are required to rate each item on a 5-point Likert scale ranging from “almost always or always true” to “almost never or never true”. Generally, the total Peer scale score is used rather than individual scale scores. The original twenty-five item version has been used in a number of studies examining peer relationships and psychological health (e.g., Armsden & Greenberg, 1987; Paterson Field, & Pryor, 1994; Wilkinson & Walford, 2001; Wilkinson, 2004). A twelve item version has also been employed in a range of studies (e.g., Meeus, Osterwegel, & Vollebergh, 2002; Raja, McGee & Stanton, 1992) as has a fifteen item version (Wilkinson & Kraljevic, 2004; Wilkinson & Parry, 2004). Both the full scale and truncated versions have good psychometric properties and have been shown to be independent predictors of adolescent adjustment outcomes. While the IPPA Peer scale has been interpreted to be a measure of friend attachment, there is uncertainty over the extent to which it measures 'best' friend attachment. Items in the scale refer to “friends” rather than “best friend” and it is possible that the IPPA Peer scale assesses the quality of clique affiliative relationships rather than dyadic attachment relationships.

A further difficulty with the IPPA is that it was developed prior to more recent research clarifying the major dimensions of attachment. Around the same time as Armsden and

Greenberg (1987) were developing and publishing the IPPA, Hazan and Shaver (1987) published their seminal work on romantic attachment relationships in young adults. They argued that attachment in adults could be conceptualized as having similar individual difference patterns to those identified in infants by Ainsworth and her colleagues (Ainsworth, Waters, & Wall, 1978). Bartholomew and Horowitz (1991) extended this work and, consistent with Bowlby's (1969/1997) original work, argued that attachment 'types' were generated from two underlying attachment dimensions: Model of Self and Model of Other. A considerable body of evidence has now emerged to support the contention that there are at least three (Secure, Anxious/Ambivalent, Avoidant) and possibly four (Secure, Preoccupied, Dismissing, Fearful) attachment styles with an underlying dimensional structure (Brennan, Clark, & Shaver, 1998; Crowell, Fraley, & Shaver, 1999).

The Present Study

The goal of the present study was to develop a brief self-report measure that specifically assesses the quality of the adolescent 'best' friend relationship as an attachment relationship. Previously developed measures have either been inadequately constructed with regard to attachment aspects of this relationship or have confused best friend relationships with clique peer relationships. A further aim of the study was to develop the item content of a new measure to reflect the current thinking with regard to the assessment of major styles and dimensions of attachment.

Two studies are reported. In Study One the initial development of the Adolescent Friendship Attachment Scale (AFAS) is described including exploratory factor analysis. A second-order confirmatory factor analysis is conducted that tests the fit of the new measure to a proposed hierarchical factor structure where there is an underlying friendship attachment dimension that generates three friendship attachment scales. Relationships between the AFAS and other measures of attachment styles and quality of attachment relationships are also reported. It is hypothesised that individual AFAS scores will be concordant with attachment

types and that these scores will be related but distinguishable from measures of parental and peer (clique) relationship quality. A second study is also presented in which a replication of the factor structure is reported.

STUDY ONE

Method

Participants

A cross-sectional sample of 490 student volunteers from junior and senior high schools in the Australian Capital Territory participated in the study. Ages ranged from 13 to 19 years with a mean of 16.15 years ($SD = 0.89$). The sample consisted of 367 females (74.9%) and 123 males (25.1%). The majority of participants were from English speaking backgrounds (92.1%) and, based on parental occupation, from middle to upper socio-economic status (75.7%).

Procedure

Written information and consent forms were sent to participants and their parents several weeks prior to conducting the study to inform them of its nature and purpose. During class time the participants individually completed a questionnaire booklet consisting of the self-report measures described below.

Measures

Adolescent Friendship Attachment Scale (AFAS). The initial item pool for the AFAS consisted of thirty-five items designed to address features of a 'best' friend relationship conceptualized as an attachment relationship. Items were developed by examining extant measures of attachment, focusing on the uniqueness and importance of the attachment figure, considering the essential functions of attachment, and by considering positive and negative aspects of the relationship. A group of ten high school students (6 girls and 4 boys) then critiqued the items prior to the study to ensure they were suitable for the target group. Minor changes in wording of items were made in response to their feedback. For the final thirty-five

items used in the study the instructions given to the respondents were, "Think of someone you feel closest to above all others. This person should be close to your own age. They might be your best friend or someone from one of your classes, sports teams, or even just someone you hang around with sometimes". Participants were then requested to indicate their level of agreement with each item using a scale from 1 (strongly disagree) to 5 (strongly agree).

Relationships Questionnaire (RQ). Attachment style was assessed using the Relationships Questionnaire (RQ) (Bartholomew & Horowitz, 1991). Participants are asked to read four descriptions of relationship attitude matching four-categories of attachment style: Secure, Fearful, Dismissing, and Preoccupied. They are then asked to nominate one style that is "most like them". Bartholomew and Horowitz report good convergence between this self-report measure and an interview based measure of attachment style and appropriate stability of the RQ over time.

Peer and Parent Attachment. The Inventory of Parent and Peer Attachment (IPPA) (Armsden & Greenberg, 1987) is designed to assess the quality of parental (28 items) and peer (25 items) attachment. Participants are asked to indicate the extent to which the items are true, ranging from 1 (almost always or always true) to 5 (almost never or never true). For the Parent scale items they are advised that if their relationship with each parent differs they should respond with reference to the parent that has "most influenced" them. For the Peer scale participants are instructed to respond with respect to their closest friendships. The Parent and Peer scales have demonstrated good internal consistency (coefficient $\alpha > .85$) in a number of studies (Armsden & Greenberg, 1987; Wilkinson, 2004) and test-retest correlations have been found to range from .86 to .93 over a three week period (Armsden, McCauley, Greenberg, Burke, & Mitchell, 1990).

Results and Preliminary Discussion

Principle Components Analysis

A Principal Components Analysis (PCA) with oblique rotation (oblimin) was performed

to investigate the underlying structure of the thirty-five AFAS items. Prior to the PCA the AFAS data were screened for accuracy of entry, outliers, normality, linearity, multicollinearity, singularity and factorability of the correlation matrices. Twelve cases with missing data were excluded from the analysis. Six cases were identified as multivariate outliers using a criterion of Mahalanobis distance with $p < .001$ and were deleted. The Kaiser-Meyer-Olkin measure of sampling adequacy was .920.

On the basis of the initial PCA two items were deleted due to low communalities ($< .30$). The remaining items were subjected to another PCA and on the basis of the eigenvalues, the scree plot, and interpretability, a three factor solution was generated (Table 1). The three factors accounted for 41.1% of the variance. The component correlation matrix indicated that Factor One and Two are correlated at $-.261$, Factor One and Three at $-.420$, and Factor Two and Three at $.105$. Items loading on the first factor are indicative of a secure attachment relationship characterized by themes such as proximity, distress on separation, and trust, while items loading on the second factor are related to an insecure anxious/ambivalent attachment characterized by anxiety and anger in the relationship. The third factor is related to loadings from items that indicate relationship avoidance characterized by themes of independence and self-reliance. Three items had relatively low loadings ($< .4$) with the factors and were excluded from further analysis.

Confirmatory Factor Analysis – Second-Order Model

Based on the expectation that sub-scales produced from the measure would be related and indicative of a higher order factor, a second-order confirmatory factor analysis (CFA) was conducted using the AMOS 5 implementation of structural equation modeling (SEM). In order to identify the proposed model the variances of the residuals for the first order factors were fixed to be equal. The fit indices for the initial model (Table 2) indicated that it was an acceptable fit to the data. The modification indices, however, suggested that allowing covariance between error terms for some of the indicators would substantially increase the

overall model fit. Following Byrne (2001), the indicated items were examined in order to determine likely sources of common method factors that could justify allowing correlated error terms. Items 7 and 22 both refer to 'liking' and on this basis a model (Modified 1) was evaluated with correlated error between these items. This solution indicated that error between items 5 and 18 should also be correlated. Both items refer to being 'angry' and on this basis a further model was evaluated (Modified 2) with these error terms allowed to covary.

The fit of the final modified model was a significant improvement over the initial model ($\Delta\chi^2 = 122.71, df = 2, p < .001$). Further changes to the model were considered unjustifiable.

Figure 1 presents the final model. Item loadings on the first order factors were all significant ($p < .05$) and consistent with the exploratory factor analysis with some minor variations. The three factors of Secure, Anxious/Ambivalent, and Avoidant friend attachment all loaded highly on the second-order Friend Attachment factor. As previously indicated some minor common method variance was evident with significantly correlated error terms for items 7 and 22 (-.391) and 5 and 18 (.336). Overall, it can be concluded that the results support the proposed second-order factor model.

Confirmatory Factor Analysis – Sex Differences

To test that the overall structure of the AFAS was similar for both sexes a multi-group analysis was conducted on the second-order CFA model. When the unrestricted model was compared to a model in which the regressions paths between the underlying attachment factor and the three AFAS constructs were set to be equal for both groups, there was no significant difference in the model fit ($\Delta\chi^2 = 9.92, df = 3, p > .05$). This indicates the model is similar for adolescent boys and girls.

Construction of Scales

On the basis of the second-order factor analysis, three sub-scales and a total scale were generated and reliability analyses conducted to examine the internal consistencies. Reverse

coding of items was applied where appropriate. Secure (13 items) generated a coefficient alpha of .854, Anxious/Ambivalent (11 items) produced a coefficient alpha of .781, and Avoidant (8 items) produced a coefficient alpha of .751. A total scale of overall attachment, Total Friendship Attachment (30 items), produced an alpha coefficient of .882. Scale scores were calculated as the mean of the component items. Means and standard deviations of the scales are presented in Table 3. A sub-sample of fifty-one participants was retested with the AFAS four weeks after the initial assessment. Test-retest correlations are presented in Table 3 and indicate an appropriate level of stability.

Construct Validity

Means and standard deviations for the four Adolescent Friendship Attachment scales by Attachment Style are presented in Table 4. To assess the pattern of means across classifications of attachment style, a multivariate analysis of variance with follow-up tests and *post-hoc* comparisons of means was conducted for the three sub-scales. A separate one-way ANOVA and *post-hoc* comparisons of means was also conducted on AFAS Total scale scores. The results reveal that scores on the AFAS are consistent with attachment style classifications on the Relationships Questionnaire.

The MANOVA yielded a significant overall main effect of attachment style on the AFAS sub-scales, Wilk's λ $F(9,1117) = 12.79, p < .001, \eta^2 = .076$. Follow-up analysis revealed main effects for all three measures: Secure $F(3,461) = 23.54, p < .001, \eta^2 = .133$; Anxious/Ambivalent $F(3,461) = 16.41, p < .001, \eta^2 = .097$; and Avoidant $F(3,461) = 16.88, p < .001, \eta^2 = .099$. Using the Scheffé procedure ($p < .05$) to control for type 1 error, *post-hoc* tests reveal that those with a Secure style report the highest level of secure friendship attachment, those with a Dismissing style report the highest level of avoidant friendship attachment, and those with either a Preoccupied or Fearful style report the highest level of anxious/ambivalent

friendship attachment. No other comparisons were significant. The ANOVA on the total friendship attachment score by attachment style revealed a significant main effect $F(3,461) = 24.83, p < .001, \eta^2 = .139$. Follow-up *post-hoc* tests revealed that those classified as Secure scored significantly higher on the total AFAS than those classified as Fearful, Preoccupied, or Dismissing. No other comparisons were significant.

In order to further establish the convergent and discriminant validity of the AFAS scales, correlations with measures of the quality of attachment in other relationships were investigated (Table 5). As expected, the AFAS displayed moderate to strong correlations with the IPPA Peer attachment measure. The highest relationship was with the overall AFAS score while the lowest was with the Avoidant scale. AFAS scales only displayed weak, though significant, relationships with the IPPA Parent measure and these were lower than the relationship between IPPA Peer and IPPA Parent. Overall, these correlations show that the AFAS scales are appropriately convergent with a measure of peer or clique attachment (IPPA Peer) and appropriately divergent with a measure of parental attachment (IPPA Parent).

Gender and age differences

Gender and age differences in scores on the AFAS were explored by conducting 2 X 2 ANOVAs with Age (13 to 15 years, 16 to 19 years) and Sex (Female, Male) as the independent variables and the AFAS scales as the dependent variables (Table 6). There were no significant interactions or Age effects. Girls reported higher scores on Secure, $F(1,486) = 27.84, p < .001, \eta^2 = .056$, and AFAS Total, $F(1,486) = 25.50, p < .001, \eta^2 = .052$, than boys but lower scores on Avoidant, $F(1,486) = 38.21, p < .001, \eta^2 = .075$. There were no significant sex differences for anxious friend attachment.

Summary

A 30-item measure of adolescent friendship attachment was produced that, as expected,

generated a hierarchical factor structure with an underlying global friendship attachment dimension related to the three friendship attachment aspects of security, anxiety/ambivalence, and avoidance. This structure was similar for adolescent boys and girls. The AFAS is internally consistent and stable over time and displayed appropriate convergent and discriminant validity with regards to attachment style classification and specific measures of parental and peer attachment. As predicted the AFAS, as a measure of best friend relationship quality, was moderately to highly related to a measure of clique relationship quality, the IPPA Peer scale. While the relationships between these measures were substantial they were not high enough to indicate redundancy in the measures and the IPPA Peer scale and AFAS appear to be measuring different, though related, constructs. The AFAS was relatively unrelated to the IPPA Parent scale, a measure of adolescent parental attachment quality.

STUDY TWO

Because the factor structure of the AFAS was both initially explored and evaluated using the same sample of high school students, it is important to validate the results with an independent sample. Factor structures generated within a particular sample need to be tested against an independent sample to establish confidence in their generalizability (Thompson, 1996) and replication is a key task of psychological research (Cohen, 1994). Thus, a second study was undertaken using an independently sampled group of adolescence in order to replicate the hierarchical second-order factor structure for the AFAS reported in Study One.

Method and Procedure

Participants

A sample of 787 student volunteers from junior and senior high schools in the Australian Capital Territory participated in the second study. Participants' ages ranged from 14 to 19 years with a mean of 16.64 years ($SD = 0.74$). This sample consisted of 551 females (70%) and 236 males (30%). The majority of participants were from English speaking backgrounds (91.3%) and, based on parental occupation, from middle to upper socio-economic status

(80.1%).

Procedure

The 30-item version of the AFAS developed in Study One was administered to participants in class-room settings as part of another study. Cronbach's alpha coefficients for the four AFAS measures calculated from the new sample are: AFAS Secure (13 items) $\alpha = .914$, AFAS Anxious/Ambivalent (11 items) $\alpha = .810$, AFAS Avoidant (8 items) $\alpha = .788$, AFAS Total (30 items) $\alpha = .916$.

Results and Preliminary Discussion

Structural equation modeling using the AMOS 5 program was employed to establish whether the factor structure for the 30-item AFAS developed in Study One was replicated in the data from Study Two. Fit indices indicated that the model is an adequate fit to the data ($\chi^2 = 1976.49$, $df = 400$, $p < .001$; AGFI = .813, CFI = .848, RMSEA = .071). Item loadings on the first order factors were consistent with the results from Study One with some minor variations. The three factors of Secure (-.886), Anxious/Ambivalent (.715), and Avoidant (.927) all loaded highly on the second-order Friend Attachment factor. As reported in Study One, some minor common method variance was evident with significantly correlated error terms for items 7 and 22 (-.339) and 5 and 18 (.310). Overall, it can be concluded that the results support the proposed second-order factor model and replicate the confirmatory factor analysis results from Study One.

General Discussion

The goals of the present study were to construct a relatively brief self-report measure of the quality of the 'best' friend relationship in adolescence that tapped fundamental aspects of attachment processes and was distinguishable from measures of other kinds of adolescent attachment relationship quality. On all counts the results indicate that these goals were achieved. The resulting scales were demonstrated to be reliable, consistent with existing models of attachment dimensions, and structurally similar for adolescent girls and boys.

Importantly, the measurement structure was replicated in an independent sample.

The Adolescent Friendship Scale produced three factors that reflected the three original attachment styles of Secure, Anxious/Ambivalent, and Avoidant. These three factors fitted a second-order factor model with a single underlying dimension. Other researchers have found that dimensional measures of attachment can produce from two to five factors (e.g., Carver, 1997; Collins & Read, 1990; Feeney, Noller, & Hanrahan, 1994). Interestingly, the two dimensions of Model of Self and Model of Other advocated by Bartholomew and Horowitz (1991) are compatible with the anxious/ambivalent and avoidant dimensions produced by the AFAS. These two dimensions have been argued by Brennan and her colleagues (Brennan, Clark & Shaver, 1998; Fraley, Niels, & Brennan, 2000) to be fundamental to individual differences in attachment.

Research supports the view that there is a positive relationship between attachment security and the quality of specific relationships in the social network (Hazan & Shaver, 1987; Simpson, 1990) and the results of the current study are concordant with those findings. The scales of the AFAS were consistent with both categorical and dimensional measures of general attachment style as measured by the Relationships Questionnaire, though these relationships were weak to moderate rather than strong. Some authors (e.g. Feeney & Hohaus, 2001) make the distinction between attachment security and strength of attachment and argue that relationship quality measures are indicators of the later rather than the former. However, it can be argued that the AFAS assesses both attachment security and relationship strength because it was designed to reflect fundamental attachment dimensions in terms of a specific relationship. If attachment theory is to be useful for understanding the patterns and importance of networks of relationships, then individual differences in working models, as reflected in attachment styles, must be reflected in our specific relationships.

Part of the rationale for the development of the AFAS was the argument that the most prominent measure of friendship attachment, the IPPA Peer scale, assesses the quality of

clique relationships rather than best friend attachment. As expected, the results indicated a strong relationship between these two measures but the level of that relationship indicates that these measures are not assessing exactly the same construct. Because best friends in adolescence are almost always part of a clique (Brown & Klute, 2003), the IPPA Peer will almost certainly assess a component of best friend attachment but this will be confounded by the broader group processes involved in clique relationships. Further research designed to specifically disentangle the functions of clique and best friend relationships in adolescence is required. Ideally this research would extend beyond the individual's perceptions of relationships and incorporate aspects of the Actor-Partner Interaction Model (APIM) (Cook & Kenny, 2005) so that actual dyadic perceptions can be evaluated. Such an approach would also enable more of a criterion-referenced approach to establishing the validity of the AFAS.

The extent to which best friend attachment, as assessed by the AFAS, relates to other aspects of the best friend relationship should also be established. As noted previously, there are a range of extant measures of adolescent best friend relationships that do not focus on attachment as the organising construct, although some include attachment as part of a more broadly based approach (e.g., Furman & Buhrmester, 1985; Furman and Wehner, 1994; Berndt, Hawkins & Jiao, 1999; Sharabany, 1994). An examination of measures such as the Friendship Qualities Scale (Bukowski, Boivin, and Hoza, 1994) reveal that many items could be viewed as assessing aspects of attachment functions such as proximity-seeking (Companionship), and safe-haven (Help). Future research evaluating the convergence and divergence of these measures will be important in establishing the extent to which attachment anxiety and avoidance are related to other key aspects of best friend relationships in adolescence.

The age range employed in the current studies covers from early to late adolescence. While there were no major differences in best friend attachment across these age groups it may be the case that differences emerge when comparing adolescents across a wider age

range. Further studies should examine the utility of the AFAS in assessing friend attachment in both younger, pre-pubescent adolescents and older adolescents on the cusp of adulthood. Hazan & Zeifman (1994) have demonstrated that attachment functions begin to transfer from parents towards peers at the end of childhood and in early adolescence. Towards the end of adolescence, and moving into young adulthood, the emergence of romantic relationships can effect the nature of intimate friendships and, although friendships can maintain elements of attachment functions across the lifespan, the importance of best friendships as sources of support declines (Doherty & Feeney, 2004). These changes may impact on the ability of the AFAS to assess appropriate attachment aspects of intimate personal friendships.

The AFAS is, of course, a self-report survey instrument and the well-known limitations of such methodologies apply. Even though the AFAS has been validated against other well known self-report measures with extensive literature supporting their own validity, it is still the case that there would be benefit from validating the AFAS with both interview and observational methods. Ideally future research should be longitudinal and take an approach that seeks to cross-validate the reports of dyads. While best friendships do not by definition have to be purely reciprocal, in that one of the parties may nominate a different best friend, there may be different impacts associated with attachment structures in reciprocal and partly reciprocated relationships.

The value of measures such as the AFAS can be more fully demonstrated by the extent to which they enable the testing of broader theory indicated relationships. Attachment processes are just one of a number of intrapsychic systems operating in the interpersonal context. The AFAS was designed to focus specifically on the attachment aspect of adolescent best friend relationships and the extent to which it relates to measures that assess a wider range of phenomena in these relationships should be investigated. Future research should also seek to examine the utility of the AFAS in assessing the impact of the pattern of adolescent relationships on psychological health and adjustment during this important period of

interpersonal transition. In adolescence, best friends may not be forever but they may still leave an indelible mark.

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Table 1

Principle Components Analysis Three Factor Solution Pattern Matrix for 33 AFAS Items

Items	Factor 1	Factor 2	Factor 3
I enjoy spending time with my friend.	.757		
I feel close to my friend.	.686		
I would find it distressing if this friendship ended.	.644		
I think it would be difficult to replace my friend.	.628		
I know that my friend is loyal.	.610		
I like the closeness I share with my friend.	.592		
Outings are more enjoyable when I'm with my friend.	.590		
I know my friend does like me.	.565		
I know I can rely on my friend.	.561		
I can trust my friend.	.541		
I am confident my friendship will last.	.480	-.361	
I can talk things through with my friend.	.476		
When I have had a bad day my friend cheers me up.	.419		
My friend makes me feel worse when I am upset.	-.348		
No one supports me like my friend does.	.342		
I am concerned that my friend will find another friend that he/she prefers.		.629	
I would like my friend to be more understanding.		.596	
I get angry at my friend when I can't get in contact with him/her.		.582	
I become angry with my friend when he/she does not understand me.		.572	

Table 1 cont.

Items	Factor 1	Factor 2	Factor 3
I don't feel as close to my friend as I would like.		.539	
I am not sure I can always depend on my friend.		.537	
I am often angry with my friend.		.522	
I worry my friend doesn't really like me.		.466	
I worry about becoming too close to my friend.		.459	
I don't turn to my friend for support when things are difficult.			.612
I don't need to rely on my friend.			.601
I seek out my friend when things go wrong.			-.522
I let my friend know about things that trouble me.			-.501
Without this friendship, it would be very hard to cope when things are difficult.			-.486
I avoid discussing personal things with my friend.			.482
I don't like depending on my friend.			.469
It bothers me when my friend is not available when I'm stressed.		.399	-.445
My friend understands me.		-.355	-.361

Note. Loadings < .300 are not shown

Table 2

Fit Indices for the Second-Order Confirmatory Factor Analysis

Model	χ^2	<i>df</i>	<i>p</i>	AGFI	CFI	RMSEA
Null	4578.23	435	>.000	.311	.000	.142
Initial	1221.36	402	>.000	.822	.802	.066
Modified 1	1152.58	401	>.000	.831	.819	.063
Modified 2	1098.65	400	>.000	.840	.831	.061

Table 3

AFAS Inter-Correlations, Test-Retest Correlations, Means, and Standard Deviations

Scale	Secure	Anxious/ Ambivalent	Avoidant	Total
Secure	.791			
Anxious/Ambivalent	-.493	.723		
Avoidant	-.557	.138	.707	
Total	.876	-.703	-.743	.810
Mean	4.471	2.312	2.425	4.02
Standard Deviation	0.461	0.691	0.676	0.460

Note: Diagonals are one-month test-retest correlations based on a sub-sample of 51 participants. For other statistics $n = 472$.

Table 4

Means and Standard Deviations by Relationship Questionnaire Attachment Style Classification

AFAS Scale	Secure	Fearful	Preoccupied	Dismissing
Secure	4.67(0.334)	4.36(0.43)	4.40(0.50)	4.27(0.54)
Anxious/Ambivalent	2.12(0.55)	2.52(0.62)	2.55(0.68)	2.20(0.53)
Avoidant	2.21(0.56)	2.51(0.73)	2.44(0.67)	2.80(0.67)
Total	4.23(0.36)	3.88(0.47)	3.91(0.49)	3.86(0.44)

Table 5

Correlations of the AFAS with the IPPA

IPPA	AFAS Total	AFAS Secure	AFAS Anxious	AFAS Avoidant
IPPA Peer	.667**	.589**	-.503**	-.461**
IPPA Parent	.239**	.190**	-.274**	-.104*

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

Table 6

AFAS Means by Sex and Age

AFAS	Females		Male	
	13 to 15 Years	16 to 19 years	13 to 15 Years	16 to 19 years
Secure	4.56	4.51	4.25	4.29
Anxious	2.31	2.30	2.24	2.37
Avoidant	2.31	2.33	2.74	2.79
Total	4.10	4.07	3.85	3.82

Appendix

The 30 Item Adolescent Friendship Attachment Scale

AFAS Items
1. When I have had a bad day my friend cheers me up. (S)
2. I think it would be difficult to replace my friend. (S)
3. It bothers me when my friend is not available when I'm stressed. (Av r)
4. I can trust my friend. (S)
5. I become angry with my friend when he/she does not understand me. (An)
6. I don't like depending on my friend. (Av)
7. I worry my friend doesn't really like me. (An)
8. I would find it distressing if this friendship ended. (S)
9. I know that my friend is loyal. (S)
10. I like the closeness I share with my friend. (S)
11. I am not sure I can always depend on my friend. (An)
12. I would like my friend to be more understanding. (An)
13. I let my friend know about things that trouble me. (Av r)
14. I avoid discussing personal things with my friend. (Av)
15. I can talk things through with my friend. (S)
16. I worry about becoming too close to my friend. (An)
17. I don't turn to my friend for support when things are difficult. (Av)
18. I get angry at my friend when I can't get in contact with him/her. (An)
19. I don't feel as close to my friend as I would like. (An)
20. I seek out my friend when things go wrong. (Av r)
21. I enjoy spending time with my friend. (S)
22. I know my friend does like me. (S)
23. I feel close to my friend. (S)
24. I don't need to rely on my friend. (Av)
25. Without this friendship, it would be very hard to cope when things are difficult. (Av r)
26. I am confident my friendship will last. (S)
27. Outings are more enjoyable when I'm with my friend. (S)
28. I am concerned that my friend will find another friend that he/she prefers. (An)
29. I am often angry with my friend. (An)
30. I know I can rely on my friend. (S)

S = Secure, An = Anxious/Ambivalent, Av = Avoidant, r = reverse coded

Figure 1. Study One second-order confirmatory factor analysis