

behaviors (Espelage, Holt, & Henkel, 2003; Witvliet et al., 2010). Less is known, however, about the processes that cause this within-group similarity in bullying behaviors. Two fundamental processes occur in the peer group that capture the interplay between peer relations and behavior: selection and influence processes. Selection processes reflect the extent to which behavior affects the formation of friendships; influence processes reflect the way friendships affect individual behaviors. So far, these processes are generally understudied regarding victimization and therefore not well understood. The current paper focused on the development of relational and physical victimization over time in grade-level friendship networks in two middle schools. By using longitudinal social network analysis, selection and influence processes with regard to both forms of victimization were examined simultaneously.

Children's friendships serve important developmental functions (Bukowski, Newcomb, & Hartup, 1998; Hartup & Stevens, 1997). Friends can provide each other with support, affection, and a sense of belonging, which becomes of increasing importance especially for adolescents who spend more time with peers than parents (Agnew, 2003; Buehler, 2006). In general, having more friends has been related to less victimization (Fox & Boulton, 2006; Graham & Juvonen, 1998), although the direction of this association is not always clear. Several investigators (e.g., Boulton, Trueman, Chau, Whitehand, & Amatya, 1999; Hodges, Malone, & Perry, 1997; Pellegrini, Bartini, & Brooks, 1999) have proposed that having one or more supportive friends protects children against victimization, based on their finding that children without friends were more likely to be victimized than children with friends. This is referred to as the friendship protection hypothesis (Hodges, Boivin, Vitaro, & Bukowski, 1999). Hodges et al. (1999) also found that victimization was less detrimental (not related to increased internalizing or externalizing behaviors) for children with a mutual best friend.

Although having friends can protect adolescents from being victimized, it might be hard for victimized youth to obtain and maintain protective friendships. Victims of bullying are often rejected and viewed negatively by their peers, and lack important social skills to gain acceptance from peers (Fox & Boulton, 2005; Hodges et al., 1997; Sapouna et al., 2012). The pool of possible friendships for victimized youth therefore is limited, implying that victims may have no other choice than to "select" other victims as friends. This is known as default selection (cf. Sijtsema, Lindenberg, & Veenstra, 2010). Indeed, victims often have victimized friends (Haselager, Hartup, van Lieshout, & Riksen-Walraven, 1998; Hodges et al., 1997; Salmivalli, Huttunen, & Lagerspetz, 1997). However, it is not clear whether adolescents choose

each other as friends based on pre-existing similarity in victimization (selection) or whether they become similar in being victimized over time (influence). Befriending victimized youth can be regarded as risky in the eyes of non-victimized peers, because it may pose a risk to become victimized as well. Indeed, friends of victimized youth are likely to be rejected in the peer group (Ray, Cohen, Secrist, & Duncan, 1997). It can thus be argued that peers avoid befriending victimized youth to prevent becoming rejected or even victimized themselves (cf. Boulton, in press; Bukowski & Sippola, 2001). Whether friends of victimized youth are indeed at risk for being victimized over time as well has not yet been tested.

Thus, two processes may link friendship and victimization. First, selection may result in victimized children befriending other victimized children while non-victimized children avoid befriending victimized peers and prefer to affiliate with other non-victimized children. Second, peer processes may result in friends of victimized youth becoming (more) victimized over time as well. These processes may operate differently for the different forms of victimization. As physical victimization is overt and highly visible to peers, it can be hypothesized that these victims clearly stand out in the peer group and are more likely to be avoided, thus have more trouble finding friends (strongest "default selection") than the victims of relational victimization. Also, these victims may benefit from befriending each other by physically standing stronger against the bullies. In addition, the processes may operate differently for different types of victims. Although most victims are passive, others also display aggression and provoke peers; they are called provocative victims (Olweus, 1978) or bully-victims (e.g., Veenstra et al., 2005). Their victimization may be influenced by their own aggressive behavior rather than by the characteristics of their friends. By controlling for aggressive behavior, we can test whether change in victimization is influenced by victimization of friends or by own aggression.

We used longitudinal social network modeling to examine selection and influence of victimization in friendships across three years in middle school. In this case, selection describes how victimization affects the formation of friendships; influence describes how friends affect changes in victimization (Veenstra & Dijkstra, 2011). Victimization is not a behavior that adolescents *choose* to exert or change in order to become more similar to their friends. Therefore, one might think here of peer influence as a "contagion" effect (cf. Kiuru, Burk, Laursen, Nurmi, & Salmela-Aro, 2012, in their study on depression). However, to be consistent with previous network studies, the term peer influence is used here. Until recently it was difficult to empirically test

selection and influence simultaneously, as conventional analysis methods cannot account for confounding network dynamics. For example, friends of friends are likely to become friends as well (transitivity), rather than that they become friends because they are similar in behavior. Thus, when structural network effects such as transitivity are not controlled, peer selection might be overestimated (Steglich, Snijders, & Pearson, 2010). Longitudinal social network analysis makes it possible to disentangle selection and influence while controlling for these structural network effects (see also Dijkstra, Berger, & Lindenberg, 2011; Kiuru et al., 2012). In addition, we accounted for gender, ethnicity, and aggressive behavior.

METHODS

Participants and Procedure

Participants were enrolled in a larger longitudinal study on the social and academic development of youth that was ethically approved by the IRB of the University of Connecticut. The data for this study were collected in Grades 6–8 in two middle schools. The schools served lower and middle class families in a medium-sized town in the northeastern United States. Because we were interested in changes in victimization and friendships, participants were only included if information was available for all three waves. This yielded a target sample of 220 students in School 1 (47% girls) and 260 students in School 2 (52% girls), representing 62% and 68%, respectively, of all students in the schools. This subsample was representative for the larger sample in our study (see attrition analyses below).

The ethnic composition of the sample across the 3 years was 72% Caucasian, 18% African American, and 10% Hispanic in School 1, and 78% Caucasian, 12% African American, 8% Hispanic, and 2% Asian American in School 2. Ethnicity was included in the analyses as a dichotomous variable (ethnic minority = 1, majority/Caucasian = 0). The percentage of minority students was 28% in School 1 and 22% in School 2. Parental consent was obtained for all participating adolescents prior to testing; verbal assent was also obtained from the participants themselves. Of the initially approached students, <1% refused to participate.

In the spring, students filled in questionnaires in their English classrooms in 90-min sessions. All questionnaires were administered by trained graduate and undergraduate research assistants. All confidentiality procedures were explained. Students were told that the data would be entered and stored using code number instead of names. They were also told that only the researchers would see the data, that participation was

voluntary, and that they could leave blank any questions they did not wish to answer.

Participants completed a sociometric measure each year consisting of a booklet in which they recorded their choices. Each page of the booklet included one sociometric question followed by the names of the students in their grade with permission to participate, sorted alphabetically by first name, and preceded by a code number. Participants were asked to read each question, think about the students who best fit the description, and then circle their code number. Nominations were unlimited, including same- and other-gender peers, but not themselves.

Measures

Best friends. The sociometric measure included a friendship question (“The people in your grade who are your best friends”). This was used to determine whether a best friendship existed between any pair of students in each grade (see Table 1 for the total number of ties, means of friendship nominations given and received, and reciprocity of nominations across grades and schools). Note that in the analyses, all friendship nominations given and received were used, regardless of reciprocity. The SIENA program accounts for reciprocity via the inclusion of the reciprocity network parameter (see analysis strategy).

Victimization. The sociometric instrument included questions for relational victimization (“The people in your grade who have lies, rumors, or mean things said about them”) and physical victimization (“The people in your grade who get hit, pushed, or kicked by others”). Nominations received were counted for each question and z-standardized within grade. Because of the computational demands of the estimation process, SIENA requires ordered categories as dependent variables. Hence, the continuous victimization scores were transformed into 4-point ordinal scales. We used increments of .50 around the mean of the continuous z-score as cut-off points (lowest through $-0.5 = 1$; -0.5 through $0 = 2$; 0 through $0.5 = 3$; 0.5 through highest = 4), with sufficient numbers of adolescents in each category (see Table 1).

Control variables. Participants also nominated peers for physical aggression (“People who fight a lot”) and relational aggression (“People who ignore others”). Nominations received again were counted and z-standardized within grade. The Grade 6 scores for each were used as baseline control variables for changes in victimization across grades.

Attrition Analyses

Students included in the study were compared with excluded students. In School 1, there were no significant

TABLE 1. Descriptive Statistics for Friendship Networks and Relational and Physical Victimization

Within Grades	School 1 (N = 220)			School 2 (N = 260)		
	Grade 6	Grade 7	Grade 8	Grade 6	Grade 7	Grade 8
Friendship network						
Relationships (total)	2,225	1,635	1,964	1,956	1,797	1,946
Nominations given (mean)	10.11 ^a	7.43 ^b	8.93 ^a	7.52 ^a	6.91 ^a	7.49 ^a
Nominations received (mean)	9.88 ^a	7.05 ^b	8.81 ^c	8.04 ^a	6.94 ^b	7.57 ^a
Reciprocity (proportion)	.21	.20	.19	.15	.18	.20
Density (proportion)	.046	.034	.041	.029	.027	.029
Relational victimization						
Mean	2.29 ^a	2.26 ^a	2.26 ^a	2.25 ^a	2.14 ^a	2.16 ^a
SD	.52	.94	.87	1.08	.91	.92
Moran's I	.078	.079	.089	.085	.100	.137
Physical Victimization						
Mean	2.36 ^a	2.30 ^a	2.31 ^a	2.07 ^a	2.33 ^a	2.37 ^a
SD	.63	.60	.53	1.01	.61	.62
Moran's I	.053	.108	.110	.162	.091	.118
Transitions						
	Grades 6–7		Grades 7–8		Grades 6–7	
Relational victimization						
Stable (%)	46		50		38	
Decrease (%)	30		25		35	
Increase (%)	24		25		27	
Physical victimization						
Stable (%)	68		77		41	
Decrease (%)	18		13		17	
Increase (%)	14		10		42	

Note. Grade means with a different superscript differ significantly from each other at $P < .05$. Reciprocity and density scores reflect proportion scores (possible range 0–1) of total number of observed friendship ties and total number of possible friendship ties, respectively. Moran's I reflects the degree to which friends have similar victimization scores within one time point.

differences¹ in relational and physical victimization between missing and non-missing students in Grade 6, t 's (73) = 1.58 and 1.33, P 's > .05, Grade 7, t 's(285) = 0.52 and 0.42, P 's > .05, and Grade 8, t 's(251) = 0.67 and 0.72, $P > .05$. In School 2, there were also no significant group differences on both variables in Grade 6, t 's(56) = 1.38 and 1.52, $P > .05$, Grade 7, t 's (64) = 1.85 and 1.74, $P > .05$, and Grade 8, t 's (38) = 1.04 and 1.47, $P > .05$.

Analysis Strategy

Analyses were conducted with RSIENA (Simulation Investigation for Empirical Network Analyses, version R-Siena 2.14). SIENA is an actor-based model for the co-evolution of social networks and individual behaviors over time (Ripley, Snijders, & Preciado, 2012). Estimates are obtained through an iterative Markov Chain Monte Carlo approach; SIENA estimates developmental changes between time points. Changes are modeled in two types of dependent variables: network characteristics (friendship dynamics) and individual behaviors (victimization dynamics). Changes in the friendship network are

selection effects; changes in victimization are influence effects and/or effects of the covariates (gender, ethnicity, baseline aggression). SIENA is designed to test selection and influence simultaneously while controlling for structural network effects (Burk, Steglich, & Snijders, 2007; Steglich et al., 2010).

To avoid multicollinearity and ensure enough power we ran separate models for the two victimization variables. The network effects consisted of *density*, the number of outgoing ties; *reciprocity*, the extent to which best friend choices are reciprocated; and *transitive triplets*, the tendency to become friends with the friends of one's friends. Ignoring these effects would lead to the overestimation of selection effects (Steglich et al., 2010), as they arise from the network dynamics instead of from similarity in behavior, gender, or ethnicity (see below).

We estimated the following selection effects: *victimization alter* is the effect of victimization on being chosen as a friend. A negative effect means that higher levels of victimization decreases the chance of being chosen by peers as a friend (avoidance); *victimization ego* is the effect of victimization on choosing others as friends; and *victimization similarity* is the extent to which adolescents select peers as friends who are similar to themselves in levels of victimization. Similarly, we also included these

¹ t -Values and d 's corrected for inequality of variances.

RESULTS

Descriptive Statistics

Table 1 includes the average number of best friend nominations and the means of the victimization measures among grades and schools; trends which will be accounted for in the behavioral dynamics in the SIENA models (linear shape effect). Physical victimization was the only variable that seemed to differ between schools in the direction of change in means across grades. However, these differences were not significant (see Table 1). In both schools, boys overall scored higher than girls on physical victimization ($t(218) = -2.16, P < .01$ for School 1 and $t(258) = -9.84, P < .01$ for School 2). No overall gender differences were found for relational victimization or friendship nominations. Specific gender and ethnicity differences in the means by grade and school are not reported here but can be provided upon request. In addition, Table 1 shows how many adolescents increased or decreased in incoming nominations for victimization over time; 25–35% of the adolescents decreased and 24–30% increased in relational victimization; 13–18% decreased and 10–18% increased in physical victimization. The only exception was the 42% increase in physical victimization from Grades 6 to 7 in School 2.

Table 2 shows the correlations between the study variables. The two forms of victimization were correlated modestly to strongly between and within Grades 6–8 ($r_s .16-.58$). Friendship correlated negatively with victimization. Both forms of aggression were correlated with both forms of victimization. In general, relational aggression correlated more strongly with relational victimization and physical aggression correlated more strongly with physical victimization.

three selection effects for gender and ethnicity (i.e., the extent to which friendship choices are related to gender or ethnicity of the adolescent). In addition, we added an interaction between *victimization similarity* and gender to test whether the selection-similarity process differs between boys and girls.

With regard to the behavioral dynamics, we included the following effects. *Victimization linear shape* is an intercept expressing the average tendency to low victimization (negative value) or high victimization (positive value). *Victimization quadratic shape* is a feedback effect of victimization on itself (Snijders, van de Bunt, & Steglich, 2010). A negative value indicates a self-correcting effect; a positive value is an accelerating effect (self-reinforcing cf. Snijders et al., 2010). The main effect of interest reflecting influence effects is the *victimization average alter effect*, or the tendency of adolescents to increase in victimization caused by having friends who are more victimized than they are. Gender, ethnicity, and baseline physical and relational aggression were added as covariates. As a result, changes in victimization can be attributed to the victimization of friends over and above the contributions of these individual covariates. Finally, we added the interaction between *victimization average alter* and gender to explore gender differences in influence.

The models were estimated separately for each school using all three time points (Grades 6–8) and then combined in a RSIENA meta-analysis (Snijders & Baerveldt, 2003). This method accounts for variances within and between groups (schools). Hence, the results to be discussed refer to the mean estimates of the parameters and their standard errors for the meta-analyses of relational and physical victimization.

TABLE 2. Correlations Among Friendship Nominations, Relational and Physical Victimization, and Relational and Physical Aggression

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Friendship given Gr.6		.04	.10	.26*	-.05	-.05	.14*	.05	.07	.04	-.01	.05	.21*	.17*
2. Friendship given Gr.7	.31*		.02	-.02	.17*	.21*	-.01	.03	.01	-.06	.05	-.04	.04	-.01
3. Friendship given Gr.8	.31*	.23*		.04	.02	.11	.11	.11	.10	.02	.10	.14*	.09	.04
4. Friendship received Gr.6	.29*	.21*	.04		.09	.11	-.07	.01	-.11	.06	-.02	-.12*	.38*	.32*
5. Friendship received Gr.7	.25*	.33*	.12	.75*		.70*	-.06	-.03	-.03	-.14*	-.01	-.08	-.01	-.01
6. Friendship received Gr.8	.26*	.24*	.18*	.69*	.75*		-.02	-.05	-.04	-.12	.03	-.07	.08	.05
7. Relational Victimization Gr. 6	-.06	-.03	-.14*	-.05	-.02	-.11		.38*	.32*	.36*	.14*	.22*	.36*	.23*
8. Relational Victimization Gr. 7	-.01	-.02	-.14*	-.18*	-.20*	-.21*	.29*		.48*	.23*	.31*	.16*	.33*	.20*
9. Relational Victimization Gr. 8	-.05	-.07	-.17*	-.10	-.09	-.04	.24*	.45*		.15*	.14*	.37*	.24*	.16*
10. Physical Victimization Gr. 6	-.05	-.17*	-.16*	-.02	-.07	-.11	.45*	.32*	.28*		.35*	.50*	.33*	.50*
11. Physical Victimization Gr. 7	-.18*	-.19*	-.10	-.18*	-.21*	-.25*	.47*	.51*	.33*	.38*		.38*	.25*	.40*
12. Physical Victimization Gr. 8	-.14*	-.07	-.16*	-.17*	-.18*	-.26*	.54*	.34*	.25*	.21*	.51*		.11	.32*
13. Relational Aggression Gr. 6	.02	-.05	-.17*	.28*	.14*	.12	.19*	.25*	.22	.50*	.11	.05		.73*
14. Physical Aggression Gr. 6	-.06	-.12	-.19*	.09	-.07	-.02	.31*	.29*	.20*	.35*	.25*	.23*	.70*	

Note. School 1 below the diagonal, School 2 above the diagonal.

* $P < .05$.

Social Network Analyses

Table 3 summarizes the results of the SIENA meta-analyses for relational and physical victimization. The friendship dynamics comprise the network and selection effects. The victimization dynamics consist of the influence effects.

Network effects. The negative density parameter indicated that less than half of all possible friendship relations occurred, that is, students named fewer than half of their grade-mates as friends (not surprisingly). The positive reciprocity parameter indicated that friendship nominations were likely to be reciprocated. The positive transitive triplets parameter indicated that friends of friends were likely to become friends as well.

Selection effects. The positive gender and ethnicity similarity parameters showed that adolescents selected same-gender and same-ethnicity peers as friends. Minority students tended to be nominated more often as friends than majority students, as indicated by the positive ethnicity alter effect. For relational victimization, the negative victimization alter effect shows that victimized adolescents were less likely to be

selected as friends (peer avoidance effect). This was not the case for the targets of physical victimization. Only for physical victimization we found a significant selection-similarity effect, which means that adolescents with similar levels of physical victimization were more likely to become friends than adolescents with different levels. This selection effect was not further qualified by gender. The numbers on the diagonal of Table 4 show that this selection-similarity effect was equally strong at lower and higher levels of physical victimization, revealing that adolescents low in victimization prefer friends low in victimization similar to adolescents high in victimization preferring friends high in victimization. In addition, adolescents with low levels of victimization were far more likely to avoid highly victimized peers (−0.56) than the other way round (−0.05).

Influence effects. The negative (non-significant) linear shape of relational and physical victimization indicated an overall average tendency to lower levels of victimization. The negative quadratic shape for both forms of victimization means that over time, adolescents with higher victimization scores were more likely to turn to lower values, whereas adolescents with lower victimization scores were likely to increase in victimization (self-correcting effect). As there were three measurement points, this effect cannot be due to regression to the mean. The changes in relational victimization were not influenced by gender, ethnicity, or physical aggression, but there was a significant effect of relational aggression. Interestingly, changes in relational victimization were influenced by friends' victimization. This was indicated by the positive average alter effect, meaning that adolescents with friends higher in victimization increased in levels of victimization over time as well, over and above the effects of the covariates. This influence effect was not further qualified by gender. Table 5 shows the relative strength of this peer influence effect for the various average levels of friends' victimization. Comparing the values within a row shows the likelihood of the

TABLE 3. SIENA Estimates of Selection and Influence Effects for Changes in Relational and Physical Victimization Across Grades 6–8 (Meta-Analyses of the Two Schools)

	Relational Victimization		Physical Victimization	
	Est.	SE	Est.	SE
Friendship dynamics				
Density	−2.87*	.01	−2.85*	.04
Reciprocity	1.10*	.13	1.13*	.16
Transitive triplets	.19*	.04	.18*	.05
Gender alter	−.02	.02	.06	.08
Gender ego	.02	.04	−.01	.03
Gender similarity	.52*	.02	.51*	.02
Ethnicity alter	.18*	.04	.18*	.03
Ethnicity ego	.09	.15	.07	.15
Ethnicity similarity	.44*	.07	.44*	.07
Victimization alter	−.08*	.01	−.09	.20
Victimization ego	−.09	.09	.09	.15
Victimization similarity	−.20	.42	.41*	.04
Victimization similarity*gender	.05	.37	−.02	.20
Victimization dynamics				
Linear shape	−.03	.08	−.75	1.60
Quadratic shape	−.28*	.01	−.46	1.24
Average alter	1.41*	.41	1.85	3.12
Average alter*gender	−.08	.15	NA	
Gender	−.25	.14	1.07	.77
Ethnicity	−.07	.04	−.33	.18
Relational aggression	.12*	.04	−.37	.28
Physical aggression	.12	.12	1.02*	.11

Note. Gender: boys = 1. Ethnicity: minority = 1. NA: could not converge. *P < .05.

TABLE 4. Friendship Preference Based on the Levels of Physical Victimization

	Peer			
	1	2	3	4
Adolescent				
1	0.12	−0.11	−0.33	−0.56
2	0.06	0.11	−0.12	−0.34
3	0.01	0.05	0.10	−0.13
4	−0.05	0.00	0.04	0.09

Note. Numbers in the table reflect the strength of attraction for adolescents to select certain peers as friends based on their levels of physical victimization.

TABLE 5. Strength of Peer Influence on the Various Levels of Relational Victimization

	Adolescent			
	1	2	3	4
Friends' average				
1	1.73	0.38	-1.53	-3.99
2	0.01	0.06	-0.44	-1.49
3	-1.72	-0.25	0.65	1.01
4	-3.44	-0.57	1.75	3.50

Note. Numbers in the table reflect the strength of peer influence on certain levels of victimization for the adolescent resulting from the average levels of their friends' victimization.

potential levels of adolescents' victimization, given the average level of their friends' victimization. The differences in the bottom rows were larger than in the top rows, indicating that peer influence toward similarity in victimization was stronger for adolescents with friends high in victimization than for adolescents with friends low in victimization. In other words, adolescents were more likely to increase in victimization when having victimized friends (Row 4) than to decrease in victimization when having non-victimized friends (Row 1).

Such an influence process was not observed for physical victimization. The average alter effect was not significant, nor was its interaction with gender, meaning that changes in physical victimization were not influenced by the victimization of friends. Rather, the significant positive effect of physical aggression indicates that adolescents high in physical aggression were likely to become physically victimized over time. Again, gender, and ethnicity did not significantly contribute to changes in victimization over time.

DISCUSSION

The findings of this study reveal that, in addition to individual characteristics, adolescent friendship formation and levels of victimization are longitudinally interrelated via different processes, depending on the type of victimization. Using social network analysis we were able to disentangle structural network effects, selection effects, and influence processes. First, this study showed that adolescents selected friends who are similar to themselves in levels of physical victimization, next to the previously found preference for same-gender and -ethnicity friends (de la Haye, Robins, Mohr, & Wilson, 2011; Kerr, Van Zalk, & Stattin, 2012). Although this similarity-selection effect was equally strong for low and high levels of victimization, it was shown that adolescents with low levels of victimization were more

likely to avoid highly victimized peers than the other way round. Second, we found that adolescents high in relational victimization were less likely to be selected as friends than their non-victimized peers. This is in line with previous cross-sectional studies (e.g., Mouttapa, Valente, Gallaher, Rohrbach, & Unger, 2004). Third, it was shown that being friends with adolescents high in relational victimization poses a risk, as this increased adolescents' own victimization over time. Note that the opposite trend, that is, low victimization of friends predicting a decrease in victimization, cannot be explicitly modeled in SIENA. We concluded, however, that the peer influence effect was stronger for higher than for lower average levels of friends' victimization. The increase in victimization due to friends' victimization occurred over and above the effects of gender, ethnicity, and baseline relational and physical aggression. Last, no peer influence effect was found for physical victimization; here it seemed that adolescents' own physical aggression primarily contributed to increases in victimization over time. The selection and influence effects that were found applied equally to boys and girls.

Previous studies (using conventional analytic methods) found protective effects of friendship on victimization (e.g., Fox & Boulton, 2006; Hodges et al., 1999), although these findings did not account for confounding structural network effects such as transitivity (the friends of my friends are likely to become my friends as well), and did not differentiate between selection and influence, types of victimization, and types of friends. Extending these previous studies on the protective function of friends, the current study showed that friendship can also exacerbate victimization. Victimized youth were hypothesized to have a hard time finding friends to begin with, as they are often rejected by their peers and unattractive as friends as they may pose a threat to their friend's social standing in the group (Boulton, in press; Hodges et al., 1997; Ray et al., 1997). Indeed, the current study showed that adolescents high in relational victimization were unlikely to be selected as friends and, moreover, the friends they had increased in victimization themselves. This becomes even more relevant in the context of studies that found that victimization can have severe, long-term consequences for mental health, especially for those who are severely bullied and lack social support (Rigby, 2003).

This "contagiousness" of victimization may arise from a social misfit dynamic (see Sentse, Scholte, Salmivalli, & Voeten, 2007; Wright, Giammarino, & Parad, 1986), which entails that persons are likely to be rejected (in this study: victimized) when their behavior deviates from the group norm and hence challenges the wishes of the wider peer group (in this study: befriending a victim). This might be the case if relational victimization takes place

among friends in friendship groups, which is more likely to happen than for physical victimization (especially among girls, see Crick & Nelson, 2002). This could be examined in future research in which the co-evolution of friendship and victimization networks is being modeled simultaneously. To do so, data on who is victimized *by whom* are needed, which were not available for the current study.

This information is also important for prevention and intervention strategies for bullying in school, which are often directed at the group and helping or defending behavior in particular (Salmivalli, 2010). Our results highlight that it may take a lot to help or defend victimized peers, and that not all adolescents are suitable to do so (see also Pöyhönen, Juvonen, & Salmivalli, 2010). Although not tested in this study, peers who do not have a strong or popular standing in the group may be unsuccessful in helping or defending victims and even become victimized themselves. Future research should explore these effects, using peer nominations for defending behavior and popularity in addition to friendship and victimization.

For physical victimization we found a selection effect but no influence effect. We hypothesized that the selection effect, actually a “default selection” effect, would be strongest for physical victimization, as this is overt and visible to peers (Wang et al., 2009). It is likely that physically aggressive students are overtly rejected and victimized by their peers and thus have few friends to choose from except other victims. In addition, these victims may feel stronger sticking together, and by doing so they may even prevent being physically bullied. Again, more research is needed to investigate such underlying mechanisms.

Our results also provide some input for future research on types of victims. Most victims are passive, but some also bully (bully-victims), are provocative, hot tempered, and aggressive (e.g., Pellegrini et al., 1999). The behavior of these victims (i.e., being provocative, aggressive, and retaliating) may intensify their victimization. Consistently, we found that physical aggression predicted an increase in physical victimization, regardless of gender, ethnicity, or friends’ level of victimization. In addition, we found that relational aggression predicted an increase in relational victimization. Of course, we did not distinguish between groups of victims, but our results nevertheless show that aggressive behavior is predictive of being victimized, pointing to the importance to consider individual differences between victims. Future research might do well to categorize victims in passive and aggressive victims and then test whether peer processes differ between them.

This study also had some limitations. First, we did not have information about friendship quality. This could add

to the explanation of why and when certain friends are able to protect adolescents from being victimized whereas others may pose a risk. Second, both the selection and peer influence effects in this study could be confounded by underlying risk factors leading to victimization, such as withdrawn behavior, anxiety, or physical weakness (Hodges et al., 1997). Future studies should control for other well-known risk factors for victimization besides individual aggression. In addition, our control measure of relational aggression was limited to only ignoring others, and did not explicitly refer to social exclusion or gossiping. Third, because of SIENA’s computational demands we had to construct ordered categories for the dependent victimization variables. This implies a loss of information, although we limited it by avoiding dummy variables (for victimized vs. non-victimized adolescents). Fourth, we can only speculate on how “similar” friends become in victimization, as we do not know whether they are bullied by the same or by different peers. There is some evidence that friends who are bullies often share the same victims (Card & Hodges, 2006). Whether bullies form (stable) friendships with each other and target the same victims should be further explored in research using multiplex networks of bullying, victimization, and friendships (Huitsing & Veenstra, 2012).

Despite these limitations, this study clearly showed that selection and peer influence processes play an important role in physical and relational victimization among adolescents in middle school beyond the effects of individual characteristics (in particular aggression). Selection seems to apply specifically to physical victimization (adolescents choosing friends similar to themselves in levels of victimization), whereas peer influence seems to apply specifically to relational victimization (adolescents increasing in victimization over time because of having victimized friends). Thus, in addition to the previously found protective functions of friends, this study revealed that some friends can also exacerbate victimization.

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NOTE ADDED IN PROOF

During the production process, “Mean” and the related data were inadvertently omitted from the “Physical victimization” section of Table I.

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