

“Tell me who your friends are and I’ll tell you who your friends will be”: Consistency and change in social competence in adolescent friendships across school transitions

Journal of Social and
Personal Relationships
29(7) 861–883

© The Author(s) 2012

Reprints and permissions:

sagepub.co.uk/journalsPermissions.nav

DOI: 10.1177/0265407512448272

spr.sagepub.com



Berna Güroğlu¹, Antonius H. N. Cillessen²,
Gerbert J. T. Haselager², and Cornelis F. M. van Lieshout²

Abstract

This study examined selection effects in behavioral similarity between adolescents and their new best friends after a school transition. Participants were 322 adolescents with a best friend in elementary school (Time 1, age 11) and a new best friend three years later in secondary school (Time 2, age 14). Three aspects of participants’ and their two best friends’ social competence were measured (antisocial behavior, prosocial behavior, low sociability). Structural equation modeling was used to predict the competence profiles of the adolescents’ new friends from their own and their previous friends’ social competence. There was evidence for the consistency across friendships in sociability and antisocial behavior. Findings indicate consistency and opportunities for change in friendship patterns across developmental transitions in adolescence.

¹Leiden University, The Netherlands

²Radboud University Nijmegen, Netherlands

Corresponding author:

Berna Güroğlu, Institute of Psychology, Leiden University, Pieter de la Court Building, Wassenaarseweg 52, 2333AK Leiden, The Netherlands

Email: bguroglu@fsw.leidenuniv.nl

Keywords

Adolescence, peer relationships, selection, similarity, social development, antisocial behavior, withdrawn behavior, prosocial behavior

“Tell me who your friends are and I’ll tell you who you are.” Similar sayings in different cultures emphasize the significance of the characteristics of one’s friends. The title of this article is a paraphrase of this saying. The underlying idea is partly based on the fact that friends are often similar to one another. Friends are similar in terms of sex, ethnicity, and age (Kandel, 1978), social-cognitive abilities (Kurdek & Krile, 1982), interests (Berndt, 1982), and various behavior such as play (Rubin, Lynch, Coplan, Rose-Krasnor, & Booth, 1994), prosocial, antisocial, and withdrawn behavior (Haselager, Hartup, van Lieshout, & Riksen-Walraven, 1998; Kupersmidt, DeRosier, & Patterson, 1995), aggression and victimization (Ellis & Zarbatany, 2007; Poulin et al., 1997), internalizing problems (Haselager et al., 1998; Mariano & Harton, 2005), and antisocial behaviors, including drug, alcohol, and cigarette use (Engels, Knibbe, Drop, & de Haan, 1997; Engels, Vitaro, Blokland, de Kemp, & Scholte, 2004; Kandel, 1978).

In spite of this similarity, there is considerable change in friendships over time, as indicated by relatively low stability status (Hardy, Bukowski, & Sippola, 2002). Such instabilities in friendships may be particularly pronounced during developmental transitions. The transition from elementary to high school is one such dramatic shift (Aikins, Bierman, & Parker, 2005). The significant changes in peer context that take place during this transition impact peer relationships (Hardy et al., 2002; Pellegrini & Bartini, 2000). The main purpose of the current study was to examine selection effects in friendship formation and particularly the extent to which the behaviors of adolescents’ old and new friends are similar across a three-year period that includes a transition from elementary to secondary school.

School transitions in adolescence

Adolescence is a developmental period characterized by physical, cognitive, socio-emotional, and contextual changes (Steinberg & Morris, 2001). A major developmental task in this period relates to peer relationships (Rubin, Coplan, Chen, Buskirk, & Wojslawowicz, 2005). In particular, friendships gain significance in adolescents’ lives and school transitions are likely to disrupt them. Establishing new friendships after a school transition is common (Bukowski, Sippola, & Newcomb, 2000). Across the transition to high school, only one third of the peers nominated as friends before the transition were nominated again after the transition, due to both friendship loss and formation of new friendships (Bukowski & Newcomb, 1984). The transition to middle school was related to low stability of reciprocated friendships and low stability of acceptance in the peer group (Hardy et al., 2002).

The transition from elementary to high school brings about a shift from a small, self-contained environment to large, heterogeneous schools with increased anonymity and reduced teacher support and contact (Aikins et al., 2005; Seidman, Allen, Aber, Mitchell, & Feinman, 1994). Although classroom sizes may remain similar, adolescents have more

opportunities to interact with other peers from their grade. The transition is also characterized by large changes in peer group context with less adult monitoring, larger peer group exposure, and more variety in peer experiences (Brown, 1990; Eccles, Wigfield, & Schiefele, 1998; Feldlaufer, Midgley, & Eccles, 1988). The larger and more diverse peer context also presents opportunities to form friendships with peers of varying characteristics (Hardy et al., 2002). Examining friendships before and after the transition enables us to determine developmental patterns in friendship formation and the consistency or variability in characteristics of previous and new friendships.

Previous studies on school transitions, peer relationships, and behavior with friends have mostly focused on peer status (Hardy et al., 2002) and on bullying and victimization (Pellegrini & Bartini, 2000; Pellegrini & Long, 2002). There has been little emphasis on the role of school transitions in changes in dyadic friendships. Aikins et al. (2005) examined the influence of pre-transition friendships on transition adjustment from age 11 to age 14. Two-thirds of their participants had a different best friend after the transition, whereas 21% no longer had contact with their pre-transition best friend. Other findings indicate that pre-transition friendship quality predicts friendship maintenance and post-transition friendship quality. Considering that most pre-transition friendships are replaced by new friendships after a school transition, we were particularly interested in the similarity of the characteristics of pre-transition friends and 'newly formed' post-transition friends.

Similarity of friends

One salient process leading to similarity in friendships is simple: similarity attracts, also referred to as the *selection effect*. Similarity of behaviors and attitudes determines interpersonal attraction, friendship formation, and stability (Kandel, 1978). Children like peers who are similar to themselves in behavioral styles and social status (Nangle, Erdley, & Gold, 1996; Nangle, Erdley, Zeff, Stanchfield, & Gold, 2004), which precedes friendship formation (Bukowski, Pizzamiglio, Newcomb, & Hoza, 1996). Similarity also influences friendship formation by promoting relationship equality and cooperation (Aboud & Mendelson, 1996; Asher, Parker, & Walker, 1996; Rubin et al., 1994; Savin-Williams & Berndt, 1990). In principle, the selection effect based on similarity is in process every time a new friendship is formed.

A second process leading to similarity is that friends socialize each other in a number of ways, also referred to as mutual *peer influence*, in which two friends become similar by influencing each other. This socialization process can be studied only in longitudinal assessments of stable friendships. Research on the stability of friendships in adolescence shows considerable levels of change in friendships across a single school year (Değirmencioğlu, Urberg, Tolson, & Richard, 1998) or even three months (Ellis & Zarbatany, 2007). The main goal of this study was to examine consistency of characteristics across *different* friendships. As a result, socialization processes are not examined in this study. Instead, any similarity found across friendships should be attributed to selection processes.

Understanding socialization versus selection effects in friendship similarity has occupied researchers for decades (e.g., Kandel, 1978; Knecht, Snijder, Baerveldt,

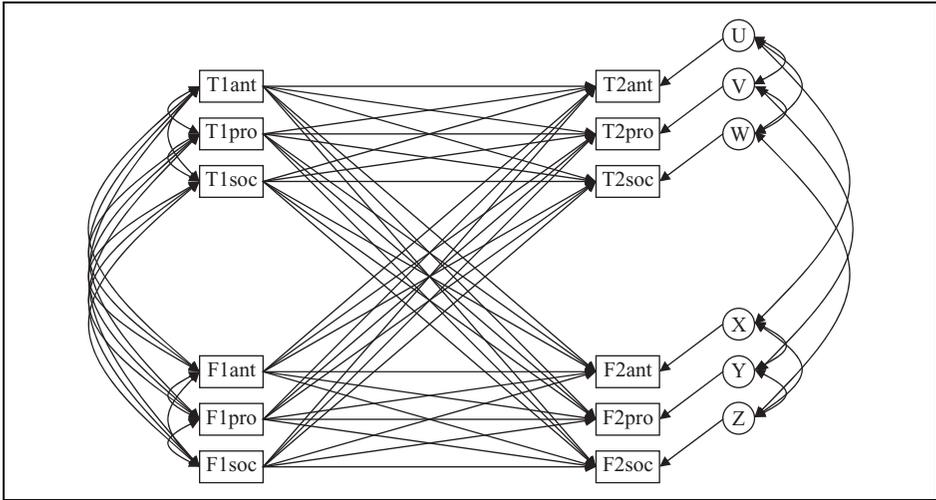


Figure 1. The tested longitudinal model. T1: target at Time 1, T2: target at Time 2, F1: friend at Time 1, F2: friend at Time 2; ant: antisocial behavior, pro: prosocial behavior, soc: (un)sociability.

Steglich, & Raub, 2010). They have tackled it with various approaches, including examining differences or correlations between targets and friends (e.g., Güroğlu, Haselager, van Lieshout, & Scholte, 2009; Güroğlu, van Lieshout, Haselager, & Scholte, 2007; Poulin et al., 1997; Urberg, Değirmencioglu, & Tolson, 1998), probability or regression analyses of target and friends characteristics (e.g., Engels et al., 2004; Rose, Swenson, & Carlson, 2004), correlations within a round robin design (e.g., Selfhout, Denissen, Branje, & Meeus, 2009), and simulation methods based on estimation of likelihoods (Knecht et al., 2010). In the current study we used a novel approach to examine friendship similarity that focused exclusively on selection effects.

Current study

The longitudinal design (see Figure 1) included target participants followed across a school transition from early adolescence (Time 1) into mid-adolescence (Time 2), and two *different* friends, one at each time point (Friend 1 and Friend 2, respectively). Our main goal was to examine the predictors of the behavioral characteristics of participants' new friends at Time 2 (Friend 2). Because our design included two different friends at Time 1 and Time 2, we could exclude explanations related to the stability of the friendships, such as socialization effects. Instead, we focused on two sets of predictors: (i) target adolescents' own behaviors in early adolescence; and (ii) the behaviors of their friends in early adolescence (Friend 1).

We used three aspects of social competence: prosocial behavior, antisocial behavior, and low peer sociability. Hartup and van Lieshout (1995) proposed that these aspects of social competence are three global behavioral orientations from childhood on. Further, they are closely related to peer interaction and the development of relationships in the

peer group (Hartup, 1996), as well as to various measures of psychosocial adjustment (e.g., Chen et al., 2002). Prosocial behavior is further indicative of peer acceptance (Newcomb, Bukowski, & Pattee, 1993), social understanding (Findlay, Girardi, & Coplan, 2006), and knowledge of friend-making strategies (Wentzel & Erdley, 1993), and plays a crucial role in the formation of friendships. The link between antisocial behavior and friendships is slightly more complex, given that there is considerable heterogeneity in profiles of aggressive youth. For example, highly popular adolescents also show high levels of antisocial behavior (Cillessen & Rose, 2005; Rodkin, Farmer, Pearl, & van Acker, 2000). Nevertheless, antisocial behavior is related to peer rejection, as well as to social interactions with friends, friendlessness, and to low quality of friendships (Cillessen, Jiang, West, & Laszkowski, 2005; Coie & Kupersmidt, 1983; Dishion, Andrews, & Crosby, 1995; Dodge, Price, Coie, & Christopoulos, 1990; Hektner, August, & Realmuto, 2000; Pederson, Vitaro, Barker, & Borge, 2007; Poulin, Dishion, & Haas, 1999). Overt aggression is related to having fewer friends and to lower friendship quality (Rose et al., 2004). Finally, low peer sociability, also termed as (un)sociability, represents low motivation for and interest in initiating social interactions (Asendorpf, 1990), and is related to peer group status as well as to number and quality of friendships (Bowker, Rubin, Burgess, & Booth-LaForce, 2006; Schneider, 1999). Further, both prosocial behavior and sociability distinguish children who form new friendships after the transition to middle school (Bowker et al., 2010).

The increase in school and peer group size is accompanied by a larger variance in behaviors that adolescents are exposed to, which is likely to influence behavioral norms and standards. Indeed, there is an increase in antisocial behavior, which is not perceived as negatively as in elementary school (Bukowski, Sippola, & Newcomb, 2000; Moffitt, 1993; Pederson et al., 2007; Seidman et al., 1994). Similarly, bullying increases after the transition to high school, possibly to enhance dominance in the new peer context (Pellegriani & Long, 2002). Prosocial behavior decreases after the transition to a large school, possibly due to lower familiarity and connectedness with the larger peer group and due to less value attached to it (Bukowski et al., 2000). Increases in prosocial behavior are further associated with decreasing peer status and popularity after the school transition (Bowker, Rubin, Buskirk-Cohen, Rose-Krasnor, & Booth-LaForce, 2010). The increased normativity of antisocial behavior and bullying and decreased normativity of prosocial behavior may result in higher consistency of friendships characterized by antisocial behavior and lower consistency of friendships characterized by prosocial behavior across the transition from elementary to secondary school.

Targets' behavior as a predictor: "Tell me who you are and I will tell you who your future friends will be"

Studies of friendship similarity suggest that friendships are also organized around the three dimensions of social competence. In a typological study of friendship dyads, slightly more than half of all friend pairs had similar behavioral profiles (Güroğlu et al., 2007). Children and their friends tend to be similar in aggression (Dishion et al., 1995; Werner & Crick, 2004), prosocial behavior (Güroğlu et al., 2007), and shyness, withdrawal, and sociability (Moskowitz, Schwartzman, & Ledingham, 1985; Rubin,

Wojslawowicz, Rose-Krasnor, Booth-LaForce, & Burgess, 2006). Thus, we expected significant positive cross-sectional associations between the social competence profiles of targets and their friends (Hypothesis 1a; see Figure 1 links T1–F1 and T2–F2).

Longitudinal studies yield converging evidence for stability of the three social competence dimensions of interest. A large body of research has examined the stability of antisocial behavior, aggression, delinquency, and externalizing behaviors (see, e.g., Dekovic, Buist, & Reitz, 2004; Moffitt, 1993; Olweus, 1997). Prosocial dispositions are relatively stable from about age 4–5 into adulthood (Eisenberg et al., 1999). Peer sociability assessed by peer nominations also exhibits moderate stability for a great majority of children and adolescents (Oh et al., 2008). Thus, we expected to find stability in target's social competence for all three constructs (Hypothesis 1b; see Figure 1 paths T1–T2).

Finally, we tested the predictive role of target's social competence in the competence profiles of future friends. This hypothesis was based on the idea that friends are similar (Hypothesis 1a) and that the target's behavior is stable (Hypothesis 1b). If (a) targets and friends are similar in mid-adolescence and (b) the targets' social competence is stable from early to mid-adolescence, it should be possible to predict post-transition friends' behaviors in mid-adolescence (behavior Friend 2) from targets' behavior in early adolescence, for each dimension of social competence (Hypothesis 1c; see Figure 1 paths T1–F2).

Targets' friends' behavior in early adolescence as predictor: "Tell me who your friends are and I'll tell you who your future friends will be"

Longitudinal studies have examined the role of selection and influence in friendship homophily. Most of these studies focused on homophily in aggression, externalizing, or antisocial behaviors, such as drug, alcohol, or cigarette use (Aseltine, 1995; Dishion et al., 1995; Engels et al., 1997, 2004; Ennett & Bauman, 1994; Urberg, Değirmencioglu, & Pilgrim, 1997). Although selection and influence both play an important role in friendship homophily, some studies show selection effects to be largely responsible (Engels et al., 1997; Ennett & Bauman, 1994). For example, Urberg et al. (1998) found that adolescents are as similar to their future friends as to their current friends. Poulin and Boivin (2000) found no effects of socialization, but only of selection in friendships of proactive aggressive boys. In a longitudinal study examining similarity of antisocial behavior in friendships, there was considerable consistency in adolescent boys' behavior and deviancy in friendship dyads, even though the target boys brought in different friends across measurement waves (Dishion, Eddy, Haas, Li, & Spracklen, 1997).

The occurrence of selection in friendship formation informed our hypothesis about the consistency of friendship characteristics. If (a) targets and friends are similar in early adolescence, (b) targets' behavior is stable from early to mid-adolescence, and (c) targets and friends are similar in mid-adolescence, we should be able to predict *new* post-transition friends' behaviors in mid-adolescence (behavior Friend 2) from pre-transition friends' behavior in early adolescence (behavior Friend 1) (Hypothesis 2; see Figure 1 paths F1–F2).

Gender differences

There are well-established gender differences in prosocial and antisocial behavior (e.g., Maccoby, 1986; 1990), as well as in friendship patterns (e.g., Eder & Hallinan, 1978). The behaviors that play a role in friendship formation and similarity may also differ for girls and boys based on their “reputational salience” (Hartup, 1996). Gender atypical behaviors may have greater implications for girls’ and boys’ social reputations. Antisocial behavior may be more salient for girls’ reputation, whereas withdrawn and unsociable behaviors may be more salient for boys. In other words, antisocial behavior and low peer sociability may play greater roles in the formation of girls’ and boys’ friendships, respectively. However, there is no clear evidence that longitudinal friendship patterns based on similarity differ by gender. In order to explore the role of gender in friendship formation, gender was tested as a moderator in all analyses.

Method

Participants

Participants were a subsample of the longitudinal participants of Waves 3 and 4 of the Nijmegen Longitudinal Study of Peer Relationships (see Cillessen, van IJzendoorn, van Lieshout, & Hartup, 1992; Haselager et al., 1998; Scholte, van Aken, & van Lieshout, 1997). Wave 1 focused on 231 boys from 54 kindergarten and 43 first-grade classrooms in the Nijmegen-Arnhem area of The Netherlands. In Waves 3 and 4, five and eight years after the initial data collection respectively, all classmates of the target boys were included in the study also, yielding large cross-sectional samples. Participants were 11 years old in Wave 3 (hereafter Time 1) and 14 years in Wave 4 (hereafter Time 2). Between Times 1 and 2, participants transitioned from elementary to secondary school (middle/junior high school). The transition took place approximately half way between the two waves for most participants. In both the elementary and the secondary school systems, students spend the majority of their time with classmates from their classroom. The transition thus mainly involved a change from a single-class system to a multiple-class system where participants had a rotation of teachers and classes. There were 540 students who participated in the study at both Time 1 and Time 2, including 165 of the original 231 boys, plus 375 new students who were classmates of the target boys in Time 1 and 2. These 540 students (65% boys) are the participants for this study. There are more boys than girls because the longitudinal study initially included boys only.

Ethnic background information was not collected at Time 1. According to the 1990–1991 school records for this area of The Netherlands, 89.5% of the elementary school students were of Dutch/Caucasian origin. Students with an ethnic minority origin were from Suriname (.8%), the Dutch Antilles (.1%), Moluccas (1.2%), Turkey (1.3%), Morocco (1.2%), or another country (5.9%). At Time 2, 95% of the participants were of Dutch/Caucasian origin; 5% had an ethnic-minority background: 1.5% from Suriname, the Dutch Antilles, or the Molucca Islands, 2% from Mediterranean countries, and 1.5% from other countries.

At Time 2 parental educational background was assessed. The majority of the parents were high school graduates (68.4% of fathers and 79.6% of mothers); 25.7% of fathers

and 12.7% of mothers were college graduates. In view of the high number of participating schools, the samples from both waves were representative of the Dutch school population for this geographic region.

To assess friendship, participants were asked to name three peers in their class who were their friend. A reciprocal nomination for this question is a mutual friendship. Using this definition, 334 of the 540 participants had at least one mutual friend at both times. Because the majority of all friendships (96% at Time 1 and 95% at Time 2) were same-sex, other-sex friendships were excluded. Twelve of the 334 participants did not have at least one same-sex friend at each wave. Therefore, the final list of target participants contained 322 students (40% girls) with at least one same-sex friendship at each wave.

For each of these 322 participants, one different friend needed to be selected for each wave. At Time 1, 41% of the participants had three, 41% had two, and 18% had one same-sex friend. At Time 2 these percentages were 48%, 31%, and 21%, respectively. In order not to violate the assumption of independence of sampling units, membership of participants in multiple dyads was not allowed. That is, all participants and their friends could appear in only one dyad, either as target or as friend. If this criterion is met, the dyadic dataset is *unique*. A unique sample is a list of *target* participants and two friends, *Friend 1* from Time 1 and *Friend 2* from Time 2, none of whom occur in the list more than once. It is important to point out that the samples of friends at Times 1 and 2 were mostly non-overlapping, because the target participants changed schools in between. Nevertheless, due to some overlap of classmates over time or because there was more than one target child in a classroom at either of the two time points, the list of 322 targets and all their friends (maximum of three per person) included violations of the assumption of independence of sampling units. These occurred when a target was named as a friend by another target, when two targets had the same friend, or when a target had the same friend over time (in 12% of the cases).

A computer program was written to realize the specific sample requirements for this study. The program had two functions: the first function generated unique random subsamples of dyads from the total sample. The program randomly selected one friend per participant per wave and randomly selected one friendship if it occurred more than once. The second function of the computer program excluded participants with stable friendships (i.e., the same friend in two waves). The results reported in this paper are based on 10 random subsamples that were created in this way. These subsamples ranged in size from 195 to 205 target participants (out of 322) with two friends. On average across subsamples, 59% of the targets were boys.

Procedure

At Times 1 and 2, the 231 longitudinal target boys of the original study were contacted and parental permission for participation was obtained. In order to collect data in their classrooms, the boys' schools and the parents of their classmates were contacted, informed about the study, and asked for consent. Trained research assistants collected the data in the classrooms. After a brief introduction, students were reminded that their participation was voluntary and guaranteed confidentiality and anonymity. At both

times, participants completed a sociometric questionnaire and several self-report measures in approximately an hour.

Measures of social competence

The three global aspects of social competence, antisocial behavior, prosocial behavior, and low peer-sociability, were measured with eight peer nominations that were part of the sociometric instrument. The classroom was the reference group for the nominations. At Time 1, students could name three classmates for each item: cross-sex nominations were allowed, self-nominations were not. At Time 2, the maximum number of nominations was five. In order to obtain comparable scores for both measurements, only the first three nominations were used at Time 2. Parental consent was obtained from all students in the participating classrooms. Thus, students were provided a roster with the names of all their classmates. The number of nominations received was counted for each question. Binomial probability scores were computed for each item to correct for class size ((Newcomb, Bukowski, & Pattee, 1983).

A principal components factor analysis with oblique rotation was then conducted on these scores for the eight items. This analysis was conducted per wave using all available cross-sectional participants. Three factors were found at both times, explaining 68% and 64% of the variance at Times 1 and 2, respectively. The loadings of the items on the factors they defined were higher than .64 at Time 1 and higher than .72 at Time 2. The three factors measured *Antisocial behavior* (three items: starts fights, disturbs, bullies other students at Time 1, mean inter-item correlation = .75; becomes angry quickly, disturbs, bullies other students at Time 2, mean inter-item correlation = .47); *Prosocial behavior* (two items; offers help, is cooperative at Time 1, mean inter-item correlation = .56; likes to work with others, is considerate at Time 2, mean inter-item correlation = .24); and *Low peer-sociability* (three items: is shy, is being bullied, asks for help at Time 1, mean inter-item correlation = .20; is shy, is being bullied, is withdrawn at Time 2, mean inter-item correlation = .40). Scale scores were computed by averaging the standardized probability scores for the items in each scale. The scores were standardized per wave in the entire cross-sectional sample of each wave.

Results

Tested model

Figure 1 shows the model that was tested. Because the three social competence factors were moderately correlated, we included, for each path, all possible links between the factors (from antisocial to prosocial and low sociability, from prosocial to antisocial and low sociability, and from low sociability to prosocial and antisocial). To allow for peer influence effects, the paths from Friend 1 to the target at Time 2 were included (see Table 1). At time 2, the disturbances of each social competence factor were correlated between target and friend (see Table 2).

Table 1. Descriptive statistics and significance test of the 10 estimates of each path coefficient in the final model

| | Min | Max | M | SE | 90% CI | | t(9) | p |
|--|------|------|------|-----|--------|-------|-------|-----|
| | | | | | Lower | Upper | | |
| T1 → T2 (Stability of target behaviors; Hypothesis 1b) | | | | | | | | |
| T1ant → T2ant | .17 | .25 | .20 | .06 | .09 | .32 | 3.26 | .01 |
| T1pro → T2pro | .03 | .11 | .06 | .07 | -.07 | .20 | .87 | .41 |
| T1soc → T2soc | .08 | .21 | .14 | .07 | .01 | .27 | 1.92 | .09 |
| T1ant → T2pro | .00 | .08 | .03 | .06 | -.08 | .13 | .48 | .64 |
| T1ant → T2soc | -.20 | -.11 | -.15 | .06 | -.26 | -.04 | -2.47 | .04 |
| T1pro → T2ant | -.06 | .04 | -.01 | .08 | -.16 | .13 | -.17 | .87 |
| T1pro → T2soc | -.10 | .06 | -.03 | .08 | -.17 | .11 | -.45 | .66 |
| T1soc → T2ant | -.17 | -.06 | -.12 | .08 | -.26 | .02 | -1.55 | .16 |
| T1soc → T2pro | -.04 | .01 | -.02 | .07 | -.15 | .11 | -.27 | .79 |
| T1 → F2 (Target behaviors at Time 1 predicting friend behaviors at Time 2; Hypothesis 1c) | | | | | | | | |
| T1ant → F2ant | -.02 | .12 | .06 | .07 | -.06 | .19 | .94 | .37 |
| T1ant → F2pro | -.02 | .08 | .03 | .07 | -.09 | .16 | .52 | .62 |
| T1ant → F2soc | -.09 | .01 | -.05 | .06 | -.15 | .06 | -.79 | .45 |
| T1pro → F2ant | .02 | .13 | .08 | .08 | -.07 | .23 | .94 | .37 |
| T1pro → F2pro | -.10 | .09 | -.01 | .08 | -.16 | .14 | -.10 | .92 |
| T1pro → F2soc | -.09 | .08 | -.02 | .08 | -.17 | .12 | -.27 | .80 |
| T1soc → F2ant | -.15 | -.04 | -.08 | .08 | -.23 | .06 | -1.05 | .32 |
| T1soc → F2pro | -.02 | .10 | .02 | .08 | -.12 | .17 | .30 | .77 |
| T1soc → F2soc | .13 | .21 | .18 | .07 | .04 | .31 | 2.44 | .04 |
| F1 → F2 (Friend behaviors at Time 1 predicting friend behaviors at Time 2; Hypothesis 2) | | | | | | | | |
| F1ant → F2ant | -.04 | .17 | .05 | .07 | -.07 | .17 | .72 | .49 |
| F1ant → F2pro | -.04 | .08 | .01 | .08 | -.13 | .15 | .13 | .90 |
| F1ant → F2soc | -.21 | -.03 | -.08 | .06 | -.19 | .03 | -1.36 | .21 |
| F1pro → F2ant | -.05 | .10 | .01 | .08 | -.13 | .15 | .14 | .89 |
| F1pro → F2pro | -.17 | .06 | -.01 | .07 | -.14 | .13 | -.12 | .91 |
| F1pro → F2soc | -.10 | .02 | -.05 | .07 | -.19 | .08 | -.69 | .51 |
| F1soc → F2ant | -.10 | .07 | .00 | .08 | -.15 | .15 | -.03 | .98 |
| F1soc → F2pro | -.03 | .15 | .04 | .09 | -.12 | .20 | .47 | .65 |
| F1soc → F2soc | .11 | .20 | .16 | .08 | .02 | .30 | 2.03 | .07 |
| F1 → T2 (Friend behaviors at Time 1 predicting target behaviors at Time 2; Peer influence effects) | | | | | | | | |
| F1ant → T2ant | -.04 | .12 | .03 | .06 | -.09 | .15 | .49 | .63 |
| F1ant → T2pro | -.07 | .05 | -.03 | .06 | -.14 | .07 | -.55 | .60 |
| F1ant → T2soc | -.18 | .02 | -.06 | .06 | -.16 | .05 | -.96 | .36 |
| F1pro → T2ant | -.01 | .10 | .04 | .08 | -.10 | .18 | .54 | .60 |
| F1pro → T2pro | -.10 | .04 | -.01 | .07 | -.14 | .11 | -.21 | .84 |
| F1pro → T2soc | -.07 | .05 | -.03 | .07 | -.16 | .11 | -.36 | .73 |
| F1soc → T2ant | -.15 | .08 | -.02 | .08 | -.17 | .12 | -.29 | .78 |
| F1soc → T2pro | -.01 | .17 | .06 | .07 | -.07 | .20 | .86 | .41 |
| F1soc → T2soc | .06 | .19 | .12 | .08 | -.02 | .26 | 1.57 | .15 |

Table 2. Descriptive statistics and significance test of the 10 estimates of each correlation coefficient in the final model

| | Min | Max | M | SE | 90% CI | | t(9) | p |
|---|------|------|------|-----|--------|-------|-------|-----|
| | | | | | Lower | Upper | | |
| T1 ↔ T1 (Correlations between target behaviors at Time 1) | | | | | | | | |
| T1ant ↔ T1pro | -.39 | -.21 | -.27 | .09 | -.43 | -.12 | -3.18 | .01 |
| T1ant ↔ T1soc | -.04 | .12 | .04 | .06 | -.07 | .15 | .72 | .49 |
| T1pro ↔ T1soc | -.27 | -.15 | -.24 | .07 | -.37 | -.10 | -3.23 | .01 |
| F1 ↔ F1 (Correlations between friend behaviors at Time 1) | | | | | | | | |
| F1ant ↔ F1pro | -.32 | -.14 | -.26 | .09 | -.42 | -.10 | -2.99 | .02 |
| F1ant ↔ F1soc | .16 | .31 | .26 | .09 | .11 | .42 | 3.08 | .01 |
| F1pro ↔ F1soc | -.24 | -.06 | -.19 | .07 | -.32 | -.05 | -2.58 | .03 |
| T2 ↔ T2 (Correlations between target behaviors at Time 2) | | | | | | | | |
| T2ant ↔ T2pro | -.17 | -.05 | -.10 | .06 | -.21 | .01 | -1.66 | .13 |
| T2ant ↔ T2soc | -.02 | .14 | .07 | .06 | -.04 | .17 | 1.13 | .29 |
| T2pro ↔ T2soc | -.12 | .00 | -.05 | .05 | -.15 | .05 | -.93 | .38 |
| F2 ↔ F2 (Correlations between friend behaviors at Time 2) | | | | | | | | |
| F2ant ↔ F2pro | -.12 | .04 | -.07 | .07 | -.20 | .05 | -1.07 | .31 |
| F2ant ↔ F2soc | -.14 | -.02 | -.07 | .06 | -.18 | .04 | -1.20 | .26 |
| F2pro ↔ F2soc | -.21 | -.06 | -.14 | .06 | -.26 | -.03 | -2.22 | .05 |
| T1 ↔ F1 (Correlations between target and friend behaviors at Time 1; Hypothesis 1a) | | | | | | | | |
| T1ant ↔ F1ant | .26 | .50 | .39 | .10 | .20 | .57 | 3.83 | .00 |
| T1ant ↔ F1pro | -.16 | .04 | -.04 | .08 | -.19 | .11 | -.51 | .62 |
| T1ant ↔ F1soc | -.09 | .01 | -.04 | .08 | -.19 | .11 | -.46 | .66 |
| T1pro ↔ F1ant | -.11 | .02 | -.04 | .08 | -.19 | .11 | -.49 | .64 |
| T1pro ↔ F1pro | .08 | .19 | .15 | .07 | .02 | .28 | 2.06 | .07 |
| T1pro ↔ F1soc | -.10 | .07 | .00 | .07 | -.13 | .13 | .03 | .97 |
| T1soc ↔ F1ant | .01 | .20 | .09 | .09 | -.06 | .25 | 1.09 | .30 |
| T1soc ↔ F1pro | -.20 | -.08 | -.13 | .08 | -.27 | .01 | -1.74 | .12 |
| T1soc ↔ F1soc | .20 | .32 | .26 | .07 | .12 | .39 | 3.49 | .01 |
| T2 ↔ F2 (Correlations between target and friend behaviors at Time 2; Hypothesis 1a) | | | | | | | | |
| T2ant ↔ F2ant | .42 | .59 | .53 | .09 | .37 | .70 | 5.99 | .00 |
| T2pro ↔ F2pro | .32 | .42 | .36 | .08 | .22 | .50 | 4.70 | .00 |
| T2soc ↔ F2soc | .46 | .66 | .54 | .08 | .39 | .70 | 6.45 | .00 |

Preliminary analyses

Table 3 shows the means and standard deviations of the study variables at both times for the target list of 322 participants. Boys scored higher than girls on antisocial behavior and bullying, whereas girls scored higher than boys on prosocial behavior. Table 4 shows the correlations among the study variables by gender. All stability coefficients were significant, except for antisocial behavior for girls and prosocial behavior for girls and boys. Antisocial behavior and low sociability correlated negatively with prosocial behavior at Time 1. At Time 2 antisocial behavior correlated negatively with low sociability for boys. The average number of friends did not differ significantly by gender at either time point. At Time 1, girls had an

Table 3. Means and standard deviations for antisocial behavior, prosocial behavior, and (un)sociability for girl and boy target participants ($N = 322$)

| | Time 1 | | $F(1, 321)$ | Time 2 | | $F(1, 321)$ |
|-----------------|------------|------------|-------------|------------|------------|-------------|
| | Girls | Boys | | Girls | Boys | |
| Antisocial | -.45 (.64) | .41 (1.10) | 63.54** | -.36 (.86) | .15 (1.03) | 21.45** |
| Prosocial | .38 (.97) | .20 (.91) | 2.83 | .47 (.98) | .01 (.92) | 18.01** |
| (un)Sociability | -.03 (.89) | -.32 (.91) | 8.29* | -.08 (.93) | -.19 (.90) | 1.09 |

Note. * $p < .01$; ** $p < .001$. Girls: $N = 130$; boys: $N = 192$. Standard deviations are between parentheses.

Table 4. Correlations among antisocial behavior, prosocial behavior and (un)sociability for target participants ($N = 322$)

| | 1. | 2. | 3. | 4. | 5. | 6. |
|----------|------------|--------|-------------|--------------|------------|--------------|
| 1. T1ant | | -.24** | -.01 | <u>.35**</u> | .02 | -.24** |
| 2. T1pro | -.22* | | -.16* | -.13 | .10 | -.03 |
| 3. T1soc | .18* | -.35** | | -.01 | -.04 | .21** |
| 4. T2ant | .03 | .07 | -.14 | | -.16 | -.27** |
| 5. T2pro | -.02 | .11 | .01 | -.18* | | -.03 |
| 6. T2soc | -.28** | -.10 | .18* | <u>.00</u> | -.13 | |

Note. * $p < .05$; ** $p < .001$. T1: target at Time 1, T2: target at Time 2; ant: antisocial behavior, pro: prosocial behavior, soc: (un)sociability. Correlations below the diagonal are for girls; above the diagonal for boys. Stability coefficients are in bold. Correlations that are significantly different by gender are underlined.

average of 1.92 friends ($SD = .76$) and boys 1.74 friends ($SD = .74$). At Time 2, girls had 1.86 friends ($SD = .83$) and boys 1.76 friends ($SD = .75$).

Structural equations modeling

The model of Figure 1 was tested for each of the 10 random subsamples with AMOS 5.0 software (Arbuckle, 2003). To test for moderation by gender, the model was first run as a two-group model with gender as the grouping variable, comparing completely restricted and unrestricted models. The completely restricted model set all coefficients equal between genders, whereas the unrestricted model allowed all coefficients to differ by gender. A significant difference between these models indicated moderation by gender in at least one path. Follow-up analyses were then needed to determine in which paths the effect resides. Below, the results of the analyses are described first, and then the final results are summarized per research question. Figure 2 shows the final model with the average standardized estimates for the paths that were significant.

Structural equations modeling results. The completely restricted and unrestricted models did not differ in eight of the ten subsamples ($\Delta\chi^2(60) \leq 74.90$, $p \geq .09$ in eight subsamples, $\Delta\chi^2(60) \geq 80.04$, $p \leq .04$ in two subsamples). The completely restricted model yielded good fit across the 10 subsamples: mean comparative fit index (CFI) .92 (range

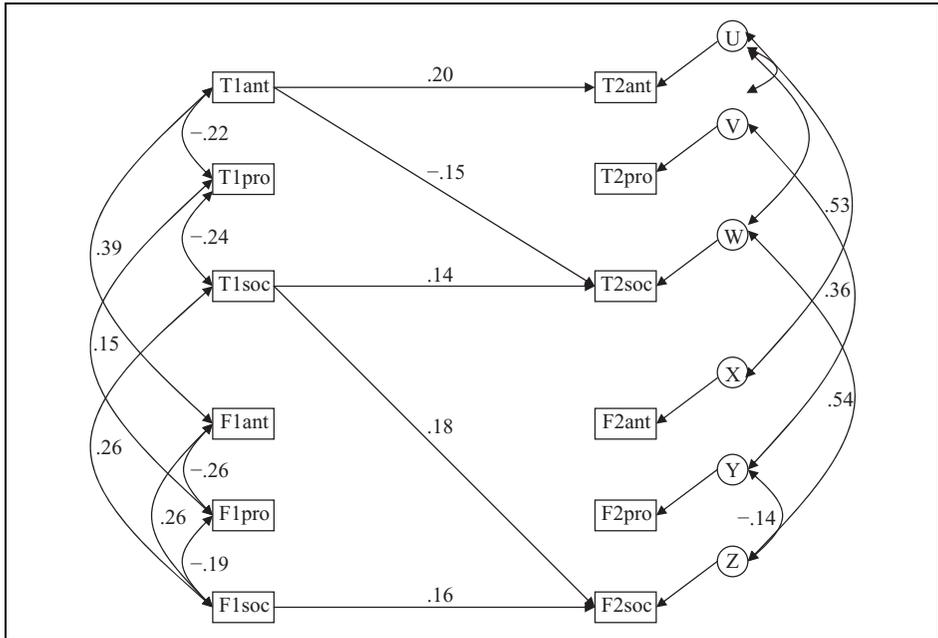


Figure 2. The final model with the average standardized estimates for the paths that were significant. T1: target at Time 1, T2: target at Time 2, F1: friend at Time 1, F2: friend at Time 2; ant: antisocial behavior, pro: prosocial behavior, soc: (un)sociability.

.86–.97), mean parsimonious comparative fit index (PCFI) .50 (range .47–.53), and mean root mean square error of approximation (RMSEA) .04 (range .02–.05). We concluded that there was no moderation by gender.

The standardized path coefficients and corresponding standard errors were averaged across the 10 subsamples to yield one final estimate and standard error for each path in the restricted model. A *t*-test was then conducted using the average path coefficient and standard error to determine if the path differed from zero. Because the use of the average standard error yields a conservative test, the more lenient significance level of .10 was chosen. The complete results across the 10 replications are presented in Table 1 (results for path coefficients) and Table 2 (results for correlation coefficients).

Test of Hypothesis 1

Hypothesis 1a specified significant cross-sectional associations between target and friend behaviors. To test this hypothesis, average path coefficients were tested against zero for all paths T1–F1 and T2–F2 using *t*-tests (see Table 2). This hypothesis was confirmed. All cross-sectional associations of the same behavior between target and friend were significant (at Time 1 and Time 2, respectively: $r = .39$ and $.53$ for antisocial behavior; $r = .15$ and $.36$ for prosocial behavior, and $r = .26$ and $.54$ for unsociability). Similar *t*-tests tested the average path coefficients for all paths T1–T2 against zero (see

Table 1). Partly confirming Hypothesis 1b, the stabilities of the behavior of the target from Time 1 to Time 2 were significant for antisocial behavior ($\beta = .20$) and unsociability ($\beta = .14$). Finally, all average path coefficients for paths T1–F2 were tested against zero for Hypothesis 1c (see Table 1). This hypothesis was confirmed for peer-reported unsociability, where the behavior of the post-transition friend at Time 2 could be predicted from the behavior of the target at Time 1 ($\beta = .18$).

Test of Hypothesis 2

Hypothesis 2 referred to the paths F1–F2, testing for links between social competence scores of pre- and post-transition friends. This hypothesis was supported for peer-reported unsociability. Low sociable behavior of the post-transition friend at Time 2 was directly predicted from low levels of sociable behavior of the pre-transition friend at Time 1 ($\beta = .16$).

Discussion

The goal of this study was to predict the social competence behaviors of adolescents' new friends from their own earlier behaviors and the behaviors of their pre-transition friends. Of the three dimensions of social competence, we found evidence for consistency in levels of sociability. Low sociability of early adolescents and their friends predicted low sociability of their new friends. In other words, adolescent friendships across a school transition are determined to a large extent by levels of sociability in peer group. This finding emphasizes the role of selection for similar levels of peer sociability in adolescent friendships.

Consistent with previous research on friendship similarity, we also found cross-sectional associations between targets and their friends for all three social competence dimensions. Furthermore, antisocial behavior and low peer sociability were relatively stable from age 11 to age 14. Combining the stability of behavior with the cross-sectional similarity of friendships at both ages yielded indirect evidence for consistency in friendships based on antisocial behavior.

Friendship patterns based on social competence profiles

The social competence profiles of adolescents' friends showed stronger consistency in terms of sociability and antisocial behavior than in prosocial behavior. The predictive power of low sociability across a school transition of three years is striking, but perhaps not surprising, given previous evidence for the role of sociability in peer relationships (Bowker et al., 2006, 2010). Shy and withdrawn behavior becomes increasingly salient with development and is more strongly correlated with rejection at older ages than at younger ages (Rubin, 1993). The friends of withdrawn children are more shy and withdrawn than the friends of children who are not shy or withdrawn (Rubin et al., 2006). In this respect, our findings support the "limited shopping hypothesis" that adolescents who lack social skills have limited opportunities for forming friendships due to social rejection (Poulin, & Boivin, 2000). Shy and withdrawn children may be bound to form

friendships with others who are similarly marginalized by the peer group, resulting in high consistency in withdrawn behavior between friends. When these adolescents enter a new context following a school transition, they once again form friendships with similar others who also display low levels of sociability. Clearly, adolescents with low sociability repeat their previous affiliation with similar peers when they form new friendships.

A similar reasoning related to the lack of opportunities for friendship formation might apply to the role of antisocial behavior in friendship patterns. Strong stability of antisocial behavior is commonly reported (Loeber, 1982; Scholte et al., 2007). Friendship similarity and selection effects in friendship formation are generally the strongest for externalizing behaviors (Deptula & Cohen, 2004; Dishion, Andrews, & Crosby, 1995; Dishion et al., 1997). In the current study, earlier antisocial behavior of targets or their pre-transition friends did not directly predict antisocial behavior in new friends. This may be due to changes in peer perceptions of behavior from early to mid-adolescence. Antisocial behavior becomes increasingly accepted and associated with status and power in mid-adolescence (Cillessen & Mayeux, 2004). Compared to early adolescents, mid-adolescents might be less disturbed by antisocial behavior and more interested in being friends with antisocial peers. This change in approval of antisocial behavior may explain the lack of direct links from targets and pre-transition friends in early adolescence to their new post-transition friends for antisocial behavior.

Our hypothesis related to the stability of prosocial behavior was not confirmed. Previous research suggested a decreasing value attached to prosocial behavior (Bukowski et al., 2000). As a result, there may be less stability of friendships based on prosocial behavior across a school transition. Another explanation may be a ceiling effect in the current sample for prosocial behavior. All target participants had at least one friendship at both times. Prosocial behavior is linked to being liked and having friends. Thus, the target participants were slightly more prosocial than average. However, the variance in our measures of prosocial behavior was still high and not restricted (see Table 3). Thus, despite slightly higher means, a ceiling effect is likely not the explanation for the lack of stability of target prosocial behavior. Another reason may be the differences in the prosocial items between both assessments. The items were similar, but not exactly identical. This may also explain the lower stability of prosocial behavior and the null findings for this measure.

The lack of consistency for prosocial behavior in friendship formation across school transitions might also suggest that there is considerable change in peer status and friendships following a change of context (Hardy et al., 2002). This further suggests that some adolescents might use the changing peer context as an opportunity to form friendships with peers of varying behavioral profiles. The degree to which adolescents use this opportunity may be related to other individual characteristics and development. For example, in one study, ego development was related to growth in popularity and peer functioning (Marsh, Allen, Ho, Porter, & McFarland, 2006). Although all our participants changed schools between the ages of 11 and 14, other cognitive, emotional, and social changes, typical for adolescence, occurred simultaneously. For example, cognitive changes related to brain development may allow adolescents to display increasing levels of prosocial behavior due to better perspective-taking skills (Güroğlu, van den Bos,

Rombouts, & Crone, 2011). Individual differences in such developmental changes need to be examined further to fully understand the stability and change in adolescent relationships in this important period of vulnerability and opportunities.

Gender differences

Based on gender differences in conceptions and characteristics of friendships during adolescence (Berndt, 1982), gender was included in our analyses. The results did not yield any gender differences, suggesting that longitudinal processes that play a role in behavioral characteristics of friendship are the same for girls and boys across adolescence. Girls' friendships are more often characterized by high levels of prosocial behavior and boys' friendships by antisocial behavior (Güroğlu et al., 2007). However, our results showed that friends' similarity in antisocial and prosocial behavior did not differ by gender when correlational measures were used instead of discrepancy measures. In a similar manner, the longitudinal links between adolescents' friends' behavior did not differ for girls and boys. These findings indicate gender similarity in the friendship formation patterns across adolescence.

Conclusions, limitations, and future directions

This study examined the role of early adolescents' and their friends' behaviors in predicting the nature of future friendships. Previous longitudinal research on friendships focused mostly on stability of existing friendships; we examined *newly formed* friendships in mid-adolescence. We found consistency in low sociability in friendships across the three years from early to mid-adolescence. "Tell me who you are and I'll tell you who your future friends will be" and "Tell me who your friends are and I'll tell you who your future friends will be": our results support these versions of the saying for sociability. Although our effects were small to moderate, we believe that the analyses conducted here offer a relatively conservative test of our hypotheses.

In contrast to our expectations, we did not find support for the direct link between pre- and post-transition friends' prosocial and antisocial behaviors. Thus, social competence profiles of future friends are not consistently predictable by earlier friends. On the one hand, as mentioned, changes in the way certain behaviors are perceived across adolescence might be playing a role. On the other hand, a school transition might be seen as an opportunity to socialize with different types of peers. For example, for adolescents with antisocial friends such a transition might be the window of opportunity to form friendships that possibly lead to more positive socialization processes.

Our findings have several implications. Firstly, consistency in friendship characteristics across a school transition supports selection effects in friendship similarity. A small percentage of target participants (9%) were classmates of their post-transition friends before the transition, but were not friends at the earlier time point. Although we cannot rule out socialization effects for them, this is not likely to have strongly influenced our findings in the entire sample. Further, although our design did not allow a direct test of socialization effects, it did include peer influence effects from friend at Time 1 to target at Time 2. This effect was never significant in our models, supporting

the view that target characteristics and selection effects may outweigh socialization effects in determining behavioral similarity of friends.

Our findings focus only on same-sex friendships, as more than 95% of friendships in adolescence were same-sex. Future research should also examine the similarity of cross-sex friends (in non-romantic relationships) and the stability of friendship characteristics in these relationships. As complementarity of partners plays an important role in heterosexual romantic relationships (Pilkington, Tesser, & Stephens, 1991), similarity in cross-sex friendships might also differ from same-sex friendships.

Secondly, relatively little is known about the continuities and discontinuities in friendships across the life span (Hartup & Stevens, 1997). A previous investigation of friendship types shows that children and adolescents have distinct roles in different types of friendships (Güroğlu et al., 2007). Consistency in friends' characteristics across different friendships might be related to the stability of the role of the target in these friendships. Further, there may be individual differences in consistency across friendships such that certain types of friendships show higher consistency than others. This perspective on stability in relationships might also provide us with mechanisms to better understand homophily in friendships.

Thirdly, the consistency of friends' characteristics or roles as friends might indicate consistency in other dyadic interactions, such as parent-child or romantic relationships. Lifespan perspectives on development across relationships have been supported mainly by the attachment literature showing long-term effects of initial attachments (see, e.g., Levitt, 1991). Beyond attachment, parenting practices are related to adolescent friendship characteristics, such as delinquent and prosocial behavior, even after accounting for selection effects (Knoester, Haynie, & Stephens, 2006). Sibling relationships are related to friendships as well (Updegraff, McHale, & Crouter, 2002). Future research should determine the extent of these patterns (Dunn, 1993).

Finally, individual behavioral patterns in multiple friendships may be related to various adjustment outcomes. Stability of roles in different friendships may also indicate stability across multiple friendships at a single time point, which might be related to intensified adjustment outcomes. A better understanding of the links between friendships and adjustment requires not only the longitudinal examination of friendship stabilities over time, but cross-sectional consistency across multiple friendships as well.

The measures of this study were peer-reports of behavior assessing global reputations of social competence. Future research should include observations of actual interactions between friends. Further evidence for the consistency of friends' antisocial and prosocial behaviors may be found with observational data that are not influenced by peers' judgments. Moreover, other friendship characteristics, such as intimacy, trust, support, and conflict, should be examined. It is also relevant to examine these qualities in relation to behaviors and adjustment. Friendship quality and friendship similarity may differ in their relevance at different ages due to life transitions and changing developmental tasks (Hartup & Stevens, 1997; Sherman, de Vries, & Lansford, 2000). Studies that examine the continuity and stability of friendships using our paradigm at younger and older ages can make a contribution to understanding the importance of friendships across a wider developmental period.

The target participants of this study had at least one friendship at both measurement points. During the three intermediate years they moved from elementary to secondary school they formed new friendships in their classroom (i.e., they had “different-stable” friendships). In other words, we studied adolescents who were able to form friendships on both occasions. They may differ in their social skills from others who were not able to do so. Indeed, our target participants were somewhat more prosocial and less antisocial and aggressive than average. This has also been found for children with stable friendships. For example, Bowker et al. (2006) found no differences between the behaviors of children who had different friendships (different-stable) or the same friendship (same-stable) over a one-year period in middle childhood. Given the design of our study, the consistency in the behavior of friends cannot have resulted from the socialization effects that may take place in same-stable friendships.

This study presented a unique design with improvements over the usual friendship similarity research. We used a novel approach to study dyadic data by randomly sampling dyads and controlling for violations of the assumption of independence of units in each sample. By selecting a *new* friend after a school transition (i.e., in a new social context), we were able to examine selection effects in friendships in isolation. Moreover, due to the large sample size of our longitudinal study, we were able to identify different friendships across a school transition, a crucial event influencing adolescent development. Our findings show consistency and room for variability in friendship similarity, and also provide insight in the significance of major transitions that influence adolescent social development.

Acknowledgements

The authors would like to thank Pierre Souren for his support on the statistical analyses and are grateful to the students, parents, and teachers who made this research possible.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

References

- About, F. E., & Mendelson, M. J. (1996). Determinants of friendship selection and quality: Developmental perspectives. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 87-112). New York: Cambridge University Press.
- Aikins, J. W., Bierman, K. L., & Parker, J. G. (2005). Navigating the transition to junior high school: The influence of pre-transition friendship and self-system characteristics. *Social Development, 14*, 42-60.
- Arbuckle, J. L. (2003). *Amos 5.0 User's Guide*. Chicago, IL: SmallWaters Corporation.
- Aseltine, R. H. (1995). A reconsideration of parental and peer influences on adolescent deviance. *Journal of Health and Social Behavior, 36*, 103-121.
- Asendorpf, J. B. (1990). Beyond social withdrawal: Shyness, unsociability, and peer avoidance. *Human Development, 33*, 250-259.

- Asher, S. R., Parker, J. G., & Walker, D. L. (1996). Distinguishing friendship from acceptance: Implications for intervention and assessment. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 366-406). New York: Cambridge University Press.
- Berndt, T. J. (1982). The features and effects of friendship in early adolescence. *Child Development, 53*, 1447-1460.
- Bowker, J. C., Fredstrom, B. K., Rubin, K. H., Rose-Krasnor, L., Booth-LaForce, C., & Laursen, B. (2010). Distinguishing children who form new best-friendships from those who do not. *Journal of Social and Personal Relationships, 27*, 707-725.
- Bowker, J. C., Rubin, K. H., Buskirk-Cohen, A., Rose-Krasnor, L., & Booth-LaForce, C. (2010). Behavioral changes predicting temporal changes in perceived popular status. *Journal of Applied Developmental Psychology, 31*, 126-133.
- Bowker, J. C. W., Rubin, K. H., Burgess, K. B., & Booth-LaForce, C. (2006). Behavioral characteristics associated with stable and fluid best friendship patterns in middle childhood. *Merrill-Palmer Quarterly, 52*, 671-693.
- Brown, B. B. (1990). Peer groups and peer cultures. In S. S. Feldman & G. R. Elliot (Eds.), *At the threshold: The developing adolescent* (pp. 171-196). Cambridge, MA: Harvard University Press.
- Bukowski, W. M., & Newcomb, A. F. (1984). Stability and determinants of sociometric status and friendship choice: A longitudinal perspective. *Developmental Psychology, 20*, 941-952.
- Bukowski, W. M., Pizzamiglio, M. T., Newcomb, A. F., & Hoza, B. (1996). Popularity as an affordance of friendship: The link between group and dyadic experience. *Social Development, 5*, 189-202.
- Bukowski, W. M., Sippola, L., & Newcomb, A. F. (2000). Variations in patterns of attraction to same- and other-sex peers during early adolescence. *Developmental Psychology, 36*, 147-154.
- Chen, X., Liu, M., Rubin, K., Cen, G., Gao, X., & Li, D. (2002). Sociability and prosocial orientation as predictors of youth adjustment: A seven-year longitudinal study in a Chinese sample. *International Journal of Behavioral Development, 26*, 128-136.
- Cillessen, A. H. N., Jiang, X. L., West, T. V., & Laszkowski, D. K. (2005). Predictors of dyadic friendship quality in adolescence. *International Journal of Behavioral Development, 29*, 165-172.
- Cillessen, A. H. N., & Mayeux, L. (2004). From censure to reinforcement: Developmental changes in the association between aggression and social status. *Child Development, 75*, 147-163.
- Cillessen, A. H. N., & Rose, A. J. (2005). Understanding popularity in the peer system. *Current Directions in Psychological Science, 14*, 102-105.
- Cillessen, A. H. N., van IJzendoorn, H. W., van Lieshout, C. F. M., & Hartup, W. W. (1992). Heterogeneity among peer rejected boys: Subtypes and stabilities. *Child Development, 63*, 893-905.
- Coie, J. D., & Kupersmidt, J. B. (1983). A behavioral analysis of emerging social status in boys' groups. *Child Development, 54*, 1400-1416.
- Değirmencioglu, S. M., Urberg, K. A., Tolson, J. M., & Richard, P. (1998). Adolescent friendship networks: Continuity and change over the school year. *Merrill-Palmer Quarterly, 44*, 313-337.
- Dekovic, M., Buist, K. L., & Reitz, E. (2004). Stability and changes in problem behavior during adolescence: Latent growth analysis. *Journal of Youth and Adolescence, 33*, 1-12.

- Deptula, D. P., & Cohen, R. (2004). Aggressive, rejected, and delinquent children and adolescents: A comparison of their friendships. *Aggression and Violent Behavior, 9*, 75-104.
- Dishion, T. J., Andrews, D. W., & Crosby, L. (1995). Antisocial boys and their friends in early adolescence: Relationship characteristics, quality, and interactional process. *Child Development, 66*, 139-151.
- Dishion, T. J., Eddy, J. M., Haas, E., Li, F., & Spracklen, K. (1997). Friendships and violent behavior during adolescence. *Social Development, 6*, 207-223.
- Dodge, K. A., Price, J. M., Coie, J. D., & Christopoulos, C. (1990). On the development of aggressive dyadic relationships in boys' peer groups. *Human Development, 33*, 260-270.
- Dunn, J. (1993). *Young children's close relationships: Beyond attachment*. Newbury Park, CA: Sage.
- Eccles, J. S., Wigfield, A. & Schiefele, U. (1998). Motivation to succeed. In N. Eisenberg (Ed.), & W. Damon (Series Ed.), *Handbook of child psychology: Vol. 4. Personality and social development*. New York: Wiley.
- Eder, D., & Hallinan, M. T. (1978). Sex differences in children's friendships. *American Sociological Review, 43*, 237-250.
- Eisenberg, N., Guthrie, I. K., Murphy, B. C., Shepard, S. A., Cumberland, A., & Carlo, G. (1999). Consistency and development of prosocial dispositions: A longitudinal study. *Child Development, 70*, 1360-1372.
- Ellis, W. E., & Zarbatany, L. (2007). Explaining friendship formation and friendships stability: The role of children's and friends' aggression and victimization. *Merrill-Palmer Quarterly, 53*, 79-104.
- Engels, R. C. M. E., Knibbe, R. A., Drop, M. J., & de Haan, Y. P. (1997). Homogeneity of cigarette smoking within peer groups: Influence or selection? *Health Education and Behavior, 24*, 801-811.
- Engels, R. C. M. E., Vitaro, F., Blokland, E. D. E., de Kemp, R., & Scholte, R. H. J. (2004). Influence and selection processes in friendships and adolescent smoking behaviour: The role of parental smoking. *Journal of Adolescence, 27*, 531-544.
- Ennett, S. T., & Bauman, K. E. (1994). The contribution of influence and selection to adolescent peer group homogeneity: The case of adolescent cigarette smoking. *Journal of Personality and Social Psychology, 67*, 653-663.
- Feldlaufer, H., Midgley, C., & Eccles, J. S. (1988). Student, teacher, and observer perceptions of the classroom environment before and after the transition to junior high school. *Journal of Early Adolescence, 8*, 133-156.
- Findlay, L. C., Girardi, A., & Coplan, R. J. (2006). Links between empathy, social behavior, and social understanding in early childhood. *Early Childhood Research Quarterly, 21*, 347-359.
- Güroğlu, B., Haselager, G. J. T., van Lieshout, C. F. M., & Scholte, R. H. J. (2009). Antagonists in mutual antipathies: A person-oriented approach. *Journal of Research on Adolescence, 19*, 35-46.
- Güroğlu, B., van den Bos, W., Rombouts, S. A. R. B., & Crone, E. A. (2011). Dissociable brain networks involved in development of fairness considerations: Understanding intentionality behind fairness. *NeuroImage, 57*, 634-641.
- Güroğlu, B., van Lieshout, C. F. M., Haselager, G. J. T., & Scholte, R. H. J. (2007). Similarity and complementarity of behavioral profiles of friendship types and types of friends: Friendships and psychosocial adjustment. *Journal of Research on Adolescence, 17*, 357-386.

- Hardy, C. L., Bukowski, W. M., & Sippola, L. K. (2002). Stability and change in peer relationships during the transition to middle-level school. *Journal of Early Adolescence, 22*, 117-142.
- Hartup, W. W. (1996). The company they keep: Friendships and their developmental significance. *Child Development, 67*, 1-13.
- Hartup, W. W., & Stevens, N. (1997). Friendships and adaptation in the life course. *Psychological Bulletin, 121*, 355-370.
- Hartup, W. W., & van Lieshout, C. F. M. (1995). Personality development in social context. *Annual Review of Psychology, 46*, 655-687.
- Haselager, G. J. T., Hartup, W. W., van Lieshout, C. F. M., & Riksen-Walraven, J. M. A. (1998). Similarities between friends and nonfriends in middle childhood. *Child Development, 69*, 1198-1208.
- Hektner, J. M., August, G. J., & Realmuto, G. M. (2000). Patterns and temporal changes in peer affiliation among aggressive and nonaggressive children participating in a summer school program. *Journal of Clinical Child Psychology, 29*, 603-614.
- Kandel, D. B. (1978). Homophily, selection, and socialization in adolescent friendships. *American Journal of Sociology, 84*, 427-436.
- Knecht, A., Snijders, T. A. B., Baerveldt, C., Steglich, C. E. G., & Raub, W. (2010). Friendship and delinquency: Selection and influence processes in early adolescence. *Social Development, 19*, 494-514.
- Knoester, C., Haynie, D. L., & Stephens, C. M. (2006). Parenting practices and adolescents' friendship networks. *Journal of Marriage and Family, 68*, 1247-1260.
- Kupersmidt, J. B., DeRosier, M. E., & Patterson, C. P. (1995). Similarity as the basis for children's friendships: The roles of sociometric status, aggressive and withdrawn behavior, academic achievement, and demographic characteristics. *Journal of Social and Personal Relationships, 12*, 439-452.
- Kurdek, L. A., & Krile, D. (1982). A developmental analysis of the relation between peer acceptance and both interpersonal understanding and perceived social self-competence. *Child Development, 53*, 1485-1491.
- Levitt, M. J. (1991). Attachment and close relationships: A life span perspective. In J. L. Gewirtz & W. F. Kurtines (Eds.), *Intersections with attachment* (pp. 183-205). Hillsdale, NJ: Erlbaum.
- Loeber, R. (1982). The stability of antisocial and delinquent child behavior: A review. *Child Development, 53*, 1431-1446.
- Maccoby, E. E. (1986). Social groupings in childhood: Their relationship to prosocial and antisocial behavior in boys and girls. In D. Olweus, J. Block, & M. Radke-Yarrow (Eds.), *Development of antisocial and prosocial behavior: Research, theories and issues*. New York: Academic Press.
- Maccoby, E. E. (1990). Gender and relationships: A developmental account. *American Psychologist, 45*, 513-520.
- Mariano, K. A., & Harton, H. C. (2005). Similarities in aggression, inattention/hyperactivity, depression, and anxiety in middle childhood friendships. *Journal of Social and Clinical Psychology, 24*, 471-496.
- Marsh, P., Allen, J. P., Ho, M., Porter, M., & McFarland, F. C. (2006). The changing nature of adolescent friendships: Longitudinal links with early adolescent ego development. *Journal of Early Adolescence, 26*, 414-431.
- Moffitt, T. (1993). Adolescence-limited and life-course persistent antisocial behavior: A developmental taxonomy. *Psychological Review, 100*, 674-701.

- Moskowitz, D. S., Schwartzman, A. E., & Ledingham, J. E. (1985). Stability and change in aggression and withdrawal in middle childhood and early adolescence. *Journal of Abnormal Psychology, 94*, 30-41.
- Nangle, D. W., Erdley, C. A., & Gold, J. A. (1996). A reflection on the popularity construct: The importance of who likes or dislikes a child. *Behavior Therapy, 27*, 337-352.
- Nangle, D. W., Erdley, C. A., Zeff, K. R., Stanchfield, L. L., & Gold, J. A. (2004). Opposites do not attract: Social status and behavioral style concordances and discordances among children and their peers who like or dislike them. *Journal of Abnormal Child Psychology, 32*, 425-434.
- Newcomb, A. F., Bukowski, W. M., & Pattee, L. (1993). Children's peer relations: A meta-analytic view of popular, rejected, neglected, controversial, and average sociometric status. *Psychological Bulletin, 113*, 99-128.
- Oh, W., Rubin, K. H., Bowker, J. C., Booth-LaForce, C., Rose-Krasnor, L., & Laursen, B. (2008). Trajectories of social withdrawal from middle childhood to early adolescence. *Journal of Abnormal Child Psychology, 36*, 553-566.
- Olweus, D. (1997). Bully/victim problems in school: Facts and intervention. *European Journal of Psychology of Education, 12*, 495-510.
- Pederson, S., Vitaro, F., Barker, E. D., & Borge, A. I. H. (2007). The timing of middle-childhood peer rejection and friendship: Linking early behavior to early-adolescent adjustment. *Child Development, 78*, 1037-1051.
- Pellegrini, A. D., & Bartini, M. (2000). A longitudinal study of bullying, victimization, and peer affiliation during the transition from primary school to middle school. *American Educational Research Journal, 37*, 699-725.
- Pellegrini, A. D., & Long, J. D. (2002). A longitudinal study of bullying, dominance, and victimization during the transition from primary school through secondary school. *British Journal of Developmental Psychology, 20*, 259-280.
- Pilkington, C. J., Tesser, A., & Stephens, D. (1991). Complementarity in romantic relationships: A self-evaluation maintenance perspective. *Journal of Social and Personal Relationships, 8*, 481-504.
- Poulin, F., Cillessen, A. H. N., Hubbard, J. A., Coie, J. D., Dodge, K. A., & Schwartz, D. (1997). Children's friends and behavioral similarity in two social contexts. *Social Development, 6*, 224-236.
- Poulin, F., & Boivin, M. (2000). The role of proactive and reactive aggression in the formation and development of boys' friendships. *Developmental Psychology, 36*, 233-240.
- Poulin, F., Dishion, T. J., & Haas, E. (1999). The peer influence paradox: Friendship quality and deviancy training within male adolescent friendships. *Merrill-Palmer Quarterly, 45*, 42-61.
- Rodkin, P. C., Farmer, T. W., Pearl, R., & van Acker, R. (2000). Heterogeneity of popular boys: Antisocial and prosocial configurations. *Developmental Psychology, 36*, 14-24.
- Rose, A. J., Swenson, L. P., & Carlson, W. (2004). Friendships of aggressive youth: Considering the influences of being disliked and of being perceived as popular. *Journal of Experimental Child Psychology, 88*, 25-45.
- Rubin, K. H. (1993). The Waterloo Longitudinal Project: Correlates and consequences of social withdrawal from childhood to adolescence. In K. H. Rubin & J. B. Asendorpf (Eds.), *Social withdrawal, inhibition, and shyness in childhood* (pp. 291-314). Hillsdale, NJ: Erlbaum.

- Rubin, K. H., Coplan, R. J., Chen, X., Buskirk, A. A., & Wojslawowicz, J. C. (2005). Peer relationships in childhood. In M. H. Bornstein & M. E. Lamb (Eds.), *Developmental psychology: An advanced textbook* (5th ed., pp. 469-512). Mahwah, NJ: Erlbaum.
- Rubin, K. H., Lynch, D., Coplan, R. J., Rose-Krasnor, L., & Booth, C. (1994). "Birds of a feather...": Behavioral concordances and preferential personal attraction in children. *Child Development, 65*, 1778-1785.
- Rubin, K. H., Wojslawowicz, J. C., Rose-Krasnor, L., Booth-LaForce, C., & Burgess, K. B. (2006). The best friendships of shy/withdrawn children: Prevalence, stability, and relationship quality. *Journal of Abnormal Child Psychology, 34*, 143-157.
- Savin-Williams, R. C., & Berndt, T. J. (1990). Friendships and peer relations during adolescence. In S. S. Feldman & G. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 277-307). Cambridge, MA: Harvard University Press.
- Schneider, B. H. (1999). A multimethod exploration of the friendships of children considered socially withdrawn by their school peers. *Journal of Abnormal Child Psychology, 27*, 115-123.
- Scholte, R. H. J., van Aken, M. A. G., & van Lieshout, C. F. M. (1997). Adolescent personality factors in self ratings and peer nominations and their prediction of peer acceptance and peer rejection. *Journal of Personality Assessment, 69*, 534-554.
- Seidman, E., Allen, L., Aber, J. L., Mitchell, C., & Feinman, J. (1994). The impact of school transitions in early adolescence on the self-system and perceived social context of poor urban youth. *Child Development, 65*, 507-522.
- Selphout, M., Denissen, J., Branje, S., & Meeus, W. (2009). In the eye of the beholder: Perceived, actual, and peer-rated similarity in personality, communication, and friendship intensity during the acquaintanceship process. *Journal of Personality and Social Psychology, 96*, 1152-1165.
- Sherman, A. M., de Vries, B., & Lansford, J. E. (2000). Friendship in childhood and adulthood: Lessons across the life span. *International Journal of Aging and Human Development, 51*, 31-51.
- Steinberg, L., & Morris, A. S. (2001). Adolescent development. *Journal of Cognitive Education and Psychology, 2*, 55-87.
- Updegraff, K. A., McHale, S. M., & Crouter, A. C. (2002). Adolescents' sibling relationships and friendship experiences: Developmental patterns and relationship linkages. *Social Development, 11*, 182-204.
- Urberg, K. A., Değirmencioglu, S. M., & Pilgrim, C. (1997). Close friend and group influence on adolescent cigarette smoking and alcohol use. *Developmental Psychology, 33*, 834-844.
- Urberg, K. A., Değirmencioglu, S. M., & Tolson, M. (1998). Adolescent friendship selection and termination: The role of similarity. *Journal of Social and Personal Relationships, 15*, 703-710.
- Wentzel, K. R., & Erdley, C. A. (1993). Strategies for making friends: Relations to social behavior and peer acceptance in early adolescence. *Developmental Psychology, 29*, 819-826.
- Werner, N. E., & Crick, N. R. (2004). Maladaptive peer relationships and the development of relational and physical aggression during middle childhood. *Social Development, 13*, 495-514.