Published in final edited form as:

J Appl Dev Psychol. 2014 ; 35(2): 111–117. doi:10.1016/j.appdev.2013.12.002.

Pathways of Peer Relationships from Childhood to Young Adulthood

Jennifer E. Lansford

Duke University

Tianyi Yu

University of Georgia

Gregory S. Pettit

Auburn University

John E. Bates

Indiana University

Kenneth A. Dodge

Duke University

Abstract

This study examined trajectories of peer social preference during childhood and personality assessed in early adolescence in relation to trajectories of friendship quality during early adulthood. Participants ($N = 585$) were followed from age 5 to age 23. At ages 5 to 8, peers provided sociometric nominations; at age 12 participants reported their own personality characteristics; from age 19 to 23 participants rated their friendship quality. Latent growth modeling revealed that trajectories characterized by high levels of childhood peer social preference were related to trajectories characterized by high levels of early adulthood friendship quality. Early adolescent personality characterized by extraversion and conscientiousness predicted higher friendship quality at age 19, and conscientiousness predicted change in friendship quality from age 19 to 23. This study demonstrates that peer relationships show continuity from childhood to early adulthood and that qualities of core personality are linked to the development of adult friendships.

Keywords

friendships; peer relationships; personality

Correspondence concerning this manuscript may be addressed to Jennifer E. Lansford, Center for Child and Family Policy, Duke University, Box 90545, Durham, NC 27708. Phone and fax: 217-586-2870. lansford@duke.edu..

Author Note

The Child Development Project has been funded by grants MH42498, MH56961, MH57024, and MH57095 from the National Institute of Mental Health, HD30572 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, and DA016903 from the National Institute on Drug Abuse. Kenneth A. Dodge is supported by Senior Scientist award 2K05 DA015226 from the National Institute on Drug Abuse. We are grateful to the individuals who participated in this research.

In the adult social relationships literature, adults' friendships are described as an important source of social support contributing to aspects of well-being ranging from happiness (Demir, Ozdemir, & Weitekamp, 2007) to physical health and longevity (Mendes de Leon, 2005). Although the importance of high quality friendships in adulthood is widely acknowledged, few studies have taken a life-course perspective on understanding the development of peer relationships from childhood into adulthood or considered the role of personality in shaping adult friendships. The present study examined trajectories of peer social preference during childhood and personality during early adolescence in relation to trajectories of friendship quality during early adulthood.

Trajectories of Peer Relationships

Many studies have examined various predictors and consequences associated with positive and negative aspects of children's peer relationships, but few studies have examined developmental trajectories of peer relationships themselves. In an exception, Selfhout, Branje, and Meeus (2009) identified developmental trajectories of adolescents' friendship intimacy that were characterized as being interdependent versus disengaged over the course of five years. A more common approach than studying trajectories of peer relationships has been to examine the stability of standing in the peer group over shorter periods of time. In a meta-analysis of 77 studies, Jiang and Cillessen (2005) found that short-term reliabilities assessed across a 3-month period or less averaged .72, .70, .82, and .78, respectively, for acceptance, rejection, social preference, and liking. Longer-term stability (which was less than two years in all except one study) averaged .53, .52, .58, and .52, respectively, for acceptance, rejection, social preference, and liking. Effect sizes were larger for older than younger children and for shorter than for longer time intervals. Despite evidence from short-term longitudinal studies that peer sociometric status is moderately stable from one year to the next (e.g., Lansford, Killeya-Jones, Miller, & Costanzo, 2009), understanding long-term trajectories of peer relationships and factors that may affect these trajectories is lacking. There are numerous possible trajectories, e.g., for some there may be stably low peer acceptance, for others, it may be low initially, but increase, and so forth. If the long-term trajectories of peer relationships are studied it will be possible to evaluate the implications not only of peer relationships at one point of development and some outcome of interest, but also of the cross-time change and stability patterns. Rather than treating status in the peer group as a trait-like characteristic of children (e.g., rejected children, popular children), developmental science might be advanced by considering the dynamic nature of peer relationships over time. Thus, our first research question was how trajectories of peer social preference during childhood are related to trajectories of friendship quality during early adulthood.

In approaching that research question, it is important to acknowledge different ways that peer relationships have been characterized in the literature. The peer relationships literature has distinguished between social preference (defined as the degree to which a child is liked and accepted by the peer group as a whole) and friendship quality (defined in reference to a reciprocal dyadic relationship with a specific other child). Although children who are more accepted by the peer group as a whole tend to have more positive dyadic friendships, children who are rejected by the peer group can be protected from some of the detrimental

effects of peer rejection if they have a supportive best friendship (Parker & Asher, 1993). Furthermore, peer group affiliation and friendship quality may be associated with adjustment in different ways (e.g., Lansford, Criss, Pettit, Dodge, & Bates, 2003). Thus, peer group acceptance and friendship quality represent distinct, yet related, aspects of peer relationships.

Different aspects of peer relationships may be more or less salient as individuals develop (Bukowski, Motzoi, & Meyer, 2009). Elementary school classrooms that are relatively self-contained present a naturally-occurring unit within which to assess peer social preference (Fabes, Martin, & Hanish, 2009). This is also an ecologically valid social context for children. Developmentally, as children move from childhood into adolescence, peer social preference may become less meaningful and more difficult to assess because adolescents are more likely to change classes throughout the school day and therefore do not have as clear a peer group within which to assess social preference, and young adults may not have a relevant peer group at all. Instead, intimate dyadic friendships become increasingly important during adolescence (Berndt, 1982), and they remain so in early adulthood (Reis, Lin, Bennett, & Nezlek, 1993). Thus, an important question becomes whether peer social preference during childhood predicts friendship quality during early adulthood. On the one hand, one might expect that positive experiences in one peer domain (i.e., acceptance by the peer group) would carry over into positive experiences in another peer domain (i.e., high quality friendships). On the other hand, different social skills are needed in these different peer domains (e.g., exchanging intimate thoughts and feelings are more integral to a high quality dyadic friendship than to being accepted by a whole group of peers). What is missing from this body of research and addressed in the present study is understanding of whether developmental trajectories of peer social preference during childhood are related to subsequent trajectories of friendship quality during early adulthood.

The Role of Personality in Peer Relationships

In examining developmental trajectories of friendship quality in early adulthood, it makes sense to consider not just trajectories of peer social preference in childhood but also individual personality factors that may be related to social relationships. The second research question in the present study was in what ways are indicators of personality in early adolescence related to trajectories of friendship quality in early adulthood. Theoretical and empirical work has suggested that personality traits represent stable individual differences that are reflected in emotions, cognition, and behavior and that personality traits are important predictors of adaptation across the life-course (Buss & Plomin, 1984; Roberts & DelVecchio, 2000; Rothbart, Ahadi, & Evans, 2000).

Beyond infancy and early childhood, the Big Five characterization has dominated the study of personality (McCrae & Costa, 1999). In this framework, individuals are described in relation to their scores on five personality dimensions: openness, conscientiousness, extraversion, agreeableness, and neuroticism. This approach has its critics, who assert that these five dimensions do not capture all aspects of personality, that factor analyses designed to analyze personality dimensions are not well suited to deciding between competing models with different numbers of factors, and that this approach has been more data- than theory-

driven (e.g., Block, 1995); nevertheless, the Big Five have been found to relate in meaningful ways to a wide range of other measures of adaptive and maladaptive functioning (e.g., Costa & McCrae, 1995).

Big Five personality traits constitute major individual differences in the personal characteristics that individuals bring to social relationships. Therefore, it makes sense that personality characteristics would be related to the quality of individuals' peer relationships. Indeed, personality has been linked to peer acceptance and friendship during childhood (Gleason, Gower, Hohmann, & Gleason, 2005), adolescence (Jensen-Campbell et al., 2002; Jensen-Campbell & Malcolm, 2007), and early adulthood (Berry, Willingham, & Thayer, 2000). For example, individuals who are extraverted may have an advantage both in terms of being accepted by the peer group and in forming dyadic friendships (Jensen-Campbell et al., 2002). This would be an example consistent with the idea that personality influences how individuals act on their environments (e.g., being friendly and outgoing with peers), individuals' selection of particular environments (e.g., settings in which they have the opportunity for social interaction with peers), and responses that individuals elicit from other people (e.g., peer liking and reciprocated friendship in response to outgoing overtures; Caspi & Shiner, 2006; Scarr & McCartney, 1983; Shiner & Caspi, 2003).

Previous research has focused on associations between personality and peer relationships at individual points in time; even longitudinal studies usually have examined personality at one time as a predictor of peer relationships at a second time. Point estimates of associations between personality and peer relationships may not tell the whole story about these relationships because peer relationships change over time. For example, an initial stage of friendship formation is followed by a period of maintenance, and the skills best suited to supporting a friendship may differ depending on the stage of the friendship (Asher, Parker, & Walker, 1996). Extraversion, for instance, may be more important in the formation of a friendship than in its maintenance, whereas conscientiousness may be more important in the maintenance of a friendship than in its formation. The present study provides a new perspective by examining personality in relation to trajectories of friendship quality over time.

The Present Study

The present study was designed to examine two primary questions. First, how are trajectories of peer social preference during childhood related to trajectories of friendship quality during early adulthood? We hypothesized that trajectories of high social preference during childhood would be predictive of trajectories of high friendship quality during early adulthood, so we examined not just initial levels but change over time in peer relationships. We assessed peer social preference at ages 5-8 because these are the school years in which children have the most naturally occurring peer groups as they are largely in self-contained classrooms, and acceptance by the peer group as a whole is most developmentally salient (Fabes et al., 2009). We assessed friendship quality at ages 19-23 because at these ages, friendships are particularly important social contexts (Reis et al., 1993), perhaps more so than later in adulthood as individuals become more embedded in new roles as spouses and parents. Second, in what ways are indicators of personality in early adolescence related to

trajectories of friendship quality in early adulthood? We hypothesized that more extraversion, agreeableness, conscientiousness, and openness in early adolescence would be related to higher subsequent friendship quality, and that more neuroticism in early adolescence would be related to lower subsequent friendship quality. We investigated whether personality would be related to change over time in friendship quality in addition to initial levels of friendship quality.

Method

Participants

Participants were part of a multisite longitudinal study of child development (blinded for review). Families were recruited in two cohorts when the children entered kindergarten in 1987 or 1988 at three sites: Knoxville and Nashville, TN and Bloomington, IN. Parents were approached at random during kindergarten pre-registration and asked if they would participate in a longitudinal study of child development. About 15% of children at the targeted schools did not pre-register. These participants were recruited on the first day of school or by subsequent contact. Of those asked, approximately 75% agreed to participate. The sample consisted of 585 families at the first assessment. Males comprised 52% of the sample. Eighty-one percent (81%) of the sample were European American, 17% were African American, and 2% were from other ethnic groups. Follow-up assessments were conducted annually through age 23. Eighty percent of the original 585 families provided age 23 data for the present analyses. The latent growth modeling analyses were based on the sample ($n = 461$) that provided data on the outcome variables (social preference and friendship quality) for at least two time-points during the time period under investigation. The 461 participants were of higher SES in kindergarten than were the 124 original participants who did not provide outcome variables data, $t(567) = 2.74, p < .01$, but did not differ by gender or ethnicity. Written informed consent was provided in each year of data collection by parents of child participants and by the participants themselves after the age of 18 years.

Procedures and Measures

Peer relationships—Sociometric interviews following the protocol described by Coie, Dodge, and Coppotelli (1982) were conducted during the winter of each school year in all classrooms in which at least 70% of children's parents gave consent. Children were shown pictures of their classmates (in kindergarten and first grade, age 5 and 6) or a class roster (in second and third grades, age 7 and 8) and were asked to name up to three peers they especially liked and up to three peers they especially disliked. A social preference score was created by taking the standardized difference between the standardized like most nomination score and the standardized dislike most nomination score (see Coie et al., 1982).

Friendship quality was assessed through three items that were administered at ages 19, 20, 22, and 23. At each age, participants were asked to think about their best friend and to rate the following items related to that friend: Your friend would help you if you needed it; If you had personal problems, you could tell your friend about it even if it is something you could not tell other people; and You feel happy when you are with your friend. Items were

rated on a 5-point scale ranging from 1 = strongly disagree to 5 = strongly agree and were then averaged to create a best friendship quality composite score in each year. Alphas were .80, .92, .76, and .68 at ages 19, 20, 22, and 23, respectively. These items were adapted from the Friendship Qualities Scale developed by Bukowski, Hoza, and Boivin (1994) and were selected for the longitudinal analyses reported here because they were assessed identically at all four time points. In addition, although the composite measure captures diverse dimensions of friendship related to help, intimacy, and companionship, we followed Berndt and McCandless's (2009) recommendation to consider these positive dimensions as a unified construct for psychometric and psychological reasons.

Personality—Youths provided self reports on the Big Five Personality Questionnaire at age 12. Youths completed a 25-item version of the Big Five Personality Questionnaire (Lanthier, 1995), which is similar in content and structure to other measures of personality during childhood (e.g., Barbaranelli, Caprara, Rabasca, & Pastorelli, 2003). Adolescents rated each item according to how true it was of them on a 5-point scale ranging from 1 = hardly at all to 5 = extremely much. Items were averaged to create five composites (each with five items): 1. Extraversion (e.g., energetic, talkative; $\alpha = .63$); 2. Agreeableness (e.g., patient, polite; $\alpha = .55$); 3. Conscientiousness (e.g., organized, responsible; $\alpha = .63$); 4. Neuroticism (e.g., nervous, fearful; $\alpha = .58$); 5. Openness (e.g., intelligent, creative; $\alpha = .67$).

Results

Preliminary Analyses

Descriptive statistics and bivariate correlations are shown in Table 1. Social preference scores were correlated across years, as were friendship quality scores. Participants' extraversion at age 12 was associated with their friendship quality at ages 19 and 20. Agreeableness was associated with friendship quality at ages 20 and 22. Conscientiousness was associated with friendship quality from age 19 to age 22.

Associations between Trajectories of Peer Social Preference and Trajectories of Friendship Quality

To examine how trajectories of peer social preference during childhood are related to trajectories of friendship quality during early adulthood, we conducted a parallel latent growth modeling analysis in which the latent growth model of social preference from age 5 to 8 and the latent growth model of friendship quality from age 19 to 23 were estimated simultaneously and the growth factors were allowed to covary with each other. Missing data were handled using full information maximum likelihood (FIML) estimation, which results in unbiased parameter estimates and appropriate standard errors when data are missing at random (MAR; Muthén & Muthén, 2004). Even when the MAR assumption is not fully met, FIML estimates are generally better than estimates obtained with listwise deletion or other ad hoc methods (Schafer & Graham, 2002).

For the latent growth model of social preference from age 5 to age 8, time was centered at age 5. Thus, paths from the latent slope of social preference to the observed items were

constrained to be 0, 1, 2, and 3, which corresponds to ages 5, 6, 7, and 8, respectively. A linear growth model was fit with two individual growth parameters: (a) an intercept parameter with time centered at age 5, which represents the average social preference score at age 5, and (b) a linear slope parameter, which represents the average linear change in social preference over time. As shown in the cells for the mean of the intercept and slope in the social preference columns of Table 2, the average intercept was significantly different from zero, but the average linear slope was not. As shown in the cells for the variance of the intercept and slope in the social preference columns, significant variance existed in the intercept factor but not the slope. This means that, on average, social preference did not increase or decrease over time and that children varied from one another in their average social preference scores but not change in social preference scores.

The friendship quality data were not normally distributed and involved an excessive number of the highest score (5) reported by a large number of participants, suggesting a ceiling effect. To accommodate the ceiling effect of friendship quality data, we employed a Tobit (censored) growth modeling strategy (Long, 1996; Muthén, 1989; Tobin, 1958). For the growth model of friendship quality from age 19 to age 23, time was centered at age 19. Thus, paths from the latent slope of friendship quality to the observed items were constrained to be 0, 1, 3, and 4, which corresponds to age 19, 20, 22, and 23, respectively. As shown in the cells for the mean and variance of the intercept and slope in the friendship quality columns of Table 2, the baseline model indicated that the average intercept and average linear slope were significantly different from zero, indicating that friendship quality each year decreased. Significant variance existed in both the intercept and linear slope factors. As shown in the lower portion of Table 2, the intercept of friendship quality was negatively related to the slope of friendship quality ($-.05, p < .05$), and the intercept of social preference during childhood was positively related to the intercept of friendship quality during early adulthood ($.10, p < .05$), indicating that trajectories characterized by high levels of peer social preference during childhood were related to trajectories characterized by high levels of friendship quality during early adulthood.

Associations of Personality with Friendship Quality

To examine in what ways indicators of personality are related to trajectories of friendship quality during early adulthood, a conditional latent growth model was fit to test whether the growth factors of friendship quality from age 19 to 23 were related to variation in personality at age 12 (extraversion, agreeableness, conscientiousness, neuroticism, and openness). Child sex, race, and family SES were included in the model as control variables. As shown in Table 3, the set of predictors together accounted for 26% of the variance in the intercept of friendship quality at age 19, and accounted for 14% of the variance in the linear slope of friendship quality from age 19 to 23. As indicated in the intercept column, girls, compared to boys, had higher friendship quality at age 19, and participants who had higher levels of extraversion reported having higher friendship quality at age 19. Although higher conscientiousness predicted higher friendship quality at age 19 (as shown in the intercept column), higher conscientiousness also predicted greater decrease in friendship quality from age 19 to age 23 (as indicated in the slope column).

Discussion

Our examination of trajectories of peer relationships yielded two sets of findings. First, we found that trajectories characterized by high levels of peer social preference during childhood were related to trajectories characterized by high levels of friendship quality during early adulthood. Second, we found that early adolescent personality characterized by extraversion and conscientiousness predicted higher friendship quality at age 19, and conscientiousness predicted a slight decline in friendship quality from age 19 to 23.

These findings help advance understanding of the development of peer relationships across the life course. Our findings suggest a degree of continuity from childhood to early adulthood. Although the salience of different forms of peer relationships may change, with preference within a whole peer group important in the context of elementary school classrooms and dyadic friendship quality taking on increasing importance in adolescence and early adulthood (Berndt, 1982; Reis et al., 1993), we found that those children who were well-liked by their classroom peers from ages 5 to 8 were more likely to have high quality dyadic friendships from age 19 to 23. One reason for this continuity could be that skills such as regulating emotions contribute both to being liked by the peer group as a whole and to being able to form and maintain high quality friendships (e.g., Eisenberg, Fabes, Bernzweig, Karbon, Poulin, & Hanish, 2008; Lopes, Salovey, Côté, & Beers, 2005). In addition, our findings suggest some specific links between personality factors and subsequent friendship quality that may help account for continuity across development in peer relationships.

Extraversion and conscientiousness at age 12 were related to higher friendship quality at age 19. This makes sense given that extraversion involves being socially outgoing and displaying positive emotionality, and conscientiousness involves being responsible, all generally positive traits. Other research also has found extraversion (Jensen-Campbell et al., 2002) and conscientiousness (Jensen-Campbell & Malcolm, 2007) to be related to positive friendship quality. More surprisingly, conscientiousness was also related to a decline in friendship quality from age 19 to 23. Overall, conscientiousness is generally considered to be a positive personality characteristic, reflecting responsible, task-oriented, and planful behavior (Bates, Schermerhorn, & Goodnight, 2010). However, in the context of young adult friendships, it is possible that individuals who are conscientiousness may engage in less impulsive, fun-seeking behavior (Bates et al., 2010), and may, therefore, not be exposed to as rich and varied experiences with peers, contributing to a decline in friendship quality over this developmental period. Another possibility is that adolescents who are conscientious at age 12 continue in their conscientiousness as young adults, finding themselves more absorbed by adult responsibilities and planning for their futures which leaves less time for friendships and may make friendships more difficult to sustain. Caution should be taken in adopting these substantive interpretations, however, because the decline in friendship quality associated with conscientiousness must be considered in the context of decline in friendship quality over time across the sample.

Our hypothesis that agreeableness, openness, and neuroticism also would be related to friendship quality in early adulthood was not supported. Previous research has reported relations between these aspects of personality and friendship quality (Berry et al., 2000).

However, in regressions testing the unique associations between each of the Big Five factors and general peer acceptance, number of reciprocated friendships, and friendship quality in a sample of 5th to 8th graders, Jensen-Campbell and Malcolm (2007) found that agreeableness and neuroticism were not uniquely related to the peer variables, and openness was related to only two of the three, whereas extraversion and conscientiousness were uniquely related to all three peer variables, consistent with our findings for links between these same personality dimensions and friendship quality during early adulthood. It is also possible that neuroticism in particular would be related to negative aspects of relationships such as conflict. A limitation of our study was the brief measure of friendship quality that included only positive dimensions. Future studies that assess a wider, more comprehensive range of both positive and negative aspects of early adult friendships in relation to personality would be able to test whether positive personality characteristics are related to positive friendship quality specifically and negative personality characteristics are related to negative aspects of friendship specifically.

A limitation of this study is that although social preference scores were derived from peer reports, early adolescent personality and friendship quality during early adulthood were based on self-reports. Thus, the relations among subsets of the self-report variables may have been inflated by shared method variance. Future research would benefit from measures of friendship quality that consider both friends' perspectives. Furthermore, although friendship quality is a multidimensional construct that may include negative aspects such as arguments, perceptions that a friend is too demanding, and the like, our measure captured only positive dimensions related to the provision of help, intimacy, and companionship. An additional limitation was the measurement of personality only at age 12. Theoretical and empirical work has suggested that personality traits represent stable individual differences (Buss & Plomin, 1984; Roberts & DelVecchio, 2000; Rothbart et al., 2000), but we were not able to examine changes in personality over time. Furthermore, although our measure of the Big Five personality traits closely maps on to the operationalization of these traits in previous research, the subscales in our study had relatively low alphas suggesting that caution is warranted in interpreting the findings.

Although the present study focused on best friendship quality, an additional important relationship context during early adulthood is romantic relationships (Furman & Collins, 2009). Romantic relationships generally develop out of larger peer groups (Connolly, Craig, Goldberg, & Pepler, 2004). One possibility for why we found a decrease in friendship quality from age 19 to 23 would be if romantic relationships were becoming increasingly important over this developmental period and romantic partners were increasingly taking on functions that previously were held by best friends. Research that has examined both peer relationships and romantic relationships has found links between these two interpersonal contexts (Dhariwal, Connolly, Paciello, & Caprara, 2009). An important direction for future research will be to examine how friendships fit into the broader interpersonal context of other social relationships during early adulthood.

Our findings have two major applied implications: in relation to interventions designed to improve individuals' peer relationships and in social skills training that may be directed at individuals with particular personality features. First, a large number of interventions

attempt to change children's peer relationships either as a direct goal in and of themselves (e.g., to prevent bullying, peer victimization, or peer rejection; e.g., Olweus, 1993) or as an indirect means of bringing about change in children's adjustment (e.g., enhancing peer acceptance as a way of increasing children's academic performance and reducing children's behavioral and emotional problems; Conduct Problems Prevention Research Group, 1999). The present findings support the utility of such interventions and suggest that one reason peer interventions during childhood may have long-term effects into adulthood is that peer acceptance during childhood is related to friendship quality in early adulthood. Without intervention to break patterns of peer rejection, early peer problems put children at risk for low friendship quality during early adulthood, thus preventing access to a major source of social support that has been found to enhance adults' psychological and physical well-being (Demir et al., 2007; Mendes de Leon, 2005).

Second, social skills training represents another applied implication of the present findings. Personality traits generally have been conceptualized as rather static and immutable, but this is not necessarily the case (Boyce, Wood, & Powdthavee, 2013). In a longitudinal study of Big Five personality traits in adults at two points in time with a four-year interval between, Boyce et al. found that personality changed in meaningful ways over time and that changes in personality were related to changes in adults' life satisfaction. Given that extraversion and conscientiousness emerged in the present study as aspects of personality that were related to trajectories of friendship quality in early adulthood, behavioral characteristics related to extraversion and conscientiousness would be reasonable targets of social skills training, especially for individuals who are having difficulties forming or maintaining friendships in early adulthood.

By prospectively following a large sample of European Americans and African Americans from age 5 to age 23, we were able to examine developmental trajectories of peer relationships extending from childhood into early adulthood. The availability of peer- and self-reports contributed a variety of perspectives to the understanding of these trajectories. These analyses suggest two especially important conclusions. First, developmental trajectories of peer social preference in childhood are related to developmental trajectories of friendship quality in early adulthood. Second, personality characteristics are related not just to friendship quality at a single point in time but also to the way that these peer relationships develop over time. Together, these findings suggest the utility of conceptualizing the development of peer relationships from a life course perspective and in terms of individual differences in personality that children, adolescents, and young adults bring to their social relationships.

References

- Asher, S.R.; Parker, J.G.; Walker, D. Distinguishing friendship from acceptance: Implications for intervention and assessment. In: Bukowski, W.M.; Newcomb, A.F.; Hartup, W.W., editors. *The company they keep: Friendships in childhood and adolescence*. Cambridge University Press; 1996. p. 366-405.
- Barbaranelli C, Caprara G.V., Rabasca A, Pastorelli C. A questionnaire for measuring the Big Five in late childhood. *Personality and Individual Differences*. 2003; 34:645-664.

- Bates, JE.; Schermerhorn, AC.; Goodnight, JA. Temperament and personality through the life span. In: Freund, AM.; Lamb, ME.; Lerner, RM., editors. *Social and emotional development across the lifespan: Vol. 2, Handbook of life-span development*. Wiley; Hoboken, NJ: 2010. p. 208-253.
- Berndt TJ. The features and effects of friendship in early adolescence. *Child Development*. 1982; 53:1447–1460.
- Berndt, TJ.; McCandless, MA. Methods for investigating children's relationships with friends. In: Rubin, KH.; Bukowski, WM.; Laursen, B., editors. *Handbook of peer interactions, relationships, and groups*. Guilford Press; New York: 2009. p. 46-81.
- Berry DS, Willingham JK, Thayer CA. Affect and personality as predictors of conflict and closeness in young adults' friendships. *Journal of Research in Personality*. 2000; 34:84–107.
- Block J. A contrarian view of the five-factor approach to personality description. *Psychological Bulletin*. 1995; 117:187–215. [PubMed: 7724687]
- Boyce CJ, Wood AM, Powdthavee N. Is personality fixed? Personality changes as much as 'variable' economic factors and more strongly predicts changes to life satisfaction. *Social Indicators Research*. 2013; 111:287–305.
- Bukowski WM, 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; 11:471–484.
- Bukowski, WM.; Motzoi, C.; Meyer, F. Friendship as process, function, and outcome. In: Rubin, KH.; Bukowski, WM.; Laursen, B., editors. *Handbook of peer interactions, relationships, and groups*. Guilford Press; New York: 2009. p. 217-231.
- Buss, A.; Plomin, R. *Temperament: Early developing personality traits*. Erlbaum; Hillsdale, NJ: 1984.
- Caspi, A.; Shiner, RL. Personality development. In: Damon, W.; Lerner, R.; Eisenberg, N., editors. *Handbook of child psychology, Vol. 3. Social, emotional, and personality development*. 6th. Wiley; New York: 2006. p. 300-365.
- Coie JD, Dodge KA, Coppotelli HA. Dimensions and types of social status: A cross-age perspective. *Developmental Psychology*. 1982; 18:557–569.
- Conduct Problems Prevention Research Group. Initial impact of the Fast Track prevention trial for conduct problems: I. The high-risk sample. *Journal of Consulting and Clinical Psychology*. 1999; 67:631–647. [PubMed: 10535230]
- Connolly J, Craig W, Goldberg A, Pepler D. Mixed-gender groups, dating, and romantic relationships in early adolescence. *Journal of Research in Adolescence*. 2004; 14:185–207.
- Costa PT, McCrae RR. Solid ground in the wetlands of personality: A reply to Block. *Psychological Bulletin*. 1995; 117:216–220. [PubMed: 7724688]
- Demir M, Ozdemir M, Weitekamp LA. Looking to happy tomorrows with friends: Best and close friendships as they predict happiness. *Journal of Happiness Studies*. 2007; 8:243–271.
- Dhariwal A, Connolly J, Paciello M, Caprara GV. Adolescent peer relationships and emerging adult romantic styles: A longitudinal study of youth in an Italian community. *Journal of Adolescent Research*. 2009; 24:579–600.
- Eisenberg N, Fabes RA, Bernzweig J, Karbon M, Poulin R, Hanish L. The relations of emotionality and regulation to preschoolers' social skills and sociometric status. *Child Development*. 2008; 64:1418–1438. [PubMed: 8222881]
- Fabes, RA.; Martin, CL.; Hanish, LD. Children's behaviors and interactions with peers. In: Rubin, KH.; Bukowski, WM.; Laursen, B., editors. *Handbook of peer interactions, relationships, and groups*. Guilford Press; New York: 2009. p. 45-62.
- Furman, W.; Collins, WA. Adolescent romantic relationships and experiences. In: Rubin, KH.; Bukowski, WM.; Laursen, B., editors. *Handbook of peer interactions, relationships, and groups*. Guilford Press; New York: 2009. p. 341-360.
- Gleason TR, Gower AL, Hohmann LM, Gleason TC. Temperament and friendship in preschool-aged children. *International Journal of Behavioral Development*. 2005; 29:336–344.
- Jensen-Campbell LA, Adams R, Perry DG, Workman KA, Furdella JQ, Egan SK. Agreeableness, extraversion, and peer relations in early adolescence: Winning friends and deflecting aggression. *Journal of Research in Personality*. 2002; 36:224–251.

- Jensen-Campbell LA, Malcolm KT. The importance of conscientiousness in adolescent interpersonal relationships. *Personality and Social Psychology Bulletin*. 2007; 33:368–383. [PubMed: 17312318]
- Jiang XL, Cillessen AHN. Stability of continuous measures of sociometric status: A meta-analysis. *Developmental Review*. 2005; 25:1–25.
- Lansford JE, Criss MM, Pettit GS, Dodge KA, Bates JE. Friendship quality, peer group affiliation, and peer antisocial behavior as moderators of the link between negative parenting and adolescent externalizing behavior. *Journal of Research on Adolescence*. 2003; 13:161–184. [PubMed: 20209019]
- Lansford JE, Killea-Jones LA, Miller S, Costanzo PR. Early adolescents' social standing in peer groups: Behavioral correlates of stability and change. *Journal of Youth and Adolescence*. 2009; 38:1084–1095. [PubMed: 19636773]
- Lanthier, RP. Manual for the Big Five Personality Questionnaire - Revised Child Version. The George Washington University; 1995. Unpublished manuscript
- Long, S. Regression models for categorical and limited dependent variables. Sage; Thousand Oaks: 1996.
- Lopes PN, Salovey P, Côté S, Beers M. Emotion regulation abilities and the quality of social interaction. *Emotion*. 2005; 5:113–118. [PubMed: 15755224]
- McCrae, RR.; Costa, PT, Jr.. A five-factor theory of personality. *Handbook of personality*. 2nd. Pervin, L.; John, OP., editors. Guilford Press; New York: 1999. p. 139-153.
- Mendes de Leon CF. Why do friendships matter for survival? *Journal of Epidemiology and Community Health*. 2005; 59:538–539. [PubMed: 15965133]
- Muthén B. Tobit factor analysis. *British Journal of Mathematical and Statistical Psychology*. 1989; 42:241–250.
- Muthén, B.; Muthén, L. Mplus user's guide. 3rd. Muthén & Muthén; Los Angeles: 2004.
- Olweus, D. Bullying at school: What we know and what we can do. Blackwell; Oxford, England: 1993.
- Parker JG, Asher SR. Friendship and friendship quality in middle childhood: Links with peer group acceptance and feelings of loneliness and social dissatisfaction. *Developmental Psychology*. 1993; 29:611–621.
- Reis HT, Lin Y, Bennett ME, Nezlek JB. Change and consistency in social participation during early adulthood. *Developmental Psychology*. 1993; 29:633–645.
- Roberts BW, DelVecchio WF. The rank-order consistency of personality traits from childhood to old age: A quantitative review of longitudinal studies. *Psychological Bulletin*. 2000; 126:3–25. [PubMed: 10668348]
- Rothbart MK, Ahadi SA, Evans DE. Temperament and personality: Origins and outcomes. *Journal of Personality and Social Psychology*. 2000; 78:122–135. [PubMed: 10653510]
- Scarr S, McCartney K. How people make their own environments: A theory of genotype → environment effects. *Child Development*. 1983; 54:424–435. [PubMed: 6683622]
- Schafer JL, Graham JW. Missing data: Our view of the state of the art. *Psychological Methods*. 2002; 7:147–177. [PubMed: 12090408]
- Selfhout MHW, Branje SJT, Meeus WHJ. Developmental trajectories of perceived friendship intimacy, constructive problem solving, and depression from early to late adolescence. *Journal of Abnormal Child Psychology*. 2009; 37:251–264. [PubMed: 18941888]
- Shiner R, Caspi A. Personality differences in childhood and adolescence: Measurement, development, and consequences. *Journal of Child Psychology and Psychiatry*. 2003; 44:2–32. [PubMed: 12553411]
- Tobin J. Estimation of relationships for limited dependent variables. *Econometrica*. 1958; 26:24–36.

Table 1

Descriptive Statistics and Correlations

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demographics																
1. Sex (girl)	-															
2. Race (Non-White)	.02	-														
3. Family SES	-.05	-.39***	-													
Social Preference																
4. Age 5	.16***	-.07	.13**	-												
5. Age 6	.09*	-.11*	.23***	.49***	-											
6. Age 7	.09*	-.10*	.15**	.40***	.44***	-										
7. Age 8	.10*	-.03	.20***	.43***	.49***	.49***	-									
Personality Age 12																
8. Extraversion	.01	-.15**	.03	-.02	.04	-.05	-.01	-								
9. Agreeableness	.03	.06	-.01	.04	.03	-.03	.03	-.14**	-							
10. Conscientiousness	.12*	.07	-.03	.02	.04	.12*	.11*	.12*	.29***	-						
11. Neuroticism	.20***	-.01	-.01	.04	.01	.06	.01	-.35***	-.10*	-.10*	-					
12. Openness	-.13**	.01	.16**	-.07	-.09	-.03	-.04	.09	.03	.18***	-.15**	-				
Friendship Quality																
13. Age 19	.18***	-.03	.10	.12*	.03	.14*	.10	.12*	.03	.23***	-.08	.06	-			
14. Age 20	.21***	-.03	.04	.11*	.07	.08	.20***	.12*	.12*	.13*	.04	-.04	.39***	-		
15. Age 22	.18***	-.08	.10*	.14**	.06	.11*	.06	.09	.16**	.12*	.03	-.06	.19**	.36***	-	
16. Age 23	.20***	-.04	.10*	.13**	.06	.08	.04	.03	-.05	.05	-.05	-.05	.32***	.34***	.45***	-
Mean	.48	.18	39.59	.15	.21	.16	.06	3.53	3.58	3.50	2.50	3.61	4.68	4.69	4.59	4.62
SD	.50	.39	13.96	.97	.89	.95	.94	.67	.55	.63	.59	.68	.54	.44	.50	.44
n	585	585	569	566	467	483	443	430	430	430	430	430	380	397	399	417

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

.100) < *p*

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Table 2

Associations between Trajectories of Social Preference and Trajectories of Friendship Quality

	<u>Social Preference</u>				<u>Friendship Quality</u>			
	Intercept		Slope		Intercept		Slope	
<i>M (SE)</i>	.21***	(.04)	-.03	(.02)	5.12***	(.06)	-.08***	(.02)
<i>Variance (SE)</i>	.43***	(.06)	.02	(.01)	.46***	(.09)	.02*	(.01)
Covariance (<i>SE</i>)								
Social preference								
Intercept	-	-						
Slope	-.02	(.02)	-	-				
Friendship quality								
Intercept	.10*	(.04)	.01	(.02)	-	-		
Slope	.00	(.01)	-.01	(.00)	-.05*	(.02)	-	-

Note. Model fit index: AIC = 6725.61; BIC = 6816.55; Sample Adjusted BIC = 6746.73.

** $p < .01$,

* $p < .05$,

*** $p < .001$.

Table 3

Personality Predicting Growth Parameters of Friendship Quality from Age 19 to Age 23: Censored (Tobit)
Latent Growth Model

Predictors	Growth Parameters of Friendship Quality			
	Intercept		Slope	
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>
1. Child sex (girl)	.41***	(.10)	-.01	(.03)
2. Race (Non-White)	-.05	(.14)	-.01	(.04)
3. SES	.01	(.00)	.00	(.00)
4. Extraversion	.19*	(.09)	-.02	(.02)
5. Agreeableness	.18	(.10)	-.03	(.03)
6. Conscientiousness	.26**	(.09)	-.05*	(.02)
7. Neuroticism	.07	(.11)	-.03	(.03)
8. Openness	-.01	(.07)	-.01	(.02)
<i>M (SE)</i>	2.34**	(.77)	.41	(.21)
Residual variance (<i>SE</i>)	.35***	(.08)	.01*	(.01)
<i>R</i> ²	.26***	(.06)	.14	(.10)

Note. Model fit index: AIC = 10561.20; BIC = 10792.67; Sample Adjusted BIC = 10614.95.

*
 $p < .05$,

**
 $p < .01$,

 $p < .001$.