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Bystanders Matter: Associations Between Reinforcing, Defending, and the Frequency of Bullying Behavior in Classrooms

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Bystanders Matter: Associations Between Reinforcing, Defending, and the Frequency of Bullying Behavior in Classrooms

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This study investigated whether the bystanders' behaviors (reinforcing the bully vs. defending the victim) in bullying situations are related to the frequency of bullying in a classroom. The sample consisted of 6,764 primary school children from Grades 3 to 5 (9–11 years of age), who were nested within 385 classrooms in 77 schools. The students filled out Internet-based questionnaires in their schools' computer labs. The results from multilevel models showed that defending the victim was negatively associated with the frequency of bullying in a classroom, whereas the effect of reinforcing the bully was positive and strong. The results suggest that bystander responses influence the frequency of bullying, which makes them suitable targets for antibullying interventions.

Aggressive and antisocial behaviors have been described as being subject to peer influence. The literature on peer homophily (see Prinstein & Dodge, 2008), for instance, suggests that aggressive children and adolescents tend to select each other as friends (e.g., Haselager, Hartup, van Lieshout, & Riksen-Walraven, 1998) but also influence each other's subsequent antisocial behaviors through socialization (Poulin & Dishion, 1999). Deviancy training (Dishion, Spracklen, Andrews, & Patterson, 1996) refers to the process in which deviant talk (discussions concerning antisocial behaviors and positive mutual reinforcement of such talk) in adolescent peer groups amplifies antisocial acts and makes them more likely in the future. Also, exposure to high levels of classroom aggression for long periods has been found to be predictive of future aggressive behavior among children (Thomas & Bierman, 2006).

Besides aggressive children and youth spending time together and reciprocally modeling and reinforcing one another's acts, attention has been paid to the possibility that the larger peer group of seemingly "noninvolved" peers may have either exacerbating or attenuating effects on the behavior of aggressive individuals. This phenomenon has been discussed especially in the literature on *school bullying* (e.g., Frey, Hirscheim, Edström, & Snell, 2009; Olweus, 2001; Salmivalli, Lagerspetz, Björkqvist, Österman, & Kaukiainen, 1996).

Bullying is defined as a specific subtype of aggression involving repeated attacks toward a victim who finds it difficult to defend himself or herself against the perpetrator(s) (Olweus, 1991). Unlike many antisocial acts such as stealing or substance use in which youth engage mostly in their free time together with their friends (e.g., Kiesner & Fassetta, 2009; Kiesner, Poulin, & Dishion, 2010), much of the bullying takes place in the school playground (Fekkes, Pijpers, & Verloove-Vanhorick, 2005) and involves incidents that are witnessed by

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relatively large audiences of normative peers (Atlas & Pepler, 1998; Craig, Pepler, & Atlas, 2000). Numerous recent models of bullying intervention have incorporated in some way or another the idea of changing the ways in which bystanders behave when witnessing bullying (Frey, Edstrom, & Hirschstein, 2010; Frey et al., 2009; Porter, Plog, Jens, Garrity, & Sager, 2010; Salmivalli, Kärnä, & Poskiparta, 2010). Quite surprisingly, it has not been established empirically whether the behaviors of children witnessing bullying incidents actually have an effect on bullying, either escalating or attenuating it, and which modes of bystander reactions might be most influential. Especially classroom-level effects merit attention, as most intervention components addressing bystander behaviors are class based and delivered within classrooms (e.g., Frey et al., 2010; Salmivalli et al., 2010).

An increasing number of studies have been published since the mid-1990s that conceptualize bullying as a group phenomenon (Espelage, Holt, & Henkel, 2003; Frey et al., 2009; Hawkins, Pepler, & Craig, 2001; Salmivalli et al., 1996; Salmivalli & Voeten, 2004; for a review, see Salmivalli, 2010). Studies on different *participant roles* children may have in the bullying process, in addition to being bullies or victims, were initiated by Salmivalli and colleagues (1996). They used a peer-nomination procedure to identify the roles of assistants of bullies, reinforcers of bullies, outsiders, and defenders of the victim. Assistants were described as children who join the ringleader bullies; reinforcers provide positive feedback to bullies (e.g., by laughing, cheering, or just by providing an audience); outsiders withdraw from bullying situations; and defenders take sides with the victims, comforting and supporting them. After the first Finnish studies, numerous other researchers from various countries (Andreou & Metallidou, 2004; Camodeca & Goossens, 2005; Goossens, Olthof, & Dekker, 2006; Menesini, Codecasa, Benelli, & Cowie, 2003; Schäfer & Korn, 2004; Sutton & Smith, 1999) have utilized the same conceptual framework. Quite surprisingly, however, none of them has tested whether different modes of bystander participation actually have an influence on the subsequent frequency of aggression in a classroom.

The few existing studies on the influence of peers witnessing aggressive incidents focus on the positive behavior of supporting and defending the victims rather than on behaviors that might be rewarding to the aggressors. DeRosier and colleagues (DeRosier, Cillessen, Coie, & Dodge, 1994), for instance, observed aggression in experimental play groups of 7- and 9-year-old boys and found that when the members of the group sided with the victim, the level of aversive behavior increased. Aversive behavior was defined as “verbal and nonverbal behavior that was overtly in opposition to the actions or

statements of others” (p. 1072). These behaviors involved, for instance, verbal disagreements, teasing, and other relatively mild forms of aggressive behaviors. Pepler and colleagues have done observational studies (e.g., Craig & Pepler, 1997; Craig et al., 2000; Hawkins et al., 2001) on bystander involvement in bullying. According to their findings, peers provided support for the victims in a minority (19%) of the episodes, but in as many as 57% of these cases they were effective at putting an end to bullying within 10s (Hawkins et al., 2001). Both of the aforementioned studies were limited by relatively small sample sizes. A further limitation was that all the brief episodes observed were not necessarily incidents of bullying but more occasional acts of aggression.

When it comes to social rewards provided to the bullies, several studies have shown that many bystanders reinforce a high proportion of aggressive acts (Craig & Pepler, 1997; Salmivalli et al., 1996; Sutton & Smith, 1999). Bullies seem to choose their targets as well as the time and place for the attacks in a way that maximizes their chances of demonstrating their power to peers, and in many cases they are successful in gaining prestige (e.g., Juvonen, Graham, & Schuster, 2003). Reinforcement of the bully typically involves displays of approval (e.g., smiling, laughing along) or direct verbal incitements (Salmivalli & Voeten, 2004). Even subtle positive feedback by verbal or nonverbal cues is probably rewarding for the children doing the bullying. As posited by the social cognitive learning theory (Bandura, 1973, 1977), learning to anticipate such positive consequences of bullying behavior, students are likely to engage in bullying even more frequently. In contrast, challenging the status and power of the perpetrators by taking sides with the victim provides negative feedback for the bullies, and therefore, defending the victim has been suggested to reduce bullying by making it an unsuccessful strategy for achieving status and prestige.

The question about bystanders’ potential influence is important, because it has bearing on interventions aimed at reducing bullying and victimization. It has been asserted that bystanders should be utilized in interventions (e.g., Frey et al., 2009; Herbert, 1989; Salmivalli, 1999; Salmivalli et al., 2010) because (a) their behavior might be easier to change than the behavior of aggressive bullies and (b) as a consequence, the social rewards associated with bullying (and thus the motivation to bully in the first place) would be diminished. Nevertheless, it is by no means self-evident that bystanders do influence bullying. Whether higher levels of reinforcing the bully by classmates make bullying more frequent is still an open question. Furthermore, it might be that defending the victim is relatively ineffective behavior when dealing with bullies who are powerful and possibly ruthless in their actions.

THE PRESENT STUDY

Based on this background research, the aim of the present study was to investigate whether bystanders' behaviors are related to the frequency of bullying in a classroom, a link that has almost been taken for granted and that has been used as a guiding principle of several intervention programs (Frey et al., 2009; Porter et al., 2010; Salmivalli et al., 2010). We focused on two central bystanders' behaviors, which can be seen as taking sides with either the bully or the victim, namely, reinforcing the bully and defending the victim. We controlled for the effects of age, gender, immigrant status, empathy toward victims, antibullying attitudes, and class size (i.e., the number of students in class), which all are potentially related to bullying behavior. We hypothesized that defending is negatively related to the frequency of bullying in a classroom, independent of the effects of the control variables. Second, we expected a positive association between reinforcing and the frequency of bullying others after controlling for the effects of the other individual- and classroom-level variables, including defending.

METHOD

Participants

This study is a part of a larger project that evaluates the effectiveness of the KiVa antibullying program developed at the University of Turku, Finland. The data utilized in the present study are the pretest data from the first phase of the evaluation study collected in May 2007. The details regarding the recruitment of schools are provided in Kärnä et al. (2011). The 78 schools participating in the evaluation project represent all five provinces in the mainland Finland, involving 429 classrooms and a total of 8,248 students in Grades 3 to 5 (M ages = 9–11 years). To recruit the children from this target sample, guardians were sent information letters including a consent form. A total of 7,564 students (91.7% of the target sample) received active consent to participate, and 7,312 students (88.7% of the target sample) from 408 classrooms in 77 schools responded to the questionnaire. One whole school dropped out of the pretest measurements because of problems related to their school facilities. Of the respondents, 50% were girls and 50% boys, and most students were native Finns (i.e., Caucasian), the proportion of immigrants being 2 to 2.5%. Only classrooms with at least 6 students and students with complete data on the explanatory variables were included in the study, resulting in the final sample of 7,257 students from 388 classrooms (with an average class size of 18.7 students) in 77 schools.

Procedure

In May 2007, students filled out Internet-based questionnaires in the schools' computer labs during regular school hours. The process was administered by the teachers who were supplied with detailed instructions concerning the procedure approximately 2 weeks prior to data collection. In addition, the teachers were provided with a possibility to get support through phone or e-mail prior to and during the data collection. The teachers received individual passwords for all the students with parental permission to participate in the study. They distributed the passwords to the students, who used them to log in to the questionnaire. The order of questions, individual items, and scales used in this study was randomized as much as possible so that the order of presenting the questions could not have any systematic effect on the results. The students were assured that their answers remain strictly confidential and will not be revealed to teachers or to parents.

The term *bullying* was defined to the students in the way formulated in the Olweus's (1996) Bully/Victim questionnaire, which emphasizes the repetitive nature of bullying and the power imbalance between the bully and the victim. Teachers read the definition out loud while the students could read the same definition from their computer screens. In addition, to remind the students of the meaning of the term *bullying*, a shortened version of the definition appeared on the upper part of the computer screen while the students responded to any bullying-related question.

Measures

Demographic variables. Students reported their age, gender (coded as 0 = *Girl*, 1 = *Boy*), and the country of birth for both themselves and for their parents. Those with both parents born abroad were classified as immigrants (dummy-coded variable, 0 = *Not immigrant*, 1 = *Immigrant*).

Self-reported bullying. We measured bullying with the global item from the revised Olweus's (1996) Bully/Victim questionnaire: "How often have you bullied others at school in the last two months?" Students answered on a 5-point scale ranging 0 (*not at all*) to 4 (*several times a week*). This self-report measure has been shown to be reliable and valid, producing similar prevalence estimates than more specific questions about bullying others (e.g., how often have you bullied others by hitting them/calling them names) and having theoretically meaningful associations with general aggression and antisocial behavior (Solberg & Olweus, 2003). The measure has been successfully used with Norwegian

fourth graders (Solberg, Olweus, & Endresen, 2007) whose average age corresponds to that of Finnish third graders. Furthermore, in our large Finnish sample, the single self-report item correlates .30 to .37 with peer-report items of bullying others.

Bystanders' behaviors. To assess bystanders' behaviors, the students were instructed to think how each of their classmates usually behaves in bullying situations. The items from the Participant Role Questionnaire were presented to them, among them the Reinforcer and Defender scales (Salmivalli & Voeten, 2004). The Reinforcer scale consisted of the items "Comes around to see the situation," "Laughs," "Incites the bully by shouting or saying: 'Show him/her!'" ($\alpha = .85$), and the Defender scale consisted of the items "Comforts the victim or encourages him/her to tell the teacher about the bullying," "Tells others to stop bullying," "Tries to make others stop bullying" ($\alpha = .91$). The peer-report scales are related to self-reports of similar behaviors as well as to bullying-related attitudes in expected ways (Salmivalli et al., 1996; Salmivalli & Voeten, 2004).

For each item, students were allowed to mark an unlimited number of classmates who fit the behavioral description from a list of names appearing on the computer screen. The student's own name was not included in his or her list; thus self-nominations were not possible. The number of nominations received by each child for each item was divided by the number of classmates doing the evaluation. These proportion scores were averaged across items to derive the total score, ranging from 0.00 to 1.00. To create indicators of the amount of reinforcing and defending in the classroom, these averages were further aggregated to the classroom level by calculating the classroom means.

Antibullying attitudes. The original 20-item Provic-tim scale (Rigby & Slee, 1991), which has been found to distinguish between students who indicate that they support the intervention of teachers and peers to stop bullying and those who believe that bullying should be ignored (thus showing discriminant validity; see Rigby & Slee, 1991), was modified into a 10-item version to fit the present context better. In other words, we chose the items reflecting attitudes to bullying behavior rather than perceptions of the victim or perceived responsibility to intervene in bullying. Students responded on a 5-point Likert-type scale ranging 0 (*I disagree completely*) to 4 (*I agree completely*) to items such as "It's okay to call some kids nasty names." To derive student scores on antibullying attitudes, 6 negatively keyed items were reversely coded, and scores on all 10 items were then averaged ($\alpha = .79$).

Empathy toward victims. We utilized a seven-item empathy questionnaire (Kärnä et al., 2011) consisting of items such as "When the victim of bullying is sad, I feel sad as well." Students were asked to evaluate how often the statements are true for them, responding on a 5-point scale ranging 0 (*never*) to 4 (*always*). An exploratory factor analysis revealed a single factor, and thus the ratings of the seven items were averaged to create a single empathy score ranging from 0 to 4, with higher numbers indicating greater empathy toward victims ($\alpha = .84$). Although the association between bullying and empathy is not conclusive (e.g., Caravita, Di Blasio, & Salmivalli, 2009), empathy toward victims (assessed by this scale) has been found to be positively related to defending and supporting the bullied victims (Pöyhönen, Juvonen, & Salmivalli, 2008; Pöyhönen, Kärnä, & Salmivalli, 2008).

Data Analysis

We used multilevel modeling to test our hypotheses concerning classroom-level effects. Multilevel modeling is advantageous here for two reasons. First, it enables accurate estimation of the standard errors by decomposing the total variance into within-class variability and between-class variability. This is beneficial compared with the traditional regression method, which ignores the nested structure of the data. Ignoring this nonindependence of observations may produce inaccurate standard errors (Bliese & Hanges, 2004; Julian, 2001; Lee, 2000; Raudenbush & Bryk, 2002). Second, multilevel modeling makes it possible to evaluate simultaneously the effects of predictors at the individual level and at the classroom level. We are especially interested in bystanders' behaviors at the classroom level while controlling for some individual-level predictors (age, gender, immigrant status, antibullying attitudes, and empathy toward victims).

Results are organized into the following sections. First, we present the correlations between the study variables at the individual level (within classrooms) and at the classroom level (between classrooms). Next, we present the amount of classroom-level variance in our study variables, in addition to their intraclass correlations. Intraclass correlations indicate the proportion of total variance that lies between classes and is thus due to differences between classrooms. In the fourth section, we present a multilevel model to test classroom-level associations of variables.

We used two-level regression analysis with a random intercept to model the effects of reinforcing and defending on self-reported bullying. The individual-level variables were grand-mean centered because they served only as covariates and our main interest was in the classroom-level variables (cf. Enders & Tofghi, 2007).

The classroom-level regression coefficients were partial regression coefficients reflecting the influence of classroom-level variables while controlling for the grand-mean centered, individual-level variables. In addition, the classroom-level variables were grand-mean centered. Because we focused on examining the classroom-level associations, we did not model school-level variation, but the clustering due to the schools was nevertheless taken into account by using the sandwich estimator for computing standard errors (Muthén & Muthén, 2007). As most variables were considerably skewed, the MLR estimator of Mplus 5.1 was used to generate robust standard errors (Muthén & Muthén, 2007). Furthermore, the left-skewed variables were normalized with a square root transformation, and the analyses were rerun with transformed variables. The conclusions concerning the main hypotheses remained unaltered with transformed scores, and therefore all the results reported next are based on the untransformed variables.

RESULTS

Correlations

The associations among variables were examined with a two-level analysis in Mplus 5.1 (Muthén & Muthén, 2007). In this analysis, the clustering is taken into account by computing two correlation matrices: a pooled within-classroom correlation matrix and a between-classroom correlation matrix. The within-classroom matrix adjusts for the variability of the classroom means, whereas the between-classroom matrix is based on classroom averages of the variables. We investigated the correlations only among the variables that were used at the corresponding levels in the following analyses.

Within-classroom correlations and descriptive statistics for the study variables are presented in Table 1. The results indicated that boys bullied more (the positive correlation between the dummy-coded “being a boy”

TABLE 1
Within-Classroom Correlations and Descriptive Statistics of Study Variables

Variables	1	2	3	4	5	6
1. Bullying	—					
2. Age	-.02	—				
3. Boy	.17***	.01	—			
4. Immigrant	.03*	.02	-.01	—		
5. Empathy	-.12***	-.02	-.08***	.03*	—	
6. Attitudes	-.22***	-.06***	-.08***	-.02	.49***	—
<i>M</i>	.43	10.99	.50	.02	2.01	3.23
<i>SD</i>	.67	.73	.50	.14	.60	.62

Note: All correlations were derived using two-level analysis. *N* = 7,257.

p* < .05. **p* < .001.

and bullying) and had less empathy and weaker antibullying attitudes as compared to girls. Furthermore, individuals with lower levels of empathy toward victims and weaker antibullying attitudes bullied others more than individuals with more empathy and more disapproving attitudes concerning bullying.

Table 2 contains the between-classroom correlations and descriptive statistics for the study variables. The correlations reveal what kind of classrooms had higher versus lower average levels of bullying. The mean of reinforcing was in strong positive association with the mean of bullying others; in other words, more bullying took place in those classes in which it was reinforced to a high degree. The correlation between bullying and defending was negative but did not reach statistical significance. Furthermore, the average level of bullying was lower in bigger classes.

Degree of Between-Classroom Variability in the Study Variables

We calculated the intraclass correlations (ICCs) for all measured variables. This measure indicates the proportions of variance due to classroom differences (Table 3). There was statistically significant between-class variability for all the tested variables. The intraclass correlation for bullying was estimated .07, which indicated that 7% of the total variance in bullying others was due to similarity between classmates, whereas the rest was due to individual differences. The ICCs for reinforcing, and especially for defending, were surprisingly large (ICC = .21 and ICC = .35, respectively). Thus, classes differed considerably in their levels of reinforcing and defending behavior; 21% of total variation in reinforcing and 35% of variation in defending were due to differences between classrooms. The analyses revealed that also antibullying attitudes and empathy toward victims had statistically significant ICCs, although much lower (ICC = .05). Therefore, at least some of the variability in all these measures could be attributed to clustering within classrooms.

TABLE 2
Between-Classroom Correlations of Study Variables

Variables	1	2	3	4
1. Bullying	—			
2. Class size	-.16**	—		
3. Defending	-.16**	-.30***	—	
4. Reinforcing	.70***	-.30***	.02	—
<i>M</i>	.43	18.9	.19	.11
<i>SD</i>	.38	7.01	.01	.01

Note: All correlations were derived using two-level analysis. *N* = 388 classrooms.

p* < .01. *p* < .001.

TABLE 3
Within- and Between-Classroom Variances and Intraclass Correlations (ICCs) for the Study Variables

Variables	Within s^2	Between s^2	ICC
Bullying	.460***	.036***	.07***
Attitudes	.392***	.019***	.05***
Empathy	.357***	.021***	.06***
Defending	.014***	.008***	.38***
Reinforcing	.010***	.003***	.21***

Note: $N = 7,257$ (within), 388 (between).
*** $p < .001$.

Classroom-Level Predictors of Bullying Others

We first ran a model including the within-level predictor variables that were used for control purposes in the present study (Model 1; the first column of Table 4). Altogether, the variables predicted 7% of the total within-level variance (i.e., individual differences) in bullying others. Being a boy and having weak antibullying attitudes were significantly, and being an immigrant was marginally, associated with a higher frequency of bullying others. The classroom-level predictors were entered one by one in the subsequent analyses (Models 2–4).

Classroom size, which was first entered in the between-level part of the model, was not significantly related to classroom differences in bullying (Model 2; the second column in Table 4) and explained only 3% of the variation of bullying frequency between classrooms. Entering the classroom mean of defending (Model 3) improved the model fit, as there was a drop of 10.8 in the Bayesian Information Criterion. The classroom mean of defending predicted significantly the frequency of bullying in a classroom ($b = -.49, p < .01$) over and above the effects of the control variables. In

TABLE 4
Summary of Multilevel Regression Analyses for Predicting Bullying

Variable	Model 1		Model 2		Model 3		Model 4	
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>
Intercept	.42	.02	.42	.02	.41	.02	.44	.05
Age	.00	.01	.00	.01	.00	.01	-.01	.01
Boy	.16***	.02	.16***	.02	.16***	.02	.16***	.02
Immigrant	.14	.08	.14	.08	.14	.08	.13	.08
Empathy	.01	.02	.01	.02	.01	.02	.01	.02
Attitudes	-.22***	.02	-.22***	.02	-.22***	.02	-.21***	.02
Class Size			-.04	.03	-.06	.03	-.01	.02
Defending					-.49***	.16	-.35*	.14
Reinforcing							2.05	.27
R^2 Within	.07***		.07***		.07***		.07***	
R^2 Between			.03		.10*		.53***	
BIC			13,606.68		13,595.91		13,497.29	

Note: $N = 6,764$ (within), 385 (between). BIC = Bayesian Information Criterion.

other words, in classrooms where more defending was observed by students, bullying was less frequent. Finally, the classroom mean of reinforcing the bully was included (Model 4). This change resulted in a considerably better fitting model, which was indicated in the notable decrease of 98.62 in the Bayesian Information Criterion. As expected, classroom mean of reinforcing predicted positively and in a statistically significant way the frequency of bullying in a classroom ($b = 2.05, p < .001$), after controlling for the effects of other variables in the model. The level of reinforcing in a classroom also added considerably to the explained variance, explaining further 43% of the between-classroom variance in bullying others. Consequently, 53% of the variation between classrooms was explained by Model 4. Also, the level of defending in a classroom was still negatively and in a statistically significant way associated with bullying frequency in Model 4, albeit the association was weaker ($b = -.35, p < .05$). An increase of reinforcing in a classroom was thus associated with a rather steep increase in bullying others, whereas an increase in defending in a classroom was associated with a decrease in bullying others.

DISCUSSION

We examined whether the classmates' typical behaviors during bullying incidents are related to the frequency of bullying in a classroom—an association that has often been implied (e.g., Frey et al., 2009; Salmivalli, 2010) but not yet empirically tested. The focus was on two bystander behaviors, defending the victim and reinforcing the bully, which can be seen as two opposite modes of social feedback in bullying situations. As expected, the frequency of bullying in a classroom was negatively associated with defending and positively associated with reinforcing.

Previous research on participant roles has mainly focused on describing students occupying different roles (e.g., Salmivalli et al., 1996) and explaining their varying behavior in bullying situations (e.g., Caravita et al., 2009; Gini, Albiero, Benelli, & Altoe, 2008; Pöyhönen, Juvonen, & Salmivalli, 2010; Salmivalli, 1998; Tani, Greenman, Schneider, & Fregoso, 2003). Research concerning the effects of defending on bullying has been limited to few studies investigating experimental play groups or single incidents of harassment in the playground (e.g., DeRosier et al., 1994; Hawkins et al., 2001) rather than classroom-level associations. To our knowledge, the association between reinforcing and bullying has not been investigated in previous studies. The present study was thus the first one to show that the levels of defending and reinforcing are indeed related to the frequency of bullying others in a classroom.

The results imply that bystanders influence the frequency of bullying, providing support for the view of bullying as a group phenomenon. In particular, reinforcing the bully seems to have a strong association with the frequency of bullying others in a classroom, whereas defending contributes to explained variation in bullying to a lesser extent. If bullies indeed seek social power, as has been suggested (e.g., Juvonen & Galvan, 2008; Salmivalli & Peets, 2009; Sijtsema, Veenstra, Linddenberg, & Salmivalli, 2009), they might view reinforcing as an indication of this sought-after high status in the peer group. By reinforcing the aggressive acts, the bystanders communicate to the bullies that (a) their behavior is acceptable, even admired, and (b) they do not have to fear retaliation from peers. Future studies could investigate whether the effects of reinforcing are mediated by cognitions about bullying, such as outcome expectancies related to gaining social power.

The different magnitude of the effects of reinforcing versus defending suggests that bullies are more sensitive to the positive feedback provided by reinforcing than to the support provided to the target of bullying. As some defending items reflect support that can be provided privately (e.g., comforting the victim) or at least without directly confronting the perpetrator(s), defending might not always be as salient to the bullies as reinforcing. It is also possible that the friends of the bullies are more likely to be the ones providing reinforcement (rather than supporting the victim; see Card & Hodges, 2006; Salmivalli, Huttunen, & Lagerspetz, 1997), and feedback from them is especially relevant.

It is important to note that defending had a unique negative association with the frequency of bullying behavior. Besides this negative classroom-level association, defenders might be especially important for easing the victim's plight (Sainio, Veenstra, Huising, & Salmivalli, 2011). Even if bullying behavior continues, the subjective experience of a victim who has one or more supporters among peers is probably very different from a victim who does not have anyone on his or her side.

Peer influences have often been studied at the level of peer dyads or cliques (Dishion et al., 1996; Haselager et al., 1998; Kiesner & Fassetta, 2009; Kiesner et al., 2010). The findings obtained in the present study might have been even clearer within the level of friendship dyads or cliques. As previously noted, social feedback provided by one's friends of clique members is likely to be more important than the reactions from classmates at large. Moreover, the peers who reinforce the bullies' mean acts may not always be classmates but students from different classes. However, bullying interventions focusing on the group are typically effectuated at the classroom level (e.g., by student lessons delivered at classrooms) rather than at the level of pre-identified cliques. It is therefore important to show that

classroom-level differences in bystander responses are related to the frequency of bullying.

One limitation of the present study is the concurrent design. It can be argued that defending and reinforcing can only take place in classrooms where some aggressive acts are taking place. From this viewpoint, defending and reinforcing could also be considered as *consequences* of bullying acts. The view that reinforcing and defending have an effect on the frequency of bullying can, however, be supported with at least two arguments. First, as the students were instructed to indicate how each of their classmates behaves in bullying situations, their answers can be interpreted as reflecting in part their *expectations* of classmates' reactions to bullying. These expectations, which are based on experience in interacting with the classmates, seem to guide the students' behavior. Second, there was a *negative* association at the classroom level between defending the victim and the frequency of bullying others, implying that defending is not a mere consequence of bullying. It is obvious, however, that longitudinal studies are needed to gain stronger evidence of the hypothesized causal relations.

Another limitation is that we did not distinguish between bullies and bully-victims (e.g., Solberg et al., 2007; Veenstra et al., 2005) partly because our dependent variable was not dichotomous, but we predicted variance in the frequency of bullying behavior at individual and classroom levels. We believe that bullying behavior is influenced by social feedback (defending or reinforcing) regardless of whether the student doing the bullying is himself or herself victimized. However, it could be explored in future studies whether "pure bullies" and "bully-victims" differ in their sensitivity to social feedback provided by bystanders in bullying situations.

Finally, the results of the present study are qualified by the fact that the number of predictors was limited, and the variables were measured with an imperfect, albeit adequate, reliability. Taken together, these limitations point to the need of longitudinal multilevel latent variable models, which will be possible with our data in the future.

There are several strengths in our study. Methodologically, the multilevel approach to modeling can be considered as an important strength. It enabled us to test properly the classroom-level hypotheses while controlling for the effects of several factors at the individual and classroom levels. Furthermore, our large sample provided us adequate statistical power to detect the classroom-level effects. Finally, the sample was also representative in that it contained varying kinds of classrooms and schools from all over Finland.

Implications for Research, Policy, and Practice

The results have implications for theory and for educational practices. The large intraclass correlations

for both defending and reinforcing as well as their associations with bullying at the classroom level suggest that there is a need to investigate bullying as a group phenomenon with methods incorporating several levels. Our findings indicated that the levels of bullying and related behaviors vary not only between individual children but also between school classes. Bullying has sometimes been described as an individual problem of either the bully or the victim, which can be traced back to insecure attachment (Monks, Smith, & Swettenham, 2005; Troy & Sroufe, 1987), self-related cognitions (Salmivalli, 1998; Salmivalli, Kaukiainen, Kaistaniemi, & Lagerspetz, 1999), dysfunctional parenting (Perry, Hodges, & Egan, 2001), attitudes favoring bullying (Boulton, Trueman, & Flemington), or other person-level characteristics. However, our findings underline the importance of the social context where bullying takes place.

When it comes to practical implications, the interventions designed to reduce bullying should target not only individual bullies and victims but the group as a whole (cf. Salmivalli, 1999; Salmivalli et al., 2010). It should be beneficial to influence the bystanders, making them more likely to defend and support victimized peers and less likely to reinforce the bully. On the basis of results from this study it can be hypothesized that especially a decrease in reinforcing could be a key factor in reducing bullying. There is already evidence that reinforcing behavior can be reduced, and children's empathy toward victims as well as their self-efficacy to defend can be positively influenced by school-based interventions where whole classrooms are targeted (Frey et al., 2009; Kärnä et al., 2011). Future research should investigate the relative contributions of defending, reinforcing and other potential mediators of intervention effects at multiple levels.

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