

Perceived influence of close friends, well-liked peers, and popular peers: Reputational or personal influence?

Journal of Social and
Personal Relationships
2014, Vol. 31(8) 1116–1133
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sagepub.co.uk/journalsPermissions.nav
DOI: 10.1177/0265407514522887
spr.sagepub.com



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Abstract

This study examined two types of influence (reputational and personal) children perceive from different sources (i.e., close friends, well-liked peers, and popular peers). Participants included 455 third through fifth grade students. A quadratic assignment procedure was used wherein children's peer nominations of the source of influence were correlated with their nominations of the type of influence. Findings suggested that children perceive *personal influence* more so than reputational influence from close friends and well-liked peers. In contrast, children perceive *reputational influence* more so than personal influence from popular peers. The degree to which children perceive personal influence from the three sources differed by behavioral domains (i.e., academic and trend-following behaviors). Implications for peer influence research and intervention are discussed.

Keywords

Close friends, likeability, peer influence, personal influence, popularity, quadratic assignment procedure, reputational influence

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As a socialization process, peer influence concerns both positive and negative effects peers have on children's behaviors, attitudes, and activity choices (Berndt, 1992). As school-aged children markedly increase their social interactions with peers, peer influence becomes pertinent to their daily interactions (Rubin, Bukowski, & Parker, 2006). In understanding peer influence, it is important to define those "peers" who serve as a source of influence (Brechwald & Prinstein, 2011; Kindermann, 2008). Indeed, children's peer relationships operate in multi, overlapping layers and structures. Children's dyadic friendships, for example, are embedded within more loosely connected friendship groups or cliques (see Gifford-Smith & Brownell, 2003). Furthermore, within a broad peer network (e.g., classroom and grade), some children are placed in higher positions than others along the social status hierarchy (Parkhurst & Hopmeyer, 1998). Because peer influence can come from any part of this interrelated structure of peer relationships, it is challenging to pinpoint the most relevant source of peer influence.

Among others, children's close or best friends have long been identified as an important source of peer influence (Berndt, 1999). Relatively recently, it has been suggested that popular children, who occupy elevated positions within the social status hierarchy, might also have significant influence over others (Cillessen & Rose, 2005; Sandstrom, 2011). Thus far, research efforts have been parallel in examining peer influence emanating from close friends and high-status, *popular* peers. As a result, it is not clear the degree to which popular peers exert influence over children in comparison with the influence originating with close friends. The focus of this study was on examining the types of peer influence children perceive from close friends and high-status peers.

Close friends are an important source of peer influence as friendship is a normative experience for children across development (Bagwell & Schmidt, 2011). Whereas play is a primary medium for preschool children's friendship formation, shared norms and interpersonal qualities become increasingly important bases of friendship formation by middle childhood (Gifford-Smith & Brownell, 2003). Some gender differences have also been found in children's friendships: As compared to boys, girls appear to perceive greater emotional provision from friends such as intimacy, trust, and acceptance; however, boys and girls were found to be similar regarding the degree to which they are satisfied with their friendships (see Rose & Rudolph, 2006).

Research has documented a number of areas in which friends have influence over individuals. Not surprisingly, friends' influence has received significant research attention on maladaptive behaviors, including deviancy and rule-breaking behaviors (Dishion, Spracklen, Andrews, & Patterson, 1996), smoking and alcohol use (Urberg, 1992; Urberg, Değirmencioglu, & Pilgrim, 1997), and depression (Van Zalk, Kerr, Branje, Stattin, & Meeus, 2010). Evidence also suggests that, at least in adolescents' risk-taking behaviors, close friends' influence is stronger than influence from some of the other types of peer relationships, such as social crowds (i.e., reputation-based peer groups) and loosely connected friendship groups (Urberg, 1992; Urberg et al., 1997). However, increasing evidence suggests that friends also have influence over adaptive behaviors. For example, among middle and high school students, associating with prosocial friends increased individuals' prosocial behavior over time (Barry & Wentzel, 2006; Wentzel, Barry, & Caldwell, 2004). Also, in a study that involved students in

fourth through sixth grades, friends were found to have influence over children's academic performance and achievement-related beliefs (Altermatt & Pomerantz, 2003). However, empirical evidence is limited in terms of peer influence among children in elementary years.

In contrast to long-standing inquiries about and rich evidence regarding close friends' influence, especially among adolescents, research on the influence of popular or high-status peers has been relatively recent but remains limited. In brief, research suggests that popularity is best characterized by two related but meaningfully distinct constructs: Sociometric popularity (i.e., likeability/acceptance) and perceived popularity (Mayeux, Houser, & Dyches, 2011). Whereas well-liked/accepted children are characterized by primarily prosocial characteristics, perceived-popular children show a hybrid of prosocial and aggressive characteristics (Parkhurst & Hopmeyer, 1998). It has been suggested that one of the primary characteristics that distinguishes sociometric popularity from perceived popularity is social dominance and power. Specifically, relative to well-liked children (with average popularity), perceived-popular children (with average levels of likeability) scored higher on leadership, admiration, and social control in one study of elementary school children (Lease, Kennedy, & Axelrod, 2002). Notably, they scored similarly on influence (i.e., others listen to—this person has a lot of influence; Lease et al., 2002). It might be that perceived-popular children are highly visible and rely on their dominant traits and aggressive tendencies to wield influence over peers by setting the behavioral norms and expectations of the peer group. In contrast, well-liked children primarily display “model” behaviors, which might elicit others' emulation of their behaviors out of respect. Consistently, studies have suggested that adolescents are more susceptible to friends' influence in alcohol use and delinquency to the degree to which their friends were more well liked (Allen, Chango, Szewedo, Schad, & Marston, 2012; Laursen, Hafen, Kerr, & Stattin, 2012).

More direct investigations of the influence of high-status peers have been conducted through experimental designs. For example, Cohen and Prinstein (2006) examined the manner in which adolescents conform to peers as a function of the peer's social status. In their experiments, participating White adolescent males were presented with a set of aggression/risk hypothetical vignettes in a simulated Internet chat room. In a *public* condition, participants were asked to determine their responses to the scenarios while they were “logged on” and were exposed to the responses of peers with high and low social statuses. Subsequently, they were switched to a *private* condition in which they responded to the same scenarios after being “logged off” the chat room. In both conditions, adolescents demonstrated higher levels of conformity to decisions made by high-status peers (i.e., high in likeability and/or perceived popularity) than those made by low-status peers. However, it was not clear whether likeability or perceived popularity contributed to the participants' conformity decisions because high status was characterized by high scores on either of the two status indicators (i.e., likeability and perceived popularity).

To disentangle whether peer influence comes from likeability/acceptance or perceived popularity, Sandstrom and Romano (2007), using a similar experimental design, further manipulated the status variables. Participants were randomly assigned to interactions with peers from four different status categories based on high and low scores in acceptance and perceived popularity. Results showed that participants were more likely

to endorse conformity to the antisocial decisions made by peers with high acceptance than to those with high perceived-popularity. Notably, participants were affected by perceived-popular peers when they made the decision in a *public* as opposed to a *private* condition. The authors preliminarily concluded that the influence of perceived-popular peers might be more pronounced in group or public settings, whereas that of well-accepted peers might be more pronounced in dyadic or private settings (Sandstrom, 2011). Taken together, the findings from correlational and experimental studies alike suggest that high-status children do influence their peers; however, the ways in which perceived popular versus well-liked children influence peers might differ.

The present study

Building on the evidence that close friends and high-status peers can be powerful sources of peer influence, we aimed to further unpack children's perceived peer influence by examining different *types* of influence from those important sources. Specifically, research on peer influence has not yet examined the extent to which peer influence is a "reputational" or "personal" construct. As part of a broader peer network (e.g., classroom and grade), children might perceive some peers as having a visible effect and power over others in general. That is, these children are influential by "reputation," and children might believe their peers are influenced by these types of children even though they themselves do not feel influenced by them. Instead, children might identify, to some extent, a different set of peers whom they perceive as having an effect on their own behaviors and attitudes. That is, children might recognize those who have "personal" influence as distinct from those having "reputational" influence. In this study, we determined reputational influence and personal influence by asking children to nominate peers who have influence on "others" and "me," respectively.

An advanced conceptualization of popularity (Mayeux et al., 2011) discussed previously – sociometric popularity and perceived popularity – appears to fit nicely with our conceptualization of personal and reputational influence. That is, sociometric popularity is primarily determined based on the aggregate of affective regard and personal relationships, whereas perceived popularity taps into a reputation-based social status. Thus, those whom children perceive as sociometrically popular might evoke personal influence, whereas those whom children perceive as popular might evoke reputational influence. In this study, we used the terms *likeability* (well-liked peers) to reference sociometric popularity and *popularity* (popular peers) to indicate perceived popularity, which is closely aligned with the manner in which each construct is measured (Cillessen, 2011).

Whereas our primary goal focused on children's perceptions of domain-general peer influence, our secondary goal was to further examine children's perceived personal influence in the specific domains of academic and trendy (e.g., wearing latest style of clothing) behaviors. As a socialization process, peer influence appears pervasive across age-groups and behavioral domains (Harris, 1995). However, the majority of studies of peer influence have focused on adolescents and maladaptive behaviors, and relatively less has been examined regarding adaptive or neutral behaviors among children in the elementary years. Relative to peer influence in maladaptive behaviors, peer influence

in academic and trendy behaviors are likely relevant to a broader range of children in mid- to late elementary years; thus, we deemed it important to examine peer influence in those domains in order to capture more inclusive perceptions of peer influence.

To address our questions, we used a unique methodological approach that has rarely been utilized in the studies of children's peer relationships. That is, the majority of studies thus far have focused on the aggregated nominations children receive from peers to assess their social characteristics (e.g., social status and influence) and then examining associations between those characteristics. For example, the total number of nominations children receive from peers as being "influential" would be correlated with the total number of nominations they receive for being "well liked." From such an analysis, one might show that the two constructs are highly correlated (i.e., influence and likeability are highly related or influential children are well liked) even if no child ever nominated the same peer as being both influential and well liked. The present study differs methodologically from this approach in two main ways. First, instead of focusing on the nominees' characteristics, our focus was on those making the nominations (i.e., perceivers). The importance of considering the perceiver, as opposed to the social object, in social relationship research has been eloquently argued by others (Kenny & La Voie, 1984). Second, our study is most unique in its use of the quadratic assignment procedure (QAP) correlation, commonly used in social network analysis (see results section for details). Briefly speaking, the QAP correlations allow us to examine the degree to which an individual perceives any two constructs/characteristics (e.g., close friendship and personal influence) as similar or related. This is accomplished by examining the association of nominations individuals give for the two characteristics.

The following questions guided this study: (a) To what degree does an individual perceive reputational influence and personal influence as (dis)similar? That is, to what degree does a given child tend to nominate the same peer as having personal and reputational influence? (b) To what degree does an individual perceive personal influence versus reputational influence as emanating from close friends, well-liked peers, and popular peers? and (c) In the domains of academic and trendy behavior, whom does an individual perceive as having influence over his or her own behavior—close friends, well-liked peers, or popular peers? As a supplementary research question, we also addressed: To what degree does an individual perceive close friends, well-liked peers, and popular peers as related with each other?

To address our questions, we examined the associations of a series of pairs of peer nominations children provided. First, we examined the association of peer nominations children gave for reputational influence and personal influence. Next, we examined the associations of peer nominations between the source of influence (i.e., close friends, well-liked peers, and perceived popular peers) and the type of influence (i.e., reputational influence and personal influence). For each source of influence, we were interested in the relative degree to which children perceived each type of influence. For example, it might be that the association between personal influence and likeability is moderate to strong, whereas the association between reputational influence and likeability is weak. That is, children might perceive a peer whom they like as having personal influence but not necessarily see that same peer as having reputational influence. Finally, we examined the association of nominations between perceived personal influence and

each source of influence in the domains of academic and trendy behaviors. For the supplementary research question, we examined the association of three pairs of peer nominations: Close friends and well-liked peers, close friends and popular peers, and well-liked peers and popular peers.

Method

Participants

Participants in this study consisted of 455 (237 females, 218 males) students in the third through fifth grades from four public elementary schools located in the Southeastern U.S. The study sample, across four schools, included nine grade level units (i.e., a grade level unit consisted of all classrooms within a grade level at a particular school): two units of third grades (mean age of 9.31 years); three units of fourth grades (mean age of 10.28 years); and four units of fifth grades (mean age of 11.32 years). The size of the grade level groupings ranged from 37 to 63, with a mean size of 49. According to school records, 77% of the participants were White, 13% were Black, and 9% were of other ethnicities.

Participating schools were from small rural communities in which students knew one another through the elementary years and, according to school personnel, they had many opportunities for cross-classroom interactions (e.g., ability groupings, shared lunch, and recess times). Thus, we decided to examine peer relationships at the grade level as opposed to the classroom level. Consistently, the consent rate for study participation was determined for each grade level unit. A minimum of 75% active parental consent rate was required for a particular grade level unit (e.g., fourth graders at School A) to be included in the study; the consent rate across the participating grade level units ranged from 75% to 86%. For those whose parent gave consent, child assent was also obtained at the time of the survey administration.

Measures

Peer nominations were used to assess the study constructs described below. Similar items and procedures have been broadly used in previous research on peer relationships (e.g., Berndt & Keefe, 1995; Card, Hodges, Little, & Hawley, 2005). Except for close friend nominations wherein children reported up to three closest friends, children were provided with 10 spaces for nominations but told they could nominate more than 10 if they so desired. In essence, this was an unlimited nomination procedure. Children were allowed to nominate either same- or cross-sex grade mates who fit each description, and they were also allowed to nominate the same person for more than one item. For all items, self-nominations were excluded.

The nomination items included *close friends* (Who are your three closest friends? 92% of children listed three close friends and an additional 6% listed two close friends.); *likeability* (Who do you like to play with the most? The average number of nominations was 3.68); *popularity* (Who are the most popular children at school? The average number of nominations was 3.65); *personal influence* (This person influences *me* because I want to be like him or her. I look to this person for how to act. The average number of

nominations was 1.64); *reputational influence* (This person influences *others* because kids want to be like him or her. Others look to this person for how to act. The average number of nominations was 2.18); *academic influence* (Think of a time when you decided to work really hard on class projects or study hard for a test because other kids were. What kids made you want to study hard, too? The average number of nominations was 1.99); *trend influence* (Think of a time when you started wearing a new style of clothes or listening to some new music because other kids were. What kids made you want to wear these clothes or listen to the new music, too? The average number of nominations was 1.26).

We examined gender and grade effects on the number of nominations children made for the influence items. In general, girls made more nominations than did boys for all influence items: Personal influence, $t(440) = -4.51, p < .01$; reputational influence, $t(446) = -6.41, p < .01$; academic influence, $t(448) = -4.55, p < .01$; and trend-following influence, $t(422) = -5.99, p < .01$. The effect of grade level was detected for reputational influence only, $F(2, 452) = 13.39, p < .01$; fifth graders made more nominations than did both third and fourth graders.

Procedures

Data were collected in the late spring of a school year. Two trained research team members, comprising doctoral students and their doctoral research advisor, administered paper-and-pencil questionnaires in classrooms. The current study was part of a larger study on children's peer relationships, and data were collected in two 1-hr sessions. To ensure confidentiality, we provided children with an index card for covering their answers and told them not to discuss their answers during or after the survey administration. We also informed children that they were allowed to stop participating at any time. During the questionnaire administration, one research team member read aloud the instructions and items while the other member circulated in the classroom to provide individual assistance as necessary. Only the names of students whose parents gave consent were included in the peer nomination rosters. Before completing peer nominations, children were given time to review the roster for participating peers. They were also asked to write the number identifier linked with a participant, rather than the child's name. Nonparticipating students were asked to read or draw quietly at their desks. All children, regardless of whether or not they participated, received a small stationary gift at the end of survey administration.

Results

Analysis overview

Our primary goal was to examine the manner in which an individual's perception of different sources of influence (i.e., friends, well-liked peers, and popular peers) is associated with that of different types of influence (i.e., personal vs. reputational influence). Similar kinds of inquiries are addressed by a social network approach wherein one can test whether the pattern of social ties in one relation (e.g., friendship) is related to ties in

another relation (e.g., advice seeking; Wasserman & Faust, 1994). Specifically, we used a QAP in the UCINET Version 6.36 (Borgatti, Everett, & Freeman, 2002) to examine the associations between whom a perceiver nominates for reputational influence, for example, and whom that same perceiver nominates for popularity or likeability. The QAP correlation is different from a typical bivariate correlation in which nominations across all perceivers are aggregated and then the association between two variables/characteristics is examined. In other words, a typical bivariate correlation cannot take into account a perceiver effect, whereas the QAP correlation can. The QAP procedure has been shown to produce relatively unbiased results when dealing with social network types of data wherein the observations are not independent of each other (Krackhardt, 1988).

For all analyses, the grade level unit served as the unit of analysis. First, we summarized individuals' peer nominations for each item in separate matrices within each grade level unit. All participants in a grade level unit were included in the rows (nomination given) and columns (nomination received) of the matrices, and each cell contained 0 or 1, indicating absence or presence of nominations, respectively. In turn, two matrices of interest (e.g., matrix of friendship nominations and matrix of personal influence nominations) were correlated with each other.

The QAP correlation procedure involves two steps (Borgatti et al., 2002). In the first step, a Pearson's correlation coefficient is calculated between corresponding cells of the two matrices. In the second step, the rows and columns of one of the two matrices are randomly permuted, which are again correlated with those of the other original matrix. The permuted correlation is repeated hundreds of times (2,500 in this case), and the proportion of times that the random correlation in the second step is equal to or larger than the observed correlation in the first step is calculated. A proportion score of lower than .05 suggests that less than 5% of the permuted, random correlations are equal to or larger than the original correlation; thus, the correlation between the two observed matrices is unlikely to have occurred by chance alone and is statistically significant.

To what degree does an individual perceive reputational influence and personal influence as (dis)similar? Across the nine units of third through fifth grades, the QAP correlations between children's perceived personal influence (i.e., this person influences *me*) and reputational influence (i.e., this person influences *others*) were statistically significant (see Table 1) with an average of $r = .45$ (ranging from .27 to .56). The magnitude of the average correlation indicates a moderate level of overlap between children's perceptions of reputational and personal peer influence. In other words, children perceived reputational influence and personal influence as related yet distinct.

To what degree does an individual perceive personal influence versus reputational influence as coming from close friends, well-liked peers, and popular peers? The associations of peer nominations between the source of influence and the type of influence are summarized in Table 2. In each grade unit, individuals' nominations of the source of influence were significantly related to those of both personal and reputational influences. Specifically, the average QAP correlation between individuals' close friend nominations (i.e., who are your closest friends?) and personal influence nominations was $r = .31$ (ranging from .23 to .39), and that between close friends and reputational influence was $r = .22$ (ranging

Table 1. QAP correlations between personal influence and reputational influence.

Participating network	Grade level size ^a	Correlation between personal influence and reputational influence
Third grade: School A	54	.55
Third grade: School D	48	.33
Fourth grade: School A	63	.27
Fourth grade: School B	47	.52
Fourth grade: School D	44	.45
Fifth grade: School A	57	.56
Fifth grade: School B	58	.49
Fifth grade: School C	35	.45
Fifth grade: School D	37	.39
Average	49	.45

Note. All correlation coefficients are significant at $p < .05$.

^a Grade level sizes are the same for the rest of the analyses.

Table 2. QAP correlations between the source and the type of influence.

	Close friends		Well-liked peers		Popular peers	
	Personal influence	Reputational influence	Personal influence	Reputational influence	Personal influence	Reputational influence
Third grade: School A	.32	.27	.35	.27	.31	.27
Third grade: School D	.24	.19	.26	.22	.23	.25
Fourth grade: School A	.39	.23	.43	.24	.24	.29
Fourth grade: School B	.35	.22	.37	.28	.26	.29
Fourth grade: School D	.27	.12	.30	.21	.28	.34
Fifth grade: School A	.32	.29	.42	.33	.33	.36
Fifth grade: School B	.32	.23	.33	.22	.22	.25
Fifth grade: School C	.38	.21	.39	.26	.23	.38
Fifth grade: School D	.23	.21	.34	.19	.25	.37
Average	.31	.22	.35	.25	.26	.31

Note. All correlation coefficients are significant at $p < .05$.

from .12 to .29). Unlike typical Pearson correlations, inferential statistics to compare the magnitude of two QAP correlations do not appear to exist, at least to our knowledge. As a result, following Cohen's (1988) guideline, we interpreted the QAP correlations in terms

of magnitude (.1–.3 as small, .3–.5 as moderate, and above .5 as large). Using that guideline, the magnitude of the average correlation between close friends and personal influence is considered moderate, whereas that between close friends and reputational influence is considered small.

The average QAP correlation between children's nominations of well-liked peers (i.e., who do you like to play with the most?) and personal influence nominations was $r = .35$ (ranging from .26 to .43), and that between well-liked peers and reputational influence was $r = .25$ (ranging from .19 to .33). Overall, the magnitude of the average correlation was moderate between individual nominations of well-liked peers and personal influence, whereas it was small between nominations of well-liked peers and reputational influence.

The average QAP correlation between children's nominations of popular peers (i.e., who are most popular at school?) and personal influence was $r = .26$ (ranging from .22 to .33) and that between nominations of popular peers and reputational influence was $r = .31$ (ranging from .25 to .38). The magnitude of the average correlation was moderate between popularity and reputational influence and that between popularity and personal influence was small. In general, across the grade units, the magnitude of correlations between individual nominations for popularity and nominations for personal and reputational influence was less distinct than was the case for the other two sources of influence. That is, about half of the QAP correlations between popular peers and reputational influence were in the small range, although they were in the upper .20s.

In the domains of academic and trendy behavior, to what degree does an individual perceive personal influence as coming from close friends, well-liked peers, and popular peers? An individual's perceived personal influence in both academic (i.e., what kids made you want to study hard, too?) and trendy behavior domains (i.e., what kids made you want to wear certain clothes or listen to the new music, too?) was significantly related to his or her perceptions of close friendships, well-liked peers, and popular peers (see Table 3). The average QAP correlation was $r = .32$ (ranging from .21 to .40) between academic influence and close friends; $r = .35$ (ranging from .23 to .43) between academic influence and well-liked peers; and $r = .22$ (ranging from .14 to .34) between academic influence and popular peers. The average QAP correlations were moderate in size between academic influence and both close friends and well-liked peer nominations. In contrast, the magnitude of the average correlation was small between academic influence and popular peer nominations.

The average QAP correlation was $r = .30$ (ranging from .27 to .35) between trend influence and close friends; $r = .31$ (ranging from .23 to .36) between trend influence and well-liked peers; and $r = .30$ (ranging from .22 to .37) between trend influence and popular peers. The magnitude of correlation was similarly moderate in size between trend influence and each source of influence.

Supplementary analysis

We examined the degree to which children's nominations of close friends, well-liked peers, and popular peers are associated with each other. The average QAP correlation

Table 3. QAP correlations between domains of personal influence and the sources of influence.

	Academic personal influence			Trend-following personal influence		
	Close friends	Well-liked peers	Popular peers	Close friends	Well-liked peers	Popular peers
Third grade: School A	.35	.38	.30	.33	.32	.24
Third grade: School D	.34	.34	.23	.28	.23	.26
Fourth grade: School A	.40	.41	.22	.35	.36	.36
Fourth grade: School B	.37	.40	.14	.28	.32	.28
Fourth grade: School D	.25	.36	.19	.27	.34	.36
Fifth grade: School A	.37	.43	.34	.29	.31	.29
Fifth grade: School B	.28	.32	.22	.27	.26	.37
Fifth grade: School C	.28	.32	.17	.35	.34	.22
Fifth grade: School D	.21	.23	.15	.31	.28	.31
Average	.32	.35	.22	.30	.31	.30

Note. All correlation coefficients are significant at $p < .05$.

was $r = .57$ (large; ranging from .47 to .65) between close friends and well-liked peers; $r = .25$ (small; ranging from .17 to .31) between close friends and popular peers; and $r = .31$ (moderate; ranging from .20 to .42) between well-liked peers and popular peers. Not surprisingly, children appear more likely to nominate close friends as well liked than as popular.

Discussion

Close friends, well-liked peers, and popular peers have been suggested as important sources of peer influence and yet tap meaningfully distinct aspects of peer relationships. Thus, there might be subtle but important nuances to be considered regarding the types or modalities of influence emanating from the different sources. This study contributes important information to the literature by examining a proposition that children perceive different types of influence—personal versus reputational influence—as emanating from close friends, well-liked peers, and popular peers. This study also adds to literature on peer influence by extending the age-group under investigation as well as the behaviors of interest. Specifically, we examined peer influence among mid- to late elementary children in behaviors that are pertinent to a broader range of children than defiance and misbehavior, namely, academic and trend-following behaviors.

Findings of the study supported that, albeit related, children indeed perceive personal and reputational influence as distinct. By taking a social network analysis approach to analyzing the patterns among the peer nomination data, we were able to discern that an individual's nominations of peers having influence over "me" overlapped only moderately with that same individual's nominations of peers having influence over "others." Results further suggested that, although close friends, well-liked peers, and popular peers are all significant sources of influence, the primary type of influence children perceive differs depending on the source of influence. Specifically, children appeared to perceive *personal influence* more so than reputational influence from their close friends and those whom they like. In contrast, children appeared to perceive *reputational influence* more so than personal influence from those who they think are popular. The pattern of our findings appears in sync with the preliminary conclusions made by Sandstrom (2011; Sandstrom & Romano, 2007) that the influence of popular peers might be more pronounced in group or public settings, whereas that of well-accepted peers might be more pronounced in dyadic or private settings.

Although children generally perceived personal influence from close friends and well-liked peers more so than from popular peers, the patterns varied depending on the behavioral domain. Specifically, in academic behaviors, perceived personal influence was moderately associated with close friends and well-liked peers and more weakly with popular peers. With regard to trendy behaviors, however, the magnitude of association was similarly moderate between perceived personal influence and each source of influence.

It appears useful to consider potential influence mechanisms involved in the different types of perceived influence from each source. Within dyadic friendships, for example, research has shown co-rumination and deviancy training as compelling mechanisms of influence. Co-rumination refers to excessive discussion of problems with their close friends, which has been found to lead to increased depression and anxiety symptoms among girls (Rose, Carlson, & Waller, 2007). Deviancy training is a process in which youth are involved in deviant talk with their friends which is then followed by the friends' positive reinforcement of the deviant comments (Piehler & Dishion, 2007). Co-rumination and deviancy training might be primarily relevant to friends' influence in problem behaviors. However, both mechanisms are characterized by considerable verbal exchanges and mutual reinforcement, which might be applicable to influence in adaptive or neutral behaviors as well. Other social-cognitive motives, in addition to social reinforcement, have been suggested for explaining social influence (Wood, 2000) from those whom we regard highly, which might be useful for explaining influence on adaptive behaviors. For instance, adopting the attitudes and behaviors of highly regarded peers can derive from the need to maintain a positive evaluation of the self (Yanovitzky & Rimal, 2006). In future research, it could prove useful to examine if mechanisms of influence from close friends and well-liked peers are the same for adaptive and maladaptive behaviors.

Reputational influence, emanating more strongly from perceived popular peers, suggests that influence can operate outside of the context of friendships, direct contact, or positive affect. It appears that normative influence processes are particularly relevant regarding influence from perceived popular peers. Research suggests that two types of social norms serve as a strong motivator of human behaviors (Cialdini, Reno, &

Kallgren, 1990). Specifically, children might perceive either descriptive norms (e.g., popular kids all play sports) or injunctive norms (e.g., playing sports makes kids popular). Although it is possible that the perceived norms are not representative of the behaviors of the larger peer group, children's perceptions of social norms might be affected by the behaviors of popular or highly visible peers. Indeed, popular children are characterized by social power and prestige (Prinstein & Dodge, 2008). From a social goal perspective, children who are status oriented and motivated by agentic goals (e.g., power and control) might be more receptive to influence from popular peers than are those who are motivated by communal goals (e.g., intimacy and closeness; Ojanen, Grönroos, & Salmivalli, 2005).

The underlying process by which children are influenced by well-liked peers might be mixed to some extent. In our data, considerable overlap was found between children's nominations of close friends and well-liked peers ($r = .57$), in contrast to a small association between close friends and popular peers ($r = .25$). The process by which a child is influenced by a well-liked peer might resemble the process by which the child is influenced by a close friend, at least to the extent to which close friends are also those whom they like. However, if those well-liked peers are merely "wishful" friends, influence might stem from a desire for children to be assimilated within the friendship circle of those well-liked peers. In such case, likeability might indeed be perceived as a type of social power.

Personal influence and reputational influence might each have unique implications for intervention. For example, identifying children who are perceived as most influential in the peer group (i.e., reputational influence) might provide a useful insight in understanding the "origin" of influence from which influence likely spreads. Those reputationally influential children might serve as an important target of intervention if one aims to change or channel the behaviors and attitudes of children in the peer group in general. However, from a recipient's perspective of influence, a more meaningful question might concern identifying peers who have a direct or personal impact on his or her behaviors and attitudes. If the source is the child's close friends, an intervention might need to target the dyad simultaneously, given that influence is mutual between friends (Berndt, 1992).

It was interesting to observe that, when an unlimited nomination procedure was used, the number of nominations children made for influence items (ranges from 1.26 to 2.18) tended to be lower than that for like-most (3.68) and most-popular (3.65) items. Among the influence items, the number of nominations was lowest for personal influence on trendy behaviors (1.26) whereas it was highest for reputational influence (2.18; this person influences *others*). It could be that for children in the mid- to late elementary years, influence might have a negative connotation especially given that a sense of mastery and self-confidence emerge as important developmental tasks at this age (Erikson, 1964). Likewise, parents and teachers might increasingly encourage children in this stage to be assertive, "stand up for themselves," and develop their own identity separate from the status structure.

Although it was not a primary focus of this study, findings support the distinction between sociometric popularity and perceived popularity in a manner that has not been documented in previous research. By including influence items that specifically reference influence over "me" versus "others," we were able to provide support for the idea

that perceived popularity is best conceived of as a reputational construct (moderate association between popularity and reputational influence and low association between popularity and personal influence), whereas sociometric popularity is an aggregate of personal regard (the reversed pattern of QAP correlations). Consistently, the QAP correlation between likeability and popularity was moderate ($r = .31$). Thus, we might best conceptualize popular and well-liked children as having different types of influence that emanate from differing types of social dynamics. As Bukowski argued that “without the group, the popular person has no power” (2011, p. 16), perceived popularity might be better understood as a group-level construct, which contrasts to likeability that is more relevant at the individual level (Sandstrom, 2011).

Limitations and future directions

We believe that this study is novel in terms of conceptualization and analytic approaches to studying peer influence. However, the findings might be best considered as preliminary because QAP correlations were descriptively compared rather than compared with the use of inferential statistics. An inferential statistical test that compares the QAP correlations is not available, at least, to our knowledge. Likewise, we did not test gender and grade effects on the associations. In calculating QAP correlations, for example, the first step involves creating matrices that summarize peer nominations. If the matrices are created by sex, cross-sex nominations will be lost and QAP correlations by sex, in turn, will be based on partial information. However, some interesting patterns are worth noting in terms of the gender and grade effects on the number of nominations children made for influence items. Specifically, girls made more nominations than did boys for all influence items, suggesting that, relative to boys, girls are more receptive and “attuned” to peer influence at least in the mid- to late elementary years. Regarding grade level differences, fifth graders made more nominations than did both third and fourth graders for reputational influence. It might be that it becomes increasingly visible who exerts influence over others in the peer group as children move to upper grade levels.

We were primarily interested in individual’s perceptions in determining the source and the type of influence, and some cautions and limitations are worth noting in this regard. Whereas we did not determine whether or not children’s nominations of close friends are reciprocated, evidence suggests that susceptibility to peer influence depends on whether or not peer attraction is reciprocated (e.g., Juvonen & Ho, 2008). Also, children might not equally perceive influence that operates explicitly versus implicitly. For example, children might be more aware of influence from close friends, given that influence might be more explicitly transmitted through verbal and behavioral exchanges. In contrast, albeit potentially strong, children might be less aware of influence if it operates implicitly or indirectly through norms set by perceived popular peers, for example.

The findings should be interpreted in light of the developmental stages of participating children. It is likely that the types of influence children perceive from close friends, well-liked peers, and popular peers change across development. Some insights are suggested by a study that examined developmental trends in the manner in which youth prioritize popularity over other social goals and expectations (i.e., friendship, compassion, achievement, romance, and rule adherence; LaFontana & Cillessen, 2010).

Results of the study showed that youth increasingly prioritize popularity over the other domains from the elementary years through high school, with a peak in middle school and early high school. This trend was particularly pronounced for rule adherence, such that youth were increasingly (from Grades 2 through 15) willing to choose popularity status over following rules. Moreover, males tended to prioritize status more so than did females. These findings appear to have direct and significant implications for differences in peer influence based on developmental stages, behavioral domains, and gender.

We used grade-based, as opposed to classroom-based, peer nominations. Our choice was based on the fact that participating schools were from small rural communities where children's peer interactions were reportedly not limited to classmates but involved grade mates substantially. However, it deserves a further empirical investigation to determine which of the two (i.e., classmates and grade mates) is a more relevant source of peer influence. Given a proximity effect, it is possible that children nominate classmates more often than grade mates even when children are allowed to nominate anyone in their grade. The relevance of classroom versus grade as the source of peer influence might further vary depending on the geographic context (e.g., rural, urban, and suburban) of schools and stability of the school population across school years.

It should be noted that the source of peer influence examined in this study was limited to close friends, well-liked peers, and popular peers. However, there are other important sources of peer influence, which likely have important implications for children's peer socialization, including group-based peer relationships within school (e.g., cliques and friendship groups) and social relationships outside of school (e.g., church youth groups and neighborhoods). Although the relative importance of different sources of influence has been examined among adolescents (e.g., Urberg, 1992; Urberg et al., 1997), more research is necessary to address the issue in the elementary years. Because of the inter-related nature of the peer relationship structure, it might be daunting to pinpoint the most important source of influence per se. However, the results suggest that consideration of the nuances of peer influence, such as personal versus reputational influence, and the mechanisms governing each should be useful in the search for the most important sources of peer influence and the development of interventions.

Funding

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

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