

Published in final edited form as:

Pers Individ Dif. 2015 April 1; 77: 149–155. doi:10.1016/j.paid.2014.12.051.

Forms of Friendship: A Person-Centered Assessment of the Quality, Stability, and Outcomes of Different Types of Adolescent Friends

Cody Hiatt^a, Brett Laursen^a, Karen S. Mooney^b, and Kenneth H. Rubin^c

Cody Hiatt: chiatt@fau.edu; Brett Laursen: laursen@fau.edu; Karen S. Mooney: mooneyk@geneseo.edu; Kenneth H. Rubin: krubin@umd.edu

^aFlorida Atlantic University, Department of Psychology, Florida Atlantic University, 3200 College Avenue, Fort Lauderdale FL 33314, USA

^bState University of New York at Geneseo, Department of Psychology, SUNY Geneseo, 1 College Circle, Geneseo, NY 14454, USA

^cUniversity of Maryland, Department of Human Development & Quantitative Methodology, 3304 Benjamin Building, University of Maryland, College Park, MD 20742, USA

Abstract

Friendships differ in terms of their quality and participants may or may not agree as to their perceptions of relationship quality. Two studies ($N = 230$ and 242) were conducted to identify distinct and replicable categories of friendship among young adolescents ($M = 11.6$ years old) using self and partner reports of relationship quality. Same-sex friendships were identified from reciprocated friend nominations. Each friend described perceptions of negativity and social support in the relationship. Cluster analyses based on reports from both friends yielded 4 friendship types in each study: a high quality group, a low quality group, and two groups in which friends disagreed about the quality of the relationship. High quality friendships were most apt to be stable from the 6th to the 7th grade. Participants in high quality friendships reported the highest levels of global self-worth and perceived behavioral conduct and the lowest levels of problem behaviors. Dyads reporting discrepant perceptions of quality differed from dyads who agreed that the friendship was high quality in terms of stability and individual adjustment, underscoring the advantages of person-centered strategies that incorporate perceptions of both partners in categorizations of relationships.

Keywords

Friend; Friendship Stability; Friendship Quality; Problem Behaviors

© 2015 Elsevier Ltd. All rights reserved.

Correspondence should be addressed to: Brett Laursen (laursen@fau.edu), Department of Psychology, Florida Atlantic University, 3200 College Avenue, Fort Lauderdale FL 33314, USA.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Friendships are critically important to adolescent development, providing validation and camaraderie, insight and emotional support, instrumental assistance and social skills training (Vitaro, Boivin, & Bukowski, 2009). But not all friendships are created equal. Variable-centered studies offer clues about distinctions between adolescent friendships, through descriptions of mean level differences in relationship characteristics. Friends differ along dimensions such as companionship, aid, security, and closeness (Bukowski, Hoza, & Boivin, 1994). Variable-centered approaches are not, however, well-suited to describe different forms or types of adolescent friendships. Typologies derived from person-centered approaches are unique in their ability to identify different forms of adolescent friendship. Rarely undertaken, typologies have yet to describe properties of friendships using reports from both participants in a relationship. As a consequence, we do not know the degree to which friendships differ in terms of participant perceptions, nor do we know the consequences of converging and diverging perceptions. Two studies are presented that describe high quality and low quality adolescent friendships, and distinguish these from friendships in which participants disagree as to the quality of the relationship.

Variable-centered and person-centered approaches are designed to answer different research questions, and the answers from one set of questions do not readily transfer to the other. Most of what we know about adolescent friendships comes from variable-centered studies, which are designed to describe mean-level differences in and rank-ordered associations between characteristics of individual participants. In a typical variable-centered study, the focus of interest is on processes that are assumed to be present to a similar degree in all members of a population (Laursen & Hoff, 2006). Variable-centered research questions tend to emphasize universal processes described in terms of associations between variables. Four questions illustrate how the approach has been used to describe adolescent friendships. To what extent are perceptions of relationship quality similar across adolescent friends? Results suggest that friend reports of relationship features are only modestly correlated (e.g., Spencer et al. 2013). To what extent are adolescent perceptions of friendship quality stable over time? Results suggest that views of friendships are not fixed, with autocorrelations for perceived satisfaction between 0.3 and 0.4 across one year (Branje et al., 2007). To what extent are adolescent friendships stable over time? One study suggests that between 1/3 and 1/2 of all middle school friendships do not survive from one academic year to the next (Bowker, 2004). To what extent do perceptions of friendship quality predict individual adolescent outcomes? Results suggest that reports of poor quality friendship are associated with lower levels of self-worth (e.g., Laursen, Furman, & Mooney, 2006) and higher levels of behavior problems (e.g., Adams & Laursen, 2007).

Person-centered research differs from variable-centered research in that it concerns the identification of individuals who resemble one another and who differ from other groups of individuals. Sweeping generalizations about adolescents and their friends are avoided. Instead, the focus of interest is on processes assumed to be specific to individuals who share particular attributes. When person-centered approaches are applied to the study of friendship, categories of dyads may be created on the basis of the unique perceptions of one or both friends. Person-centered research questions emphasize processes specific to each form of friendship. Do friends differ in terms of perceptions of the quality of their relationship? Although most friends share similar views, a sizable minority disagree as to

whether they would describe their relationship as high or low on friendship quality (Brendgen, Little, & Krappmann, 2000). What are the most common forms of friendship? One study, relying on reports from a single member of each dyad, suggests that the most typical type of friendship involved high levels of social support and low levels of negativity (Way et al., 2001). Are some forms of friendship more stable than others (Becker, 2013)? Do adolescent outcomes vary across different forms of friendship? In general, adolescents in high quality relationships (e.g., high support and low negativity) report the fewest adjustment difficulties and those in low quality relationships (e.g., low support and high negativity) report the most adjustment difficulties (e.g., Berndt, 2002). One study that included reports from both members of each friend dyad found that adjustment problems for those who disagreed about the quality of the relationship rivaled those in which both friends agreed the relationship was of poor quality (Burk & Laursen, 2005).

The first goal of this investigation was to identify categories of adolescent friendships that were distinct and replicable, drawn from cluster analyses conducted on reports of relationship quality provided by both friends in the dyad. Replicating results from cluster analyses using reports from a single member of the dyad (Way et al., 2001), we anticipated unique groups that described high and low quality relationships. Confirming conceptual categories created using reports from both members of the dyad (Burk & Laursen, 2005), we expected to find at least one cluster that described friends who disagreed about the quality of their relationship. The second goal of this investigation was to describe the over-time characteristics and outcomes associated with each of the different types of friendship. Individual perceptions of friendship quality tend to be stable over time (De Goede, Branje, Meeus, 2009), so we expected that this stability would translate into consistency in the classification of dyads into relationship quality groups. As has been found in romantic relationships (see Karney & Bradbury, 1995 for review), we expected that friendships described by both participants as high quality (i.e., high social support and low negativity) would be least likely to dissolve. Finally, consistent with correlational results for variable centered studies (e.g., Waldrip, Malcolm, & Jensen-Campbell, 2008), we expected that adolescents in high quality friendships would have fewer behavior problems than adolescents in low quality friendships.

Study 1

Participants

Participants included 230 adolescents (90 boys, 140 girls) in 115 same-sex, same grade friend dyads. Target adolescents were in the 6th grade and ranged in age from 11 to 13 years old ($M=11.44$, $SD=0.52$). Of this total, 52.2% were European American ($n=60$), 13.9% were Asian American ($n=16$), 8.7% were Hispanic American ($n=10$), 7.8% were African Americans ($n=9$) and the remainder were mixed or other ethnic backgrounds. Using parent reports of education and occupation, Hollingshead four factor (1975) socioeconomic scores ranged from 9 to 66 ($M=54.48$, $SD=9.75$) out of a potential range of 8 (e.g. laborers with a primary school education) to 66 (e.g. executives with a post-baccalaureate education).

Participants were drawn from a larger study of children's peer relationships. As part of this larger study, parent letters and consent forms were sent home with all students in three

public middle schools in the Washington DC metropolitan area; those who returned consents (84%) completed a best friend nomination measure. Participants in this larger study were asked to identify their very best friend and their second best friend (Bowker et al., 2006). Nominations were limited to same-sex same-grade school friends. Reciprocated best friends were defined as dyads who nominated one another as first or second best friends. A random subsample of participants from the larger study was selected to take part in a longitudinal follow-up ($n=283$). In one portion of this longitudinal study, participants were invited to bring their reciprocated best friend to the laboratory and 115 did so; these participants are hereafter referred to as “target adolescents”. There were no instances in which target adolescents were nominated as friends. The same friend was not nominated by multiple target participants. There were no greater than chance differences on any demographic, friendship, or peer nomination variable between target adolescents with reciprocated best friends who did and did not participate in the longitudinal study, or between those who did and did bring a reciprocated best friend to the laboratory.

Instruments and Procedure

Target adolescents and friends separately completed the *Network of Relationships Inventory* (Furman & Buhrmester, 1985), a 33-item instrument describing 11 characteristics of the friendship. Previous studies indicated that items load on 3 scales (Furman, 1996; Burk & Laursen, 2005): negativity, social support, and relative power. The present study focuses on *social support* (companionship, instrumental aid, intimacy, nurturance, affection, admiration, reliable alliance, and satisfaction) and *negativity* (conflict and annoying behavior). Items were rated on a scale ranging from 1 (*little or none*) to 5 (*the most*). Internal reliabilities were high ($\alpha=0.85-0.92$). *t*-tests ($p<.01$) indicated that boys reported less social support ($M=4.11$, $SD=0.41$, $d=0.23$) than girls ($M=4.34$, $SD=0.52$), so scores were standardized within sex prior to cluster analysis to avoid clusters based primarily on sex.

Target adolescents completed an abbreviated version of the *Self-Perception Profile for Adolescents* (Harter, 1988), assessing perceptions of interpersonal competence. The present study included the subscales of *global self-worth* and *behavioral conduct*, chosen because they were included in both studies. Each scale included 5 items, rated on a 4-point structured alternative format scale ranging from 1 (*really true* for the negative alternative) to 4 (*really true* for the positive alternative). *Behavioral conduct* measures comportment (e.g., “Some teenagers often do not like the way they behave but other teenagers usually like the way they behave”). *Global self-worth* measures overall self-esteem (e.g., “Some teenagers are disappointed with themselves BUT other teenagers are pretty pleased with themselves”). Internal reliabilities were acceptable ($\alpha=0.80-0.87$).

Plan of Analysis

Hierarchical cluster analysis (with Ward’s solution) was performed on dyads with target adolescent reports of social support, target adolescent reports of negativity, friend reports of social support, and friend reports of negativity. Ward’s procedure is designed to maximize the homogeneity within each cluster by minimizing the error sum of squares (ESS), which is the sum of the squared distance of each individual’s score from the mean of his or her cluster. The quality of the cluster solution was evaluated in terms of the overall explained

ESS, cluster heterogeneity, cluster group size, and conceptual clarity. The optimal solution explains the greatest amount of ESS with the least amount of heterogeneity. Small cluster groups are unreliable, and difficult to interpret and replicate (Bergman et al., 2003), so we gave preference to solutions with at least 10 cases per group. Separate analyses of variance (ANOVAs) contrasted the cluster groups on clustering variables to identify the distinct features of each group. There were no differences between children who attended different schools.

Results

A four-cluster solution emerged that explained 46.1% of the total ESS, with cluster homogeneity coefficients that ranged from 0.71 to 1.51 ($M=0.89$). This four-cluster solution compared favorably to a three-cluster solution that explained less error (ESS=35.11%) and a five-cluster solution with comparable heterogeneity but an unacceptably small ($n=7$) cluster. The four-cluster solution is depicted on the left side of Figure 1. Discrepancy group labels reflect the number and magnitude of differences between friends. The high discrepancy group had at least one difference between target adolescents and friends that was larger than 1 *SD* on a clustering variable, whereas the moderate discrepancy group had differences that were less than 1 *SD*.

One-way ANOVAs identified the salient features of each cluster. Statistically significant differences emerged for each cluster variable, $F(3, 111)=23.02-55.11, p<0.01-0.001$. There were statistically significant ($p<0.05$) group differences in follow-up LSD (least significant difference) tests. High quality friendships (16 male dyads and 25 female dyads) were higher than all other friendship groups on target adolescent ($d=0.92-2.05$) and friend ($d=0.72-1.19$) reports of social support. High quality friendships also were lower than all other friendship groups (except high discrepant) on target adolescent ($d=0.92-1.38$) and friend ($d=0.54-1.47$) reports of negativity. Low quality friendships (10 male dyads and 15 female dyads) were higher than all other friendships on target adolescent ($d=1.21-1.32$) and friend ($d=1.74-1.87$) reports of negativity. Low quality friendships were also lower than all other friendship groups (except high discrepant) on target adolescent ($d=0.81-0.92$) and friend ($d=1.19-1.21$) reports of social support.

Paired sample *t*-tests ($p<0.05$) compared discrepant groups on target adolescent and friend reports of social support and negativity. For moderate discrepant friendships (12 male dyads, 22 female dyads), target adolescent and friend reports differed on negativity ($d=0.58$), but not social support ($d=0.01$). For the high discrepant friendships (7 male dyads, 8 female dyads), target adolescent and friend reports differed on social support ($d=1.20$) and negativity ($d=0.63$).

Discussion

Consistent with our hypotheses, high and low quality friendships emerged. Friends agree that some friendships are better than others. Unique to this study was the inclusion of the perceptions of both members of the friendship dyad. Gathering reports from both friends enabled us to identify two additional types of friendships wherein partners disagreed about one or both characteristics of the relationship. Both of these discrepant perception groups

reported comparable differences in perceptions of negativity, but the smaller of the two groups also reported highly discrepant views of social support within the friendship. Because both the method (gathering reports from both friends) and the analyses (person-centered cluster analyses based on reports from both members of the friendship dyad) were novel, we conducted a replication study designed to bolster confidence in the friendship classifications derived from these cluster analyses.

Study 2

A second study was conducted to replicate and extend results from the first study. Two forms of replication were considered: (1) the structure of the friendship groups (i.e., do the same cluster groups emerge in each study?); and (2) the characteristics of members of each friendship group (i.e., across studies, do members of comparable cluster groups share attributes?). Two waves of longitudinal data were available in Study 2, so results could be extended into three new areas: (1) the stability of friendship groups (i.e., what percentage of each cluster group remain friends over time?); (2) the stability of perceptions of relationship quality within each friendship group (i.e., are friends classified in the same cluster group at different times?); and (3) the adjustment outcomes associated with each friendship group (i.e., do individual outcomes worsen for members of some cluster groups?).

Participants

Participants included 242 6th grade adolescents (88 boys, 152 girls) in 121 same-sex, same grade friend dyads. Target adolescents ($n=121$) ranged in age from 11 to 14 years old ($M=11.57$, $SD=0.58$) at the outset. Of this total, 34.7% were African American ($n=42$), 28.9% were European American ($n=35$), 36.4% were Hispanic American ($n=44$). Socioeconomic status scores ranged from 11 to 66 ($M=37.77$, $SD=10.10$.63) on a scale ranging from 8 to 66 (Hollingshead, 1975).

Participants were recruited from 18 public schools in the greater Miami and Fort Lauderdale metropolitan area. Participation rates resembled those of previous studies of adolescents (e.g., Silk, Steinberg, & Morris, 2003), ranging from approximately 45% to 75% within schools. Surveys were administered at annual intervals to small groups of students in quiet school settings in sessions that lasted approximately one hour. Research assistants read the instructions aloud and supervised the completion of the questionnaires.

Target adolescents were part of a longitudinal study that began in the 6th grade. At the outset, target adolescents nominated 3 same sex, same grade friends in rank order. Investigators contacted friends in the order listed to inquire if he or she was a friend of the target subject; if so, the friend was asked to participate in the study. In the 7th grade, target adolescents were asked if they were still friends with the individual named as a friend the previous year. If so, the same friend was asked about the status of the relationship and about participation in a second wave of data collection. Of the 172 target adolescents with best friends who completed friendship reports in 6th grade, 51 did not participate in the 7th grade, yielding an overall retention rate of 70.3% ($n=121$). Of the 121 target adolescents who participated in both waves of data collection, 90 were involved in stable friendships, defined as dyads in which both partners indicated that the other was a friend in the 6th grade and the

7th grade, and 31 were involved in unstable friendships, defined as dyads in which one partner indicated that the other was no longer a friend in the 7th grade. There were no instances in which target participants were nominated as friends. The same friend was not nominated by multiple target participants. There were no differences on any demographic or study variable between target adolescents with friend data in the 6th and 7th grade and those with friend data in the 6th grade only and no differences between the friends with and without 7th grade data in 6th grade.

Instruments and Procedure

Target adolescents and their friends completed the *Network of Relationships Inventory* (see Study 1) during the 6th and 7th grade. Internal reliabilities for *social support* ($\alpha=0.93$) and *negativity* ($\alpha=0.85$) were acceptable. T-tests indicated that boys reported less social support ($M=3.52$, $SD=0.89$, $p=0.001$, $d=0.51$) and less negativity ($M=2.05$, $SD=0.86$, $p=0.026$, $d=0.35$) than girls (social support $M=4.03$, $SD=0.75$; negativity $M=2.40$, $SD=1.08$), so scores were standardized by sex.

Target adolescents completed the *Self-Perception Profile for Adolescents* (see Study 1) during the 6th and 7th grades. Internal reliabilities for *behavioral conduct* ($\alpha=0.66$) and *global self-worth* ($\alpha=0.72$) were acceptable.

Target adolescents completed the *Youth Self Report* (Achenbach, 1991) during the 6th and 7th grades. The questionnaire assesses problem behaviors during the previous 6 months in 8 domains (aggressive behaviors, anxiety/depression, attention problems, delinquent behaviors, social problems, somatic complaints, thought problems, and withdrawn behaviors). A total of 119 items were rated on a scale ranging from 0 (*not true*) to 2 (*very true or often true*). *Total problems* represent the sum of all item scores. Internal reliability was high ($\alpha=0.88$).

Plan of Analysis

The first set of analyses determined the replicability of the results obtained in Study 1. To determine the replicability of the structure of the friendship groups, a hierarchical cluster analysis (with Ward's solution) was performed on 6th grade reports of social support and negativity using 6th grade data from Study 2. The number and type of clusters obtained from Study 2 were plotted alongside those obtained from Study 1. The squared Euclidian distance of the centroids obtained from the Study 1 cluster solution were compared to those from the Study 2 cluster solution to quantify the similarity of the friendship clusters. Distances should be less than 2 to be considered comparable (Bergman, Nurmi, & von Eye, 2012).

To determine the replicability of the attributes of the members of each friendship group, we compared adjustment scores for members of comparable friendship clusters across Study 1 and Study 2. ANOVAs contrasted the outcomes for dyads in comparable clusters (e.g., high quality friendships) across studies. Study, friendship group, and sex were the independent variables. Global self-worth and behavioral conduct (the only measures of adjustment that were the same across studies) were the dependent variables.

The remaining analyses describe the longitudinal features of the Study 2 friendship groups. The first analyses describe the stability of each type of friendship. Cell-wise comparisons of adjusted residuals determined whether the participants in each cluster group were more or less likely than chance to remain friends from the 6th to the 7th grades.

The second analyses examine the stability of perceptions of the quality of each friendship group. Two types of I-States as Objects Analyses (ISOA; Bergman, Nurmi & von Eye, 2012) were designed for this purpose. Structural stability analyses determine whether the same proportion of dyads fall into same cluster group at each time point, comparing cell types (populated at greater than chance levels) and antitypes (populated at less than chance levels) in the 6th grade and in the 7th grade. Individual stability analyses determine the odds that a specific dyad is classified into the same friendship groups in the 6th and 7th grades with hypergeometric tests that contrast the ratio of observed frequencies to expected frequencies within each friendship group.

The final analyses examined adjustment outcomes within stable friendships to identify differences between friendship groups in changes in problem behaviors. A repeated-measures ANOVA was conducted with friendship groups and sex as independent variables, grade (6th grade and 7th grade) as the repeated measure, and target subject reports of total problems as the dependent variable.

An average of 1.2% (range=0.5% to 2.0%) of the data were missing. Little's MCAR test indicated data were missing completely at random for Study 1, $\chi^2(3, N=115)=3.38, p>.05$, and Study 2, $\chi^2(13, N=121)=11.78, p>.05$. Multiple imputation techniques were applied to missing values.

Results

Friendship Cluster Structure Replication—To determine the replicability of the cluster solution obtained in Study 1, Ward's cluster analyses were conducted on grade 6 reports of social support and negativity using data from 6th grade data from Study 2. A 4-cluster solution emerged with an estimated sum of squares (ESS=41.12%) and homogeneity coefficients (range=0.49–1.55, $M=0.93$) that resembled those found in Study 1. The four-cluster solution is depicted on the right side of Figure 1. The 4 cluster solution compared favorably to the 3 cluster solution that explained less error (ESS=33.13%) and the 5 cluster solution with comparable heterogeneity but an unacceptably small cluster group ($n=4$). Discrepancy group labels reflect the number and magnitude of differences between friends. The high discrepancy group had at least one difference between target adolescents and friends that was larger than 1 *SD*, whereas the moderate discrepancy group had differences that were less than 1 *SD*.

One-way ANOVAs identified the salient features of each cluster. Statistically significant differences emerged for each cluster variable, $F(3, 117)=16.44–70.46, p<.001$. There were statistically significant ($p<.05$) group differences in follow-up LSD tests. High quality friendships (7 male dyads, 15 female dyads) were higher than all other friendship groups on target adolescent reports ($d=0.71–1.69$) and friend reports ($d=0.98–1.00$) of social support. High quality friendships were also lower than low quality friends on target adolescent

reports ($d=1.21$) and friend reports ($d=1.79$) of negativity. Low quality friendships (10 male dyads, 21 female dyads) were higher than all other friendship groups ($d=1.21-1.32$) on target adolescent reports of negativity and friend reports of negativity ($d=1.74-1.87$). Low quality friendships were also lower than high quality friends on target adolescent reports ($d=1.09$) and friend reports ($d=1.01$) of social support.

Paired sample *t*-tests compared discrepant groups on target adolescent and friend reports of social support and negativity. In moderate discrepant friendships, target adolescents and friends differed on both social support ($d=0.46$) and negativity ($d=0.71$). In high discrepant friendships, there were also differences between target adolescents and friends on social support ($d=1.19$) and negativity ($d=0.27$).

We compared the squared Euclidian distance of the centroids from the Study 1 cluster solution to the centroids from the 6th grade Study 2 cluster solution. The mean distance between the solutions was 0.51, ranging from 0.22 to 1.41 confirming the similarity of the structures of the friendship clusters across studies.

Friendship Cluster Outcome Replication—To determine the replicability of the attributes of the members of each friendship group, we combined comparable friendship clusters across Study 1 and Study 2. The high quality friendship groups from Study 1 and Study 2 were combined ($n=63$), as were the low quality friendship groups from Study 1 and Study 2 ($n=56$), the moderate discrepant friendship groups from Study 1 and Study 2 ($n=83$), and the high discrepant friendship groups from Study 1 and Study 2 ($n=34$). Separate 2 (study) by 4 (friendship group) by 2 (sex) ANOVAs were conducted with global self-worth and behavioral conduct as dependent variables. There were neither statistically significant main effects nor interactions involving study, indicating that friendship groups were comparable across studies in the sense that those classified into the same clusters had similar characteristics.

Main effects emerged for friendship groups, $F(3,228) = 2.55-2.86, p=0.037-0.05$. Target adolescents in the combined high quality group reported greater global self-worth ($M=3.50, SD=0.48, d=0.24-0.29$) than those in the other friendship groups ($M=3.20-3.25, SD=0.58-0.61$). Target adolescents in the combined high quality group also reported more behavioral competence ($M=3.37, SD=0.52, d=0.20-0.34$) than those in the other friendship groups ($M=3.02-3.16, SD=0.41-0.64$). The same pattern of results emerged when the high discrepant and the moderate discrepant groups were combined to form a single discrepant friendship group.

The Stability of Different Types of Adolescent Friendships—Using data from Study 2, friendship groups were described in terms of whether dyads remained friends from the 6th grade to the 7th grade. Adjusted residuals that identified differences between expected frequencies and observed frequencies within each friendship group indicated the proportion of dyads in each friendship group that maintained the same classification over time. Statistically significant results emerged for high quality friendships: 90.9% (20 of 22) of dyads remained friends from the 6th grade to the 7th grade (adjusted residual=2.0, $p<.05$). The stability of the other friendship groups was not greater than that expected by chance:

The proportion of dyads who remained friends from the 6th to the 7th grade ranged from 57.9% (11 of 19) of high discrepant friendships (adjusted residual=0.2, $p>.05$), to 64.5% (20 of 31) of low quality friendships (adjusted residual=0.5, $p>.05$), to 75.5% (37 of 49) of moderate discrepant friendships (adjusted residual=1.8, $p>.05$). Additional analyses revealed a similar pattern of results when the moderate and high discrepant friendship groups were combined.

The Stability of Perceptions Relationship Quality within Friendship Clusters—

Using data from Study 2, we conducted I-States as Objects Analyses (ISOA) to determine the stability of perceptions of relationship quality within each friendship group. The analyses constrain the structure of the cluster solution to be the same at each time point to determine if a single omnibus cluster yields the same pattern of results as separate cluster analyses conducted at each time point. To test the assumption of over-time structural invariance, we compared the squared Euclidian distance of the centroids from the ISOA solution to the time 1 centroids from the Ward's clustering procedure. Distances less than 0.25 are considered acceptable (Bergman, Nurmi, von Eye & 2012). The mean distance between the solutions was 0.06, confirming the assumption of over-time structural invariance and indicating the appropriate use of ISOA.

The results of ISOA indicate stability from the 6th to the 7th grade in the distribution of the population assigned to each of the clusters. Neither types (cells populated at greater than chance levels) nor antitypes (cells populated at less than chance levels) emerged in the 6th grade or in the 7th grade. Thus, a similar proportion of dyads were classified into each friendship group in the 6th grade and in the 7th grade, suggesting that there were no age-related changes in the distribution of dyads across the different types of friendships.

Longitudinal ISOA streams revealed statistically significant ($p<.05$) stability for each of the friendship groups. Adolescents who were classified as high quality friends in the 6th grade were 1.79 times more likely than chance to remain in the same high quality friendship group in the 7th grade. Adolescents who were classified as low quality friends in 6th grade were 2.27 times more likely to remain in the low quality friendship group in the 7th grade. Adolescents who were classified as moderate discrepant friends in the 6th grade were 1.62 times more likely to remain in the moderate discrepant friendship group in the 7th grade. Adolescents who were classified as high discrepant friends in the 6th grade were 1.66 times more likely to remain in the high discrepant friendship group in the 7th grade.

Friendship Cluster Differences in Individual Adjustment—

Using data from Study 2, friendship groups were contrasted in terms of adjustment outcomes. A 2 (sex) by 4 (friendship group) by 2 (time) repeated measures ANOVA was conducted with target adolescent total problems (Achenbach, 1991) as the dependent variable. There was a main effect for friendship groups, $F(3, 113)=3.75, p=0.013$. Target adolescents in high quality friendships reported significantly fewer problems than those in the low quality and those in the high discrepant friendship groups ($d=1.09-1.36$). There were neither main effects nor interactions involving time and sex. When the moderate and high discrepant groups were combined, adolescents in the high quality friendship group reported fewer problems than those in the combined discrepant group ($d=0.67$).

Discussion

We adopted a person-centered analytic strategy to categorize adolescent friendships on the basis of partner perceptions of relationship quality. Friendship types replicated. Results from two separate studies yielded similar types of friends: High quality (both partners reported above average social support and below average negativity); low quality (both participants reported below average social support and above average negativity); and discrepant quality (partners disagree about levels of social support and/or negativity). We then contrasted friendship types in terms of dyadic and individual outcomes. Friendship type predicted relationship stability: Only high quality friends had greater-than-chance odds of remaining friends from the 6th to the 7th grade. Friendship type was indicative of individual adjustment: Participants in high quality friendships had the fewest behavior problems and the best self-esteem.

The typologies to emerge from the cluster analyses were intuitive. Some friends agree that they are in good quality relationships, other friends agree that they are in poor quality relationships, and still others disagree as to the quality of their relationship. Divergent views of relationship quality appear to be fairly common among adolescents (Burk & Laursen, 2005). Of course, relationship quality is not the only dimension on which friendships may differ. Hartup (1996) argued that friendships can vary according to the content of the interactions between participants, the symmetry or distribution of power between participants, the degree of interdependence between participants, and the affective provisions the relationship provides to participants. Our findings confirm the latter. Other studies of adolescent friendship that focus on the content of social interactions identified antisocial, prosocial, and withdrawn groups of friends (Güro lu, van Lieshout, Haselager, & Scholte, 2007). It is an open question as to whether the typologies that emerge from different classification schemes are orthogonal. We know that friendships between antisocial children tend, on average, to be lower in quality than those between prosocial friends (Dishion, Andrews, & Crosby, 1995) we suspect that mean level differences between groups mask considerable variability within them in perceptions of the quality of the relationship. It follows that the stability of prosocial and antisocial friendships and the adjustment outcomes associated with each will differ depending on perceptions of the quality of the relationship (Bowker et al., 2006).

Adolescent friendships are widely characterized as somewhat tenuous. This is misleading. About 90% of high quality friendships remained stable across two academic years. Most adolescent friendships, however, were not high quality relationships. Friendships that were not of high quality had a no better than chance probability of surviving the year. Indeed, only a little more than half of all low quality friendships were stable from the 6th to the 7th grade. Previous variable-centered studies have reported a positive association between friendship satisfaction and friendship stability (Schneider, Fonzi, Tani, & Tomada, 1997) and a negative association between coercive conflict management strategies and friendship stability (Bowker, 2004), but they give no indication as to the interplay between predictors or the variability that can arise from divergent partner perceptions. Findings from our person-centered analyses suggest that there are qualitatively distinctions between friendships, both in the attributes that describe them and in the strength of their commitment.

On average, participants in high quality friendships were better adjusted than participants in other types of friendships. The absence of main effects and interactions involving time indicates that outcomes did not change as a function of participation in a friendship. This finding was not unexpected. There are several instances of concurrent correlations between adolescent friendship quality and adjustment (e.g., Laursen et al., 2006), but evidence of longitudinal change in adolescent outcomes is scarce (Vitaro et al., 2009). Null findings must be interpreted with caution, so we are hesitant to state unequivocally that friendships contribute to later adjustment. More probable, however, is that differences between friendship quality groups in adolescent adjustment are a product of selection effects. Adolescents with adjustment difficulties tend to select one another as friends (Poulin et al., 1997) and their friendships tend to be low in support and/or high in negativity (Poulin, Dishion, & Haas, 1999). Selection effects may also explain why levels of maladjustment among adolescents with highly discrepant views of the friendship rival those of adolescents who agree that their friendship is of poor quality. Youth with adjustment difficulties may be additionally burdened with social skills deficits that bias interpersonal perceptions (Bowker et al., 2007).

This investigation is not without limitations. We advise against reading too much into the particulars of the discrepant friendship groups. The cluster analyses treated the target adolescent and the friend as distinguishable categories, but in fact, friends do not occupy roles consistent with these labels. We were able to determine that target adolescent participants did not differ from nonparticipants on any study variables, but we could not do the same for the friends of these participants. Randomly assigning members within each dyad to the role of target adolescent and friend yields the same four groups, including a high discrepant and a moderate discrepant group, but mean levels of social support and negativity within the two discrepant groups vary across assignments. Put another way, we are confident in the assertion that high discrepant friendships are akin to low quality friendships in terms of their stability and the adjustment characteristics of participants, but we are less confident about the level and magnitude of differences between discrepant groups. It is also worth noting that larger samples may yield more clusters. A group describing themselves as average on social support and average on negativity would pull marginal members from the high and low quality groups, amplifying the differences between them. The cluster groups that emerged from our analyses were fairly small, limiting the power of moderator analyses, such as sex. Finally, the outcome variables were derived solely from self-reports. Objective measures of adjustment avoid problems arising from shared reporter variance.

Person-centered analyses make clear what variable-centered analyses only imply: Some friendships are better than others. High quality friendships last longer than low quality friendships and (perhaps not coincidentally) participants in the former are better adjusted than participants in the latter. Less obvious is the fact that children often do not agree as to the quality of their friendship. Despite the fact that one member of the dyad has a positive view of the affiliation, these friendships are in all other respects similar to low quality friendships. Apparently, well functioning friendships inspire concordant views of the relationship, a key characteristic that is often overlooked by variable centered approaches that are limited to reports from one member of the dyad.

References

- Achenbach, TM. Manual for the Youth Self-Report and 1991 profile. Burlington, VT: University of Vermont Department of Psychiatry; 1991.
- Adams R, Laursen B. The correlates of conflict: Disagreement is not necessarily detrimental. *Journal of Family Psychology*. 2007; 21(3):445–458. [PubMed: 17874930]
- Becker AO. Effects of similarity of life goals, values, and personality on relationship satisfaction and stability: Findings from a two-wave panel study. *Personal Relationships*. 2013; 20(3):443–461.
- Bergman, LR.; Magnusson, D.; El-Khoury, BM. Studying individual development in an interindividual context: A person-oriented approach. Mahwah, N.J: L. Erlbaum Associates; 2003.
- Bergman L, Nurmi J, Eye A. I-states-as-objects-analysis (ISOA): extensions of an approach to studying short-term developmental processes by analyzing typical patterns. *International Journal of Behavioral Development*. 2012; 36(3):237–246.
- Berndt TJ. Friendship quality and social development. *Current Directions in Psychological Science*. 2002; 11(1):7–10.
- Bowker A. Predicting friendship stability during early adolescence. *Journal of Early Adolescence*. 2004; 24(2):85–112.
- Bowker JCW, Rubin KH, Burgess KB, Booth-LaForce C, Rose-Krasnor L. Behavioral characteristics associated with stable and fluid best friendship patterns in middle childhood. *Merrill-Palmer Quarterly*. 2006; 52(4):671–693.
- Bowker JC, Rubin KH, Rose-Krasnor L, Booth-LaForce C. Good friendships, bad friends: Friendship factors as moderators of the relation between aggression and social information processing. *European Journal of Developmental Psychology*. 2007; 4(4):415–434.
- Branje SJT, Frijns T, Finkenauer C, Engels R, Meeus W. You are my best friend: commitment and stability in adolescents' same-sex friendships. *Personal Relationships*. 2007; 14(4):587–603.
- Brendgen M, Little TD, Krappmann L. Rejected children and their friends: A shared evaluation of friendship quality? *Merrill-Palmer Quarterly*. 2000; 46(1):45–70.
- Bukowski W, Hoza B, Boivin M. Measuring friendship quality during pre- and early adolescence: The development and psychometric properties of the friendship qualities scale. *Journal of Social and Personal Relationships*. 1994; 11(3):471–484.
- Burk W, Laursen B. Adolescent perceptions of friendship and their associations with individual adjustment. *International Journal of Behavioral Development*. 2005; 29(2):156–164. [PubMed: 18509518]
- De Goede IH, Branje SJ, Meeus WH. Developmental changes and gender differences in adolescents' perceptions of friendships. *Journal of Adolescence*. 2009; 32(5):1105–1123. [PubMed: 19304316]
- Dishion TJ, Andrews DW, Crosby L. Antisocial boys and their friends in early adolescence: Relationship characteristics, quality, and interactional process. *Child Development*. 1995; 66(1):139–151. [PubMed: 7497821]
- Furman, W. The measurement of friendship perceptions: conceptual and methodological issues. In: Bukowski, WM.; Newcomb, AF.; Hartup, WW., editors. *The company they keep: Friendship in childhood and adolescence*. New York, NY: Cambridge University Press; 1996. p. 41-65.
- Furman W, Buhrmester D. Children's perceptions of the personal relationships in their social networks. *Developmental Psychology*. 1985; 21(6):1016.
- Güro lu B, van Lieshout CF, Haselager GJ, Scholte RH. Similarity and complementarity of behavioral profiles of friendship types and types of friends: friendships and psychosocial adjustment. *Journal of Research on Adolescence*. 2007; 17(2):357–386.
- Harter, S. Manual for the self-perception profile for adolescents. University of Denver; 1988.
- Hartup WW. The company they keep: Friendships and their developmental significance. *Child Development*. 1996; 67(1):1–13. [PubMed: 8605821]
- Hollingshead, AB. Unpublished paper. Yale University; 1975. Four factor index of social status.
- Karney B, Bradbury T. The longitudinal course of marital quality and stability: a review of theory, methods, and research. *Psychological Bulletin*. 1995; 118(1):3–34. [PubMed: 7644604]

- Laursen B, Furman W, Mooney K. Predicting interpersonal competence and self-worth from adolescent relationships and relationship networks: Variable-centered and person-centered perspectives. *Merrill-Palmer Quarterly*. 2006; 52(3):572–600.
- Laursen B, Hoff E. Person-centered and variable-centered approaches to longitudinal data. *Merrill-Palmer Quarterly*. 2006; 52(3):377–389.
- Poulin F, Cillessen AH, Hubbard JA, Coie JD, Dodge KA, Schwartz D. Children's friends and behavioral similarity in two social contexts. *Social Development*. 1997; 6(2):224–236.
- Poulin F, Dishion TJ, Haas E. The peer influence paradox: Friendship quality and deviancy training within male adolescent friendships. *Merrill-Palmer Quarterly*. 1999; 45(1):42–61.
- Silk J, Steinberg L, Morris A. Adolescents' emotion regulation in daily life: Links to depressive symptoms and problem behavior. *Child Development*. 2003; 74(6):1869–1880. [PubMed: 14669901]
- Spencer S, Bowker J, Rubin K, Booth-Laforce C, Laursen B. Similarity between friends in social information processing and associations with positive friendship quality and conflict. *Merrill-Palmer Quarterly*. 2013; 59(1):106–134.
- Vitaro, F.; Boivin, M.; Bukowski, WM. The role of friendship in child and adolescent psychosocial development. In: Rubin, KH.; Bukowski, WM.; Laursen, B., editors. *Handbook of peer interactions, relationships, and groups*. New York: Guilford; 2009. p. 568-585.
- Waldrip AM, Malcolm KT, Jensen-Campbell LA. With a little help from your friends: The importance of high-quality friendships on early adolescent adjustment. *Social Development*. 2008; 17(4):832–852.
- Way N, Cowal K, Gingold R, Pahl K, Bissessar N. Friendship patterns among African American, Asian American, and Latino adolescents from low-income families. *Journal of Social and Personal Relationships*. 2001; 18(1):29–53.

Highlights

- We clustered friendship types given quality reports from both members of a friendship.
- Friendships categories included: high quality, low quality, and discrepant perception.
- High quality friends were most likely to remain friends over time.
- Adolescents in high quality friendships had less behavioral problems.

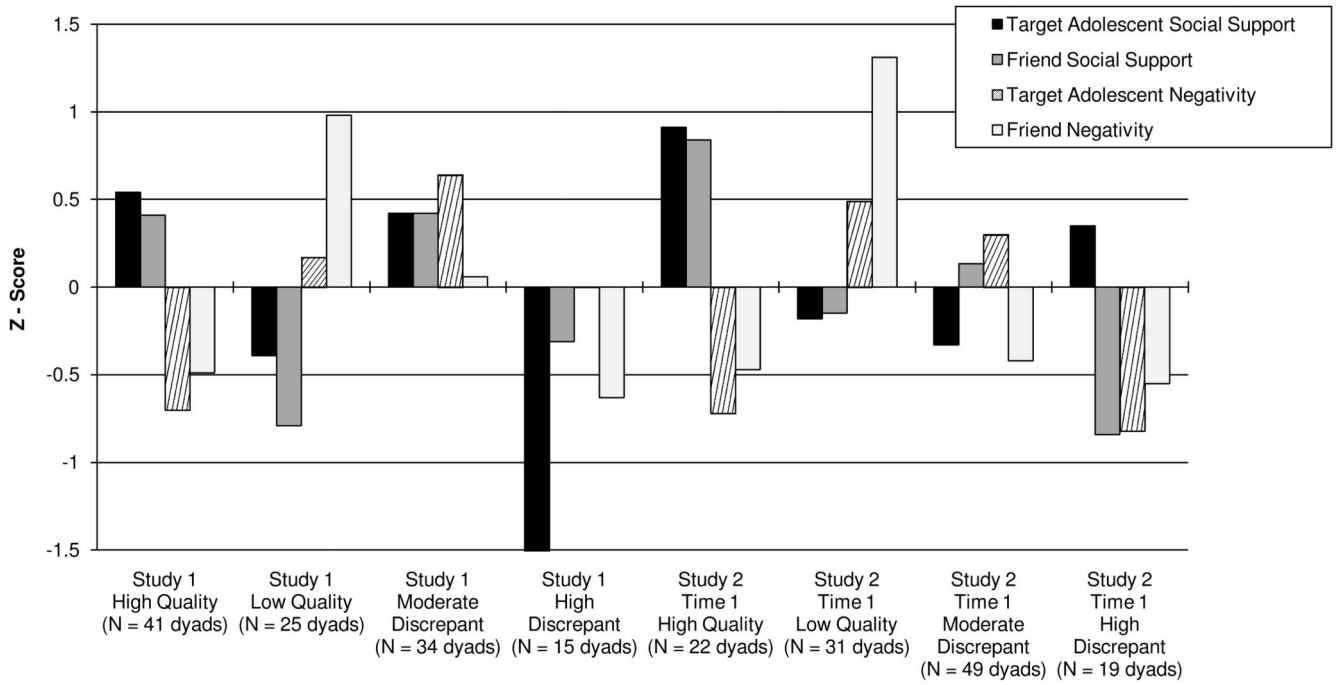


Figure 1. Results from Friendship Quality Cluster Analyses (Study 1 N=115 dyads, Study 2 N=121 dyads)