The Longitudinal Interplay between Bullying, Victimization, and Social Status: Age-related and Gender Differences

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Abstract

The current study examined the longitudinal interplay between bullying, victimization, and social status (acceptance, rejection, and perceived popularity) over the course of 1 year. Cross-lagged path models were estimated for two cohorts, covering grades 3–6 (N = 3904, M age = 11.2 years) and grades 7–9 (N = 4492, M age = 14.4 years). Comparisons between cohorts and by gender were conducted. The results of this study corroborate the complexity of the longitudinal interplay between bullying, victimization, and social status in showing that direction and strength of associations differ by type of peer status, age, and gender. Conclusions cannot be drawn without taking these differences into account. The findings are discussed according to these differences, and directions for future research are provided.

Keywords: bullying; victimization; social status; cross-lagged path models

Introduction

A long tradition of research has shown that peer relations are significant for healthy development, and that their importance increases throughout childhood and adolescence (Buehler, 2006; Fuligni & Eccles, 1993). In particular, peer acceptance and peer rejection are widely recognized as important determinants of adjustment (Kupersmidt & Coie, 1990) as they represent belongingness and affection, characteristics of interpersonal relationships that are of evolutionary and developmental importance across the life span and across cultures (Baumeister & Leary, 1995). Peer acceptance and rejection conceptualize sociometric status in the peer group and are intertwined with individual peer interactions, such as bullying and being victimized. For instance, both the perpetrators and the victims of bullying are not only worse off in terms of later maladjustment, including delinquent and criminal behavior (Ttofi, Farrington, Lösel, & Loeber, 2011b) and anxiety and depressive disorders (Arseneault, Bowes, &
Shakoor, 2010; Ttofi, Farrington, Lösel, & Loeber, 2011a)—they also tend to be generally rejected by their peers (Bouman et al., 2012; Veenstra et al., 2005). However, it has been suggested that involvement in bullying does not only come with social costs (i.e., peer rejection) but also benefits, referring to positive associations between bullying and perceived popularity which indicates visibility and social dominance in the peer group (De Bruyn, Cillessen, & Wissink, 2010; Reijntjes et al., 2013).

Surprisingly, we know little about the longitudinal interplay between social status and involvement in bullying, although this ultimately may advance our knowledge on the link between peer relations and maladjustment. Even in the longitudinal studies on this topic (e.g., Hodges & Perry, 1999; Prinstein & Cillessen, 2003; Reijntjes et al., 2013), researchers have often neglected the stability over time and bidirectionality between social status and involvement in bullying. The current study aims to shed light on this complex interplay by applying a cross-lagged path model in which longitudinal associations between social status (peer acceptance, peer rejection, and perceived popularity), bullying, and victimization were examined across two cohorts covering an important developmental time span (primary and secondary school) and across gender. It is important to note that parts of this bidirectional model have been addressed in previous research (i.e., Cillessen & Mayeux, 2004; Salmivalli & Isaacs, 2005), which will be discussed below, yet our aim was to integrate this research into models that account for associations between bullying and victimization, as well as with different indicators of social status, with a special focus on differences related to age and gender.

**A Transactional Model**

Research has shown that both bullies and victims are less accepted and more disliked by peers. Moreover, bullies are often perceived as popular, which is not true for victims (De Bruyn et al., 2010; Veenstra et al., 2005). Given that previous research has found effects in both directions, that is, peer status predicting behavior and vice versa (e.g., Prinstein & Cillessen, 2003; Reijntjes et al., 2013), we now need to establish in which direction effects hold and are stronger when simultaneously controlling for opposite directions, concurrent associations, and stability of the constructs. Therefore, the current study applied a transactional model that acknowledges the dynamic interplay between a person and the context (e.g., Sameroff & MacKenzie, 2003; Tseng, Banny, Kawabata, Crick, & Gau, 2013). Such a model is useful in understanding that bullying or victimization may elicit negative reactions from peers such as being rejected (Newcomb, Bukowski, & Pattee, 1993) or positive reactions such as being perceived as popular, and that in turn social status among peers may trigger certain behaviors or conditions in peer interactions, such as bullying or being victimized (Parker, Rubin, Erath, Wojslawowicz, & Buskirk, 2006).

Similar cross-lagged models have been previously applied to aggression and social status (Tseng et al., 2013), and it would be interesting to see whether such models also apply to bullying, victimization, and social status. Bullying is a subtype of aggressive behavior with two specific features, namely (1) bullying is repetitive and enduring and (2) there is a power imbalance—socially or physically—between victim and perpetrator (Olweus, 1996). In addition, bullying, unlike aggression, is often strategic (proactive) behavior rather than reactive behavior, as bullies have a motivation for admiration and dominance in the peer group (e.g., Sijtsema, Veenstra, Lindenberg, & Salmivalli, 2009). As such, associations with social status may develop differently over time for bullying as compared with aggressive behavior more generally, which highlights the
novel contribution of this study to the extant literature. Moreover, a detailed investigation of links between social status, bullying, and victimization may inform antibullying programs that often target the group norm on bullying via the social position of bullies and victims in the peer group (e.g., Kärnä et al., 2011).

**Bullying and Social Status.** Bullies tend to be more disliked by their peers than others (Goossens, Olthof, & Dekker, 2006; Salmivalli, Lagerspetz, Björkqvist, Österman, & Kaukiainen, 1996; Vaillancourt, Hymel, & McDougall, 2003). On the one hand, children who have general unattractive features, such as displaying aggressive or, in particular bullying behavior, are more disliked than children who do not have these features (Newcomb et al., 1993). In line with this, research showed that bullying is related to subsequent peer rejection and less peer acceptance (e.g., Reijntjes et al., 2013). Vice versa, rejection by peers may prevent children from practicing and experiencing skills in peer interactions that are generally perceived as attractive, such as prosocial behavior (Dodge et al., 2003; Newcomb et al., 1993). Hence, children who are highly disliked or less socially accepted are more likely to (continue to) display negative behaviors such as bullying than those who are high in peer acceptance (Prinstein & Cillessen, 2003; Reijntjes et al., 2013). By contrast, some norm-breaking behaviors such as bullying give children a certain reputation in the peer group, being perceived as ‘cool’ (Juvonen, Graham, & Schuster, 2003; Vaillancourt et al., 2003), which is exactly what bullies are striving for according to research on bullying and status goals (e.g., Sijtsema et al., 2009). Simultaneously, it can be expected that children who are perceived as popular are motivated to maintain this status and may resort to bullying to do so, indicating that bullying and perceived popularity reinforce each other over time (Cillessen & Mayeux, 2004).

**Victimization and Social Status.** It has been suggested that having friends, and particularly being liked by peers, is important in protecting against victimization (Hodges, Boivin, Vitaro, & Bukowski, 1999; Pellegrini & Long, 2002). Highly liked children may be protected from getting victimized because bullies face the risk of possible social sanctions in the peer group when bullying these children. Similarly, it can be expected that being perceived as popular buffers against victimization as a dominant status in the group is unlikely to elicit bullying behavior, an act of dominance displayed by peers. Put differently, victims’ low position in the status hierarchy likely contributes to their victimization (Hodges & Perry, 1999; Salmivalli & Isaacs, 2005). Bullies may perceive rejected or unpopular children as easy targets because the knowledge that peers generally dislike or look down on a child may justify subjecting this child to bullying. As such, bullies may anticipate that their attacks on rejected or unpopular children will go unpunished by the peer group (Hodges et al., 1999). In addition, victimization can (further) contribute to peer rejection and a low status (i.e., not perceived as popular). Peers may not want to associate with children who are victimized and hence are low in the social structure of the group out of fear for losing their own position in the peer group (see also Sentse, Dijkstra, Salmivalli, & Cillessen, 2013). As such, victimization and peer rejection, as well as victimization and low perceived popularity, are likely to reinforce each other over time. A recent longitudinal study on preadolescents by Kawabata, Tseng, and Crick (2014) indeed showed that there was a negative bidirectional association between peer liking and victimization. In sum, theoretical claims as well as findings from previous research indicate that bullying, victimization, and social status are interrelated over time. In line with the
above, we hypothesize, both concurrently and longitudinally, negative associations between peer acceptance and involvement in bullying, positive associations between peer rejection and involvement in bullying, a negative association between perceived popularity and victimization, and a positive association between perceived popularity and bullying. Which direction of effects is more important when controlling for the others, however, remains largely untested and will thus be explored in the current study.

Next to perceived popularity as an indicator of social dominance and visibility, we distinguished here between peer acceptance and peer rejection, because these constructs are not simply the ends of one continuum (cf. Coie, Dodge, & Coppotelli, 1982). Children can be highly disliked by some, but liked by others, or they can score low on peer acceptance but will not necessarily be actively rejected and disliked. Moreover, peer acceptance and rejection can have different associations with behavior, and rejection often has stronger correlates than acceptance (e.g., Coie et al., 1982; Tseng et al., 2013). Based on this, we hypothesize stronger associations between involvement in bullying and peer rejection than with peer acceptance. The second question we aimed to elucidate is whether associations between social status and peer-related behavior are similar or different across age and genders.

**Age-related Differences**

Although much of the work on bullying and victimization has been conducted with primary school children, the early adolescent years are important for the study of bullying, victimization, and social status for several reasons. First, at this age, students attend secondary schools, which are larger with more diverse peer groups as compared with primary school (Pellegrini & Long, 2002). In addition, teachers spend considerably less time with their students, and thus have less information and supervision on their students. The context of secondary school may increase the risk to be involved in bullying, either as victim or as bully, as compared with primary school. Second, bullying may become increasingly attractive among adolescents, as they seem to prioritize popularity over socially accepted behaviors (LaFontana & Cillessen, 2010). At the same time, adolescents’ attitudes toward bullying become more permissive (Swearer & Cary, 2003), meaning that bullying may occur on a larger scale in secondary school as compared with primary school whereas the negative consequences of bullying (being rejected by peers) are smaller and the benefits (being perceived as popular) are larger.

Taking these assumptions and findings into account, we expected differences in the interplay between involvement in bullying and social status for youth in primary school (grades 3–6) compared with youth in secondary school (grades 7–9). More specifically, we hypothesized that in secondary school the stability of constructs over time is higher as well as associations between popularity and involvement in bullying whereas associations between bullying and sociometric status (i.e., peer acceptance and rejection) are smaller compared with primary school.

**Gender Differences**

There are reasons to expect differential associations for boys and girls, although research regarding gender differences in associations between bullying, victimization, and social status has produced mixed results. First, boys are generally more involved in bullying than girls (Salmivalli et al., 1996; Veenstra et al., 2005). Some studies show
that boys also score higher than girls on victimization (e.g., De Bruyn et al., 2010) whereas others have shown the opposite (Veenstra et al., 2005). Moreover, male bullies are less accepted than female bullies (Lee, 2009; Salmivalli et al., 1996) whereas female victims seem to be more rejected than male victims (Bouman et al., 2012). Second, some studies reported that girls typically receive higher scores for peer acceptance and perceived popularity than boys (Cillessen & Mayeux, 2004) whereas others reported no gender differences in peer acceptance (De Bruyn et al., 2010). Because of these mixed findings, the role of gender was explored in all analyses without any specific hypotheses.

The Present Study

Longitudinal associations between peer acceptance, peer rejection, perceived popularity, bullying, and victimization were examined in two cohorts covering two important developmental stages, namely primary and secondary school (grades 3–6 and 7–9). To overcome limitations related to design in previous studies, we simultaneously took into account cross-lagged (i.e., bidirectional) and concurrent associations, as well as stability of the constructs. Differences across age and gender in these associations were also examined. Last, we took into account concurrent associations between bullying and victimization, knowing that some children bully others and are victimized at the same time, referring to the so-called bully/victims (e.g., Veenstra et al., 2005). Hence, estimated relations between social status and bullying or victimization were more realistic and gave us a more conservative test of associations for bullying while accounting for victimization and vice versa.

Method

Participants

We used data collected for the KiVa antibullying program evaluation in two different cohorts covering either grades 3–6 or grades 7–9 (see Kärnä et al., 2011, 2013, for details on recruitment and the intervention program). In the fall of 2006, recruitment letters were sent to all 3418 schools in mainland Finland. Of the volunteering schools, 78 primary schools covering grades 3–6 and 78 secondary schools covering grades 7–9 representing all five provinces in mainland Finland were randomly assigned to the intervention or control condition. Subsequently, parents were sent information letters including an active consent form. Active parental consent was obtained from 91.7 percent of the target sample in grades 3–6 and from 87.4 percent of the target sample in grades 7–9. It is important to note that for the current study, we used data from control schools only to avoid unrepresentative associations between the study variables due to the intervention.

The data for the younger cohort were collected in May 2007, December 2007 and May 2008. The number of control school students participating in any of the waves was 3904 (50.3 percent boys; $M$ age = 11.2 years, $SD = .91$) from 212 classrooms ($M$ class size was 19.4 students) in 38 schools. This is excluding 199 students who did not provide any data at any occasion and hence were not part of this study. Of these 3904 students, 51.7 percent participated in all three waves.

The data for the older cohort were collected in May 2008, December 2008, and May 2009. The number of control school students participating in any of the waves was 4492 (48.8 percent boys; $M$ age = 14.4 years, $SD = .90$) from 254 classrooms ($M$ class size was 19.4 students) in 50 schools. This is excluding 289 students who did not provide any data at any occasion and hence were not part of this study. Of these 4492 students, 51.7 percent participated in all three waves.
size was 19.5 students) in 34 schools. This is excluding 334 students who did not provide any data at any occasion and hence were not part of this study. Of the 4492 students, 53.5 percent participated in all three waves. Most students were native Finns; the proportion of immigrants in both cohorts was 2.5 percent. Details on attrition are presented elsewhere (Kärnä et al., 2011, 2013). We included all students in our study irrespective of whether they provided data at all three waves (see cross-lagged path models in the Results section).

Procedure

Students completed Internet-based questionnaires during regular school hours, under supervision of their teachers who received detailed instructions 2 weeks prior to data collection. Students were assured that their answers would not be revealed to teachers or parents and that their participation was voluntary. In addition, teachers were offered support through phone or email prior to and during data collection. The order of the questions, items, and scales in the questionnaire was extensively randomized to alleviate any systematic order effect. At the beginning of the questionnaire, the term ‘bullying’ was defined for the students based on the Olweus’ (1996) definition, which emphasizes the repetitive nature of bullying and the power imbalance between the bully and the victim.

Measures

Self-reported Bullying and Victimization. To measure bullying and victimization, we used the revised Olweus bully/victim questionnaire (Olweus, 1996). Bullying was measured with one general question ‘How often have you bullied others at school in the last couple of months?’ followed by 10 items that asked about different forms of bullying (e.g., ‘I threatened someone or forced him/her to do things he/she wouldn’t like to do’, ‘I spread lies about someone and get others to dislike him/her’). Similarly, victimization was measured with one general question ‘How often have you been bullied at school in the last couple of months?’ followed by 10 items representing forms of victimization (e.g., ‘I was hit, kicked, or pushed’, ‘I was called nasty names or laughed in my face or hurt by insults’). Students answered all items on a 5-point scale (0 = not at all, 4 = several times a week). The scores on the 11 items asking about bullying were averaged and the same was done for the 11 items asking about victimization to create two reliable scales (Cronbach’s alphas ranged from .81 to .94 across waves and cohorts).

Peer Acceptance and Rejection. Students were asked to nominate the classmates they liked most and liked least to assess peer acceptance and rejection, respectively (cf. Coie et al., 1982). Students could nominate an unlimited number of peers, except for the first measurement wave in the younger cohort (grades 3–6) in which this number was restricted to three due to a technical issue. This means that the maximum number of outgoing nominations differed between the first wave of the younger cohort, and the subsequent waves and the older cohort. The maximum number of nominations one could receive, though, was always the same across waves and cohorts and depended on the number of nominators (i.e., the number of classmates). To account for these differences in class size, for each student the received nominations per item were summed and divided by the number of nominators. As such, scores on peer acceptance and peer rejection could vary from .00 to 1.00 (proportions).
Perceived Popularity. Finally, students were asked to nominate up to three classmates who are generally perceived as most popular, and again the number of received nominations were summed and divided by the number of nominators, resulting in proportion scores for perceived popularity ranging from .00 to 1.00.

Results

Descriptive Statistics

Table 1 shows the means of all study variables, separately for cohort and gender and significant differences indicated by different superscripts. A multivariate analysis of variance (MANOVA) with gender and cohort as between-subject factors was performed to test mean differences in study variables between genders and/or cohorts. Significant multivariate effects were found for gender \( F(15, 4166) = 15.43, p < .001, \) partial \( \eta^2 = .05 \), cohort \( F(15, 4166) = 234.58, p < .001, \) partial \( \eta^2 = .46 \), and there was a significant gender \( \times \) cohort interaction \( F(15, 4166) = 4.54, p < .001, \) partial \( \eta^2 = .02 \). These results were followed up by univariate tests of gender by cohort differences in all study variables (available from the first author).

Overall, boys scored higher than girls on both bullying and victimization. The older cohort scored higher than the younger cohort on bullying at T1 and T3 whereas on bullying at T2 and victimization across time points the older cohort scored lower. For

Table 1. Means and Standard Deviations of the Study Variables for Cohorts and Genders Separately

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total</th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bullying T1</td>
<td>.13</td>
<td>.25</td>
<td>.16</td>
<td>.30</td>
<td>.10</td>
<td>.18</td>
</tr>
<tr>
<td>Bullying T2</td>
<td>.30</td>
<td>.60</td>
<td>.36</td>
<td>.63</td>
<td>.23</td>
<td>.54</td>
</tr>
<tr>
<td>Bullying T3</td>
<td>.13</td>
<td>.31</td>
<td>.18</td>
<td>.39</td>
<td>.09</td>
<td>.19</td>
</tr>
<tr>
<td>Victimization T1</td>
<td>.31</td>
<td>.45</td>
<td>.31</td>
<td>.46</td>
<td>.30</td>
<td>.44</td>
</tr>
<tr>
<td>Victimization T2</td>
<td>.53</td>
<td>.89</td>
<td>.56</td>
<td>.90</td>
<td>.50</td>
<td>.88</td>
</tr>
<tr>
<td>Victimization T3</td>
<td>.29</td>
<td>.49</td>
<td>.32</td>
<td>.55</td>
<td>.27</td>
<td>.44</td>
</tr>
<tr>
<td>Peer acceptance T1</td>
<td>.13</td>
<td>.10</td>
<td>.13</td>
<td>.10</td>
<td>.14</td>
<td>.09</td>
</tr>
<tr>
<td>Peer acceptance T2</td>
<td>.22</td>
<td>.12</td>
<td>.21</td>
<td>.12</td>
<td>.22</td>
<td>.12</td>
</tr>
<tr>
<td>Peer acceptance T3</td>
<td>.12</td>
<td>.10</td>
<td>.11</td>
<td>.11</td>
<td>.13</td>
<td>.10</td>
</tr>
<tr>
<td>Peer rejection T2</td>
<td>.18</td>
<td>.14</td>
<td>.21</td>
<td>.15</td>
<td>.16</td>
<td>.12</td>
</tr>
<tr>
<td>Popularity T1</td>
<td>.12</td>
<td>.18</td>
<td>.12</td>
<td>.17</td>
<td>.12</td>
<td>.18</td>
</tr>
<tr>
<td>Popularity T2</td>
<td>.11</td>
<td>.17</td>
<td>.11</td>
<td>.17</td>
<td>.10</td>
<td>.16</td>
</tr>
<tr>
<td>Popularity T3</td>
<td>.10</td>
<td>.15</td>
<td>.10</td>
<td>.15</td>
<td>.10</td>
<td>.15</td>
</tr>
</tbody>
</table>

Note: Different superscripts indicate that means differed significantly at \( p < .01 \).
peer acceptance, the older cohort had higher scores than the younger cohort, and within cohort there were no significant gender differences. Boys had higher scores than girls, though, on peer rejection in both cohorts, and for the older cohort the scores on peer rejection at T1 and T3 were higher and at T2 lower than the younger cohort. Scores on perceived popularity did not differ between cohorts or genders across all three time points.

Cross-lagged Path Models

Cross-lagged longitudinal path models were computed in Mplus 7.11 (Muthén & Muthén, 1998) using full information maximum likelihood estimation with robust standard errors. This estimation procedure has two substantial advantages over conventional linear regression: full information maximum likelihood estimation takes into account all available pieces of information and avoids listwise or pairwise deletion. Maximum likelihood estimation with robust standard errors (MLR) corrects for multivariate non-normality in the data, which was deemed necessary given the variables used here. We additionally corrected the analyses for clustering in our data caused by students being nested in classrooms.

For each association (bullying victimization with acceptance, rejection, and popularity), we computed separate models, as correlations between the three social indices were modest but significant (see Table 2). We computed models for the younger and older cohorts and tested for cohort effects by constraining paths to be equal in both models. This constrained model was compared with an unconstrained model in which paths were free to vary across cohort samples and model fit was compared using

Table 2. Correlations between Social Status Indices for Each Wave and Cohort

<table>
<thead>
<tr>
<th>Wave 1</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Acceptance</td>
<td>—</td>
<td>—</td>
<td>.53**</td>
</tr>
<tr>
<td>2. Rejection</td>
<td>-.40**</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>3. Popularity</td>
<td>.37**</td>
<td>-.10**</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wave 2</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Acceptance</td>
<td>—</td>
<td>-.41**</td>
<td>—</td>
</tr>
<tr>
<td>2. Rejection</td>
<td>-.38**</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>3. Popularity</td>
<td>.35**</td>
<td>-.10**</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wave 3</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Acceptance</td>
<td>—</td>
<td>—</td>
<td>.60**</td>
</tr>
<tr>
<td>2. Rejection</td>
<td>-.33**</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>3. Popularity</td>
<td>.32**</td>
<td>-.06**</td>
<td>—</td>
</tr>
</tbody>
</table>

*Note: Above the diagonal for grades 3–6 (young cohort) and below the diagonal for grades 7–9 (old cohort). ** p < .01.*
Satorra–Bentler difference test, which is used in a similar fashion as a standard $\chi^2$ difference test but accounts for MLR estimation. If a fully constrained model fits the data equally well as an unconstrained model, the constrained model is favored in terms of model parsimony. The same procedure was applied to examine gender differences. Satorra–Bentler comparisons of model fit revealed significant cohort differences for each model, that is, cross-lagged associations between bullying, victimization, and acceptance, rejection, and perceived popularity were not equal across the younger and older cohorts: $\text{TRdBullying-Victimization-Acceptance} = 309.23$; $\text{TRdBullying-Victimization-Rejection} = 298.07$; $\text{TRdBullying-Victimization-Popularity} = 413.42$; all based on $\Delta df = 26$ and $\chi^2$ critical value $= 38.89$. Thus, we conducted gender comparisons separately by cohort for all three models. Satorra–Bentler comparisons of model fit yielded significant gender differences for all models within each cohort (TRd varied from 108.78 to 175.48 with $\Delta df = 26$ and $\chi^2$ critical value $= 38.89$). Therefore, all three models were computed separately for girls and boys within cohort. Table 3 shows the model fit indices for all final models, suggesting excellent model data fit throughout.

**Peer Acceptance.** The model testing associations with peer acceptance for the younger sample is presented in Figure 1, and shows that for both genders victimization at T1 was predictive of lower peer acceptance at T2 whereas higher levels of peer acceptance at T2 predicted less victimization at T3, after controlling for stability in peer acceptance and victimization. After taking into account the stability of the constructs, the only longitudinal association for bullying with peer acceptance was found for boys, showing that bullying at T2 was predictive of less peer acceptance at T3. In addition, for both genders, there was a strongly negative concurrent association between peer acceptance and victimization at T1 whereas no such concurrent associations between bullying and peer acceptance were found. Concurrent associations between bullying and victimization were large across all three time points for both genders. Depending on gender, the model explained 30–32 percent of the variance in peer acceptance at T2 and at T3, as well as 5–7 percent of the variance of bullying at T2 and 12–24 percent at T3, and 8–9 percent of the variance in victimization at T2 and 17–28 percent at T3 (all $p < .001$).

The peer acceptance model for the older sample is presented in Figure 2 and shows that here victimization was predictive of lower peer acceptance across all time points, but only significantly for girls between T1 and T2. Across all time points, a negative

<table>
<thead>
<tr>
<th>Model</th>
<th>$X^2$</th>
<th>$df$</th>
<th>$p$</th>
<th>RMSEA</th>
<th>CFI</th>
<th>srmr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptance, young cohort</td>
<td>48.64</td>
<td>20</td>
<td>.01</td>
<td>.027 (.017–.037)</td>
<td>.998</td>
<td>.022</td>
</tr>
<tr>
<td>Acceptance, old cohort</td>
<td>39.04</td>
<td>20</td>
<td>.01</td>
<td>.021 (.011–.030)</td>
<td>.991</td>
<td>.030</td>
</tr>
<tr>
<td>Rejection, young cohort</td>
<td>36.91</td>
<td>20</td>
<td>.01</td>
<td>.021 (.010–.031)</td>
<td>.993</td>
<td>.020</td>
</tr>
<tr>
<td>Rejection, old cohort</td>
<td>33.21</td>
<td>20</td>
<td>.03</td>
<td>.017 (.005–.027)</td>
<td>.994</td>
<td>.028</td>
</tr>
<tr>
<td>Popularity, young cohort</td>
<td>48.33</td>
<td>20</td>
<td>.01</td>
<td>.027 (.017–.037)</td>
<td>.988</td>
<td>.024</td>
</tr>
<tr>
<td>Popularity, old cohort</td>
<td>40.45</td>
<td>20</td>
<td>.01</td>
<td>.021 (.012–.031)</td>
<td>.994</td>
<td>.031</td>
</tr>
</tbody>
</table>

CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; srmr = Standardized root mean square residual.
association between peer acceptance and victimization was yielded for both genders, and peer acceptance protected against victimization over time between T1 and T2. Once the stability of all constructs was taken into account as well as concurrent associations between bullying and victimization, which were again stable and high across all time points and especially at T3, the model yielded no longitudinal or concurrent associations between bullying and peer acceptance. The amount of explained variance varied from 13 percent for bullying at T2 to 43 percent for peer acceptance at T3 (all $p < .001$).
Peer Rejection. Associations between bullying, victimization, and peer rejection for the younger cohort are shown in Figure 3. After controlling for stability, peer rejection at T1 predicted higher levels of bullying at T2 for boys whereas bullying did not predict peer rejection. In addition, the model yielded a positive concurrent association between peer rejection and bullying at T1. Similarly, positive (and even stronger) concurrent associations across all time points were found between peer rejection and victimization. Furthermore, peer rejection predicted victimization across time points whereas the reverse pattern, victimization at T1 predicting peer rejection at T2, held only for girls. The model explained between 8 percent (bullying at T2) and 43 percent (peer rejection at T2) of the variance in dependent variables (all \( p < .001 \)).

Figure 4 depicts the peer rejection model for the older cohort. After controlling for stability and concurrent associations between bullying and victimization, peer rejection predicted higher levels of bullying at T3 but only for boys. Paths from bullying to peer rejection were not significant. For both genders, there was a significant concurrent association between peer rejection and bullying at T1, and only for girls at T2. In addition, peer rejection at T1 predicted more victimization at T2 for both genders and only for girls between T2 and T3 whereas the reverse pattern, victimization predicting peer rejection, held only for girls across all time points. Again, compared with those with bullying, large concurrent associations were found between peer rejection and victimization at T1 and T2. The model explained between 14 percent (bullying at T2) and 50 percent (peer rejection at T3) of the variance in dependent variables (all \( p < .001 \)).

Perceived Popularity. Associations between bullying, victimization, and perceived popularity for the younger cohort are shown in Figure 5. Once the stability of the constructs and the concurrent associations between bullying and victimization were taken into account, the model yielded only two significant longitudinal paths between popularity and involvement in bullying, and two concurrent paths. For boys, bullying was positively associated with perceived popularity at T1 whereas only for girls,
perceived popularity at T2 predicted higher engagement in bullying at T3. In addition, for girls, there was a negative concurrent association between perceived popularity and victimization at T1 whereas only for boys there was a longitudinal protective effect of perceived popularity at T1 on victimization at T2. Between 5 percent (bullying at T2) and 37 percent (popularity at T3) of the variance in dependent variables was explained by the model.

For the older cohort, the model looked slightly different, as depicted in Figure 6. After accounting for stability and concurrent associations between bullying and victimization, a positive concurrent association between perceived popularity and

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Figure 4. Standardized Associations between Peer Rejection, Bullying, and Victimization for the Older Cohort, Before the Dash for Girls (N = 2300) and Behind the Dash for Boys (N = 2192).
* = p < .05, ** = p < .01.

Figure 5. Standardized Associations between Perceived Popularity, Bullying, and Victimization for the Younger Cohort, Before the Dash for Girls (N = 1942) and Behind the Dash for Boys (N = 1962).
* = p < .05, ** = p < .01.
bullying was found at T1 for both genders. No longitudinal associations between bullying and perceived popularity were found. In addition, the model yielded negative concurrent associations between perceived popularity and victimization but only for boys at T1 and only for girls at T2, suggesting that higher popularity was associated with less victimization. In addition, victimization at T1 was predictive of lower popularity at T2 but only for boys. Between 13 percent (bullying at T2) and 58 percent (popularity at T3) of the variance in dependent variables was explained by the model.

To check the robustness of our findings, we additionally ran the same models that included longitudinal paths between bullying and victimization. None of the results reported in this manuscript were impacted by the inclusion of these longitudinal paths except for one rejection to bullying path for boys, which did not remain significant. As we did not aim to predict bullying by victimization and vice versa, and given the complexity of the models and their interpretation, we refer the interested reader to the first author of the manuscript in requesting these results.

Discussion

The current study set out to examine the longitudinal interplay between bullying, victimization, and social status. Using a transactional model (Sameroff & MacKenzie, 2003) as guidance, we estimated cross-lagged path models to study the concurrent, longitudinal, and bidirectional associations of bullying and victimization with peer acceptance, peer rejection, and perceived popularity in two cohorts covering either grades 3–6 or grades 7–9. Furthermore, we examined whether these associations differed across developmental stages (i.e., primary and secondary school) and across genders. The results of our study corroborate the complexity of the longitudinal interplay between bullying, victimization, and social status in showing that both direction and strength of associations differed by type of peer status (peer acceptance, peer rejection, or perceived popularity, and bullying vs. victimization), age, and gender. We will discuss particularly noteworthy differences in these associations and conclude with suggestions for future research.
Type of Peer Status

There were several important differences in associations between bullying, victimization, and social status depending on the type of peer status. Overall, more significant associations, concurrent as well as longitudinal, were found for peer rejection than for peer acceptance, regardless of whether they involved bullying or victimization. We hypothesized that peer rejection—a negative experience—has stronger associations with bullying involvement than peer acceptance—a positive peer experience—which is consistent with other literature (Dijkstra, Lindenberg, & Veenstra, 2007; Tseng et al., 2013). It might be the case that being accepted by peers is considered normative whereas rejection is not and that, as a consequence, rejection is more strongly (negatively) related to behavioral adjustment, in particular to bullying and victimization, than acceptance. Next, even fewer associations with perceived popularity were found in both cohorts. Perceived popularity is different from peer acceptance-rejection in that it constitutes a reputation of visibility, dominance, and power among peers rather than being a qualitative aspect of peer relations. Being nominated by peers as popular, that is, standing out in the peer group, might therefore be exceptional and may also depend on factors other than involvement in bullying (Cillessen & Rose, 2005). More specifically, children who are perceived as popular are known to strategically use aggressive behavior in combination with prosocial behaviors to manipulate their peers (Hawley, 2003), and they often possess other peer-valued characteristics, such as physical attractiveness and wearing stylish clothes (Vaillancourt et al., 2003).

In addition, across cohorts and genders, our study showed that more significant longitudinal associations between victimization and sociometric status were found than for bullying. In addition, associations with victimization were often bidirectional, which is in line with a transactional model (Sameroff & MacKenzie, 2003). In other words, victimization contributed to lower sociometric status (lower peer acceptance or higher peer rejection) and vice versa. In addition, concurrent associations with peer rejection and acceptance were more often present and larger in size for victimization than for bullying. Both findings, together with the negative concurrent associations with perceived popularity, indicate that victims are worse off than bullies, not only in terms of social adjustment in the peer group but also in terms of their increased relative risk for other adjustment problems given the consistency in the peer-related difficulties they are faced with (Arseneault et al., 2010). Important to realize here is that bullying can be a behavioral reaction to social status whereas victimization cannot and is best regarded as a condition caused by peers, just like social status is. Hence, it makes sense that associations between social status and victimization can be—and indeed are—stronger or more likely to exist than those for bullying.

Age-related Differences

All models that were tested in the current study differed between younger (primary school) and older (secondary school) cohorts. We hypothesized that in secondary school, stability of constructs over time would be higher whereas associations between bullying and sociometric status (i.e., peer acceptance and rejection) would be smaller compared with primary school. Our findings showed that stability in the concepts was higher in the older cohort (additional analyses confirmed these differences, available on request from the first author). Although fluctuation in bullying and social status can be expected during the transition period to secondary school (Pellegrini & Long,
2002), in secondary school involvement in bullying and victimization apparently is even more stable than in primary school. We hypothesized this to be due to the developmental changes that the younger (primary school) cohort is undergoing. That is, in late childhood, children have many changes that are occurring at the same time—both biologically as well as cognitively, relationally, and behaviorally (Eccles et al., 1993). This was likely reflected in the differences we found between the younger and the older cohort in terms of stability of behavior.

In addition, only a few associations with perceived popularity were found, both in late childhood (younger cohort) and in adolescence (the older cohort). Because adolescents seem to prioritize popularity over socially accepted behaviors (LaFontana & Cillessen, 2010) while their attitudes toward bullying become more permissive (Swearer & Cary, 2003), we hypothesized that bullying may occur on a larger scale in secondary school and that the benefits of such behavior (being perceived as popular) are larger. In addition, the context of secondary school is different from primary school such that secondary schools are usually larger with more diverse peer groups and teachers who know children less well because they are teaching only one course per class. This context may make bullying more likely than in primary school. In line with this, we found that bullying was positively associated with a popular status whereas victimization was negatively associated with popularity. These associations, though, were found also in the younger cohort (additional analyses confirmed the absence of differences in longitudinal associations, available on request from the first author). Importantly, against our hypotheses, there were no longitudinal associations between perceived popularity and bullying among adolescents. Other research did find such effects for aggressive behavior (e.g., Cillessen & Mayeux, 2004), and maybe such effects would have been found if we had not controlled for stability of the constructs (which was high) or if we had examined aggressive behavior instead of bullying. The only longitudinal effect in the adolescent cohort was from victimization to lower perceived popularity, and only for boys. Overall, the findings highlight that stability as well as concurrent associations between bullying, victimization, and social status vary across the cohorts, and that these age-related differences should be taken into account when interpreting these associations.

**Gender Differences**

Gender differences were found in all models across cohorts. We had no specific hypotheses on gender differences due to mixed findings from previous research. For boys, no concurrent or longitudinal associations between bullying and peer acceptance were observed once stability of the constructs was accounted for except for one in the younger cohort. However, peer rejection predicted bullying for boys in both cohorts, both concurrently and longitudinally. Reverse links, that is, bullying predicting peer rejection, did not hold. These results put findings from previous cross-sectional research (Goossens et al., 2006; Salmivalli et al., 1996; Vaillancourt et al., 2003) in a different perspective, as these findings are often interpreted as peer rejection (or low acceptance) being the result of bullying. Apparently, when stability and bidirectionality are accounted for, the strongest direction of the association—for boys—is from peer rejection to bullying. It might be that rejected boys lack healthy peer interactions in which they can develop and experience positive behavior (Dodge et al., 2003; Newcomb et al., 1993). As such, rejected boys may be more likely to be socially maladjusted, which could be expressed by displaying bullying behavior (Prinstein
& Cillessen, 2003), given that boys were already more likely than girls to display aggressive and particularly bullying behavior.

For girls, no concurrent or longitudinal associations between peer acceptance and bullying were found. Other cross-sectional research on bullying (Salmivalli et al., 1996) and aggression (Lee, 2009) concluded that adolescent girls who bully have a controversial status in the peer group. This controversial status entails that female bullies receive nominations for being liked as well as for being disliked, but we did not find support for such claims once stability of the constructs and cross-lagged predictions were accounted for. For girls we only found concurrent links between peer rejection and bullying (the differences between genders in concurrent links were established in additional analyses, available on request from the first author). This again highlights the caution in interpreting associations when opposite paths and stability are not controlled for. Furthermore, although for both genders rejection stably predicted victimization, only for girls was the opposite direction stably found, that is victimization predicting greater subsequent rejection. This indicates that for girls, the peer group may be more important than for boys when we keep in mind that both peer rejection and victimization can seriously impact later behavioral and emotional development (Buehler, 2006; Ttofi et al., 2011a).

**Strengths and Limitations**

Our study tried to overcome limitations present in most previous research on bullying, victimization, and social status by simultaneously accounting for concurrent, longitudinal, and bidirectional associations. Second, we distinguished between peer acceptance, peer rejection, and perceived popularity, and showed that associations between the constructs indeed differed. Third, we accounted for age-related and gender differences in these associations by using two cohorts covering late childhood (primary school, grades 3–6) and adolescence (secondary school, grades 7–9). Fourth, we accounted for associations between bullying and victimization, and as a result we had a more rigorous test of their ‘pure’ associations with social status. Last, we used a combination of peer and self-reports in measuring the constructs, and as such avoided biased associations due to shared method variance.

However, some limitations must be kept in mind when interpreting the results. First, we covered a relatively short time span of 1 year within cohorts. To examine true developmental changes, a longer time span might be necessary. Second, as a result of studying two different cohorts, we missed the actual transition year to secondary school in our data, for which interesting changes may occur in bullying, victimization, and social status (cf. LaFontana & Cillessen, 2010; Pellegrini & Long, 2002). Third, our choice to use self-reports in combination with peer reports to prevent shared method variance in the associations restricted us from looking at by whom children are victimized or who they bully. New questions that went beyond the scope of the current study await to be addressed in future research, examining who children bully and by whom children are victimized, and by whom they are accepted or rejected. These associations may depend for instance on factors like gender (see, e.g., Dijkstra et al., 2007; Veenstra, Lindenberg, Munniksma, & Dijkstra, 2010). Last, it is important to note that some effects were small, and although being statistically significant these effects need to be replicated in other samples to evaluate their theoretical and practical significance.
Conclusion

The findings of the current study may help tailor current and future antibullying programs as it was shown that social status in the peer group is key to involvement in bullying, but that these associations are dependent on gender and age. An important next step for future research is the search for moderators of these associations other than gender and developmental stage. In particular, given that bullying, victimization, and social status are all related to the peer context, it would be relevant to examine how contextual factors influence the direction and the strength of the associations as found in the current study, such as the descriptive classroom norms on bullying and victimization (see Sentse, Scholte, Salmivalli, & Voeten, 2007) or descriptive norms set by the popular children in the classroom (see Dijkstra, Lindenberg, & Veenstra, 2008).

References


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