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# Context-Dependent Peer Victimization: Are physical and relational aggression tolerated differently in mixed-sex versus all-girl schools?

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# Context-Dependent Victimization and Aggression

## Differences Between All-Girl and Mixed-Sex Schools

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Contextual differences in the association between different forms of aggressive behavior and victimization were studied with a sample of 197 boys and 149 girls from mixed-sex schools and in 336 girls from all-girl schools ($M$ = 10.21 years of age) in two cities in Colombia. Results showed that boys generally engage in more physical than relational aggression, whereas girls engage in more relational than physical aggression. Among boys, the association between aggression and victimization was significant only for the measure of relational aggression, whereas, for girls, victimization was significantly correlated only with physical aggression. This latter association was found to be significantly stronger for girls from the all-girl schools than for the girls from the mixed-sex schools. These findings are discussed in terms of how mixed-sex and same-sex groups, as different forms of peer context, affect the social dynamics related to the association between aggression and victimization.

Research in the last decade has been concerned with the sources of individual differences in peer victimization during the school-age and early adolescent

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years. Typically studies have focused on individual level variables. Together they have shown that individual differences in social behaviors, such as aggression, are related to peer victimization. Although this emphasis on the individual has been important, theory and prior research show that the effects of individual-level variables often vary across contexts (Rubin, Bukowski, & Parker, 2006). The present study asks two interrelated questions about contextual variations in aggression and in its relation to victimization. The first question concerns contextual differences in the normativeness of aggression; the second question is concerned with contextual variations in the associations between victimization and different forms of aggression. The contexts examined in this study were classroom-based peer groups. Three aspects of these contexts are assessed: One is the gender composition of the group (i.e., whether it is made up of boys or girls), the second is the extent to which aggression is normative for the group, and the third is whether the school where the group is situated is made up of boys and girls or just girls. The overall aim of the study is to examine whether aggression varies across classroom-based same-sex peer groups and whether the association between the use of aggressive behaviors and the risk for peer victimization differed as a function of contextual characteristics.

Peer victimization occurs when a child is the target of negative actions from her or his peers (Kochenderfer-Ladd & Ladd, 2001; Olweus, 2001). Research shows that victimized children tend to display behaviors that could invite or reinforce attacks against them (Bukowski & Sippola, 2001; Hodges, Boivin, Vitaro, & Bukowski, 1999; Hodges, Malone, & Perry, 1997). For instance, children who exhibit internalizing behaviors (e.g., anxiety or depression) may be indicating their incapacity to defend themselves successfully against attacks. On the other hand, children who exhibit externalizing behaviors, such as overt aggression, may receive attacks because they are more likely to irritate and provoke other children, especially potential aggressors, to victimize them (Egan & Perry, 1998).

Although the association between victimization and aggression has been typically conceptualized at the level of the individual (i.e., aggressive and withdrawn children are likely to be victimized by others), this association may vary as a function of contextual factors. Specifically, there is reason to expect that the association between aggression and victimization at the level of the individual will vary according to whether aggression is normative or nonnormative for the group in which the individual is situated. Group norms have been defined as the acceptable and expected behavior of the members of a social group (Shaw, 1981). According to studies in the field of social psychology, individuals ascribe significance to group norms and use them to guide their own behavior (Miller & Prentice, 1994).

One way in which peer norms have been operationalized is by assessing the levels or frequency of a behavior within a social group (Berkowitz, 2003). Cialdini, Kallgren, and Reno (1991) defined this type of norm as the "descriptive norm" and argued that individuals would infer the appropriate behavior from the typical behavior of the members of the group. Following this line of reasoning, previous studies have looked at the group-level prevalence of behaviors such as aggression or prosocial behavior to assess the impact of classroom norms on students' development (Chang, 2004; Henry et al., 2000).

Research findings suggest that peer norms may act as an important moderating factor of social processes within a group. For example, researchers have found that peer norms can influence the extent to which individuals within a group who exhibit nonnormative behaviors will be at risk of being rejected by group members (Boivin, Dodge, & Coie, 1995; Chang, 2004; Wright, Giammarino, & Parad, 1986). Specifically, these findings show that aggressive children are disliked by their peers *only* in groups where aggression is not normative for the group. Taken together, these ideas suggest that when a child's behavior, such as the use of aggression, deviates from a group's norms, the child will be at risk for negative treatment by peers. In this study, we examine whether such processes operate for the association between multiple forms of aggression and peer victimization.

A key component of research on normative differences in aggressive behavior has been the consideration of sex differences. Aside from the apparent overall difference in the amount of aggression shown by boys and girls, findings from several studies have suggested that overt/direct (e.g., physical, verbal) forms of aggression are more prevalent for boys than girls, whereas covert/indirect (e.g., relational) aggression appears to be higher for girls than boys (Björkqvist, Lagerspetz, & Kaukiainen, 1992; Crick, 1997). For example, there is evidence that girls in groups of very aggressive children are more likely to be relationally aggressive than physically aggressive and that boys are more likely to be represented in extreme groups of overt aggression (Crick & Grotpeter, 1995). More recent studies have challenged this pattern of findings. A meta-analytic review of studies looking at gender differences in aggression found that the between-sex difference in relational aggression is very small (Card, Stucky, Sawalani, & Little, 2008).

Understanding gender differences in aggression can be fundamental when considering gender peer norms as a context (Leadbeater, Boone, Sangster, & Mathieson, 2006). According to Maccoby (1998), boys and girls grow up in different "cultures." These contexts are characterized by

different patterns of behavior and different expectations. According to this view, the behavior of boys and girls will differ as it is guided by gender-based norms and expectations. An implicit point of this perspective is that if boys are more overtly aggressive than are girls, and girls tend to exhibit more relational aggression, then the tolerance or significance of these forms of behavior will vary as a function of gender. Accordingly, one can expect that relational aggression may be tolerated more by girls relative to their tolerance of physical aggression, whereas physical aggression may be more likely to be tolerated by boys than relational aggression. Accordingly, we considered that, in addition to between-sex differences, looking at within-sex differences in different types of aggression could enhance our understanding of the repercussion of the relative normativeness of these behaviors for girls and boys.

Aside from these general expectations of differences between and within boys and girls, there is also reason to expect that the gender composition of the context in which individuals are situated may matter. Harris (1995), in her group-based socialization theory, proposed a group process named the "between-group contrast." She stated that members of a group tend to differentiate themselves from members of other groups by reinforcing the in-group's stereotypes. With respect to the peer group, during the school-age and early adolescent years other-sex peers constitute an "out group" (Maccoby, 1998; Underwood, 2007). In this way, students in mixed-sex schools have an available "out group" to whom they can compare themselves. Presumably, this comparison will reinforce their views of the normativeness of the characteristics of their same-sex peer groups. In contrast, students in all-girl or all-boy schools will lack this point of comparison and, therefore, the power of the norm may be lower for them. Accordingly, gender-based norms for aggression are likely be more powerful in mixed-sex schools than they are in schools composed only of same-sex students. In this study, we tested these ideas by comparing girls from mixed-sex schools and all-girl schools, in their gender norms and in the effect of these norms on the association between types of aggression and victimization.

In summary, the main objective of this study is to examine contextual variations in aggressive behavior and in the association between aggression and victimization. Three groups of early adolescents were included in the study: boys in mixed-sex schools, girls in mixed-sex schools, and girls in all-girl schools. Four questions were addressed: First, we examined between-group and within-group differences for these three groups on the normativeness (i.e., prevalence) of two types of aggression (i.e., physical and relational). Boys, compared to girls, were expected to exhibit

more physical aggression. Given the inconsistent findings regarding sex differences in relational aggression, no hypothesis was proposed for this behavior. Within each sex, we expected boys to use more physical than relational aggression, and girls to use more relational than physical aggression. Second, we examined variations in the associations between the two types of aggression and victimization, as a function of the normativeness of each type of aggression in classroom-based same-sex groups. It was expected that relational aggression will be more strongly associated with peer victimization among peer groups in which relational aggression is less prevalent, whereas physical aggression will be more strongly associated with peer victimization in groups in which physical aggression is less prevalent. Third, we assessed variations in the association between aggression and victimization across sex. We expected (a) that relational aggression would be more strongly associated with peer victimization in boys, and (b) that physical aggression would be more strongly associated with peer victimization in girls. Fourth, we tested the effect of the between-group contrast process proposed by Harris (1995). Based on this concept, the association between physical aggression and peer victimization was expected to be stronger for girls in mixed-sex schools compared to girls in all-girl schools.

## Method

### *Participants*

The sample consisted of 682 early-adolescent boys and girls ($M$ = 10.21 years of age), from Grades 5 and 6 from four schools in two cities in Colombia (Bogotá and Barranquilla). A total of 20 classrooms participated in the study, with a size range of 30–43 students per class. Participants in the two cities were in an all-girl school or a mixed-sex school (a breakdown of the sample size is listed in Table 1). Based on the schools records and on parents report, students came mainly from lower-middle class neighborhoods. The sample represented over 90% of the potential pool of participants.

It is important to note that the selection of a school for a child often reflects a complex set of considerations. These factors may include practical considerations, such as the school's location or the availability of other schools, as well as parental perceptions of the sort of environment they would prefer for their child. It would not be possible to claim that the decision for a child to go to one school instead of another is based on a single factor. In Colombia, children typically attend a school in which the other

**Table 1.** Breakdown of Sample Size per Type of School, City, and Sex

| | Type of school | | |
|---|---|---|---|
| | Same sex | Mixed sex | |
| City | Girl | Girl | Boy |
| Bogotá | 222 | 72 | 124 |
| Barranquilla | 114 | 77 | 73 |
| Total | 336 | 149 | 197 |

students are drawn from the neighborhood and, as a result, roughly the same sector of the socioeconomic status (SES) spectrum.

### *Procedures and Instruments*

As part of their participation in a larger study, children completed an unlimited-choice peer assessment questionnaire (for a description, see Rubin et al., 2006). The questionnaire consisted of a large set of items representing characteristic behaviors of early adolescents in their schools. To complete the questionnaire, each participant indicated which of his or her participating peers in her or his class fit the characteristics or behaviors described in each item in the questionnaire. Two items in the questionnaire were indices of physical aggression (i.e., "someone who hits or pushes people" and "someone who gets involved in physical fights"), two were indices of relational aggression ("someone who tries to keep others out of the group" and "someone who talks badly about others behind their backs to hurt them"), and two were indices of victimization ("others treat them badly" and "others call him/her bad names"). For translation purposes, the original English versions of the questionnaires were distributed to school psychologists in Colombia, who assessed their meaning and relevance for Colombian children. The questionnaires were then translated into Spanish by translators working in the fields of education and psychology, and then back-translated into English by a separate group of individuals to ensure that the meaning of items was retained in the translation.

A score on each item was calculated for each participant, indicating how often she or he had been chosen for it by her or his participating same-sex classroom peers. Correlations between the two items intended to measure peer victimization were strong ($r = .68$, $p < .05$), as were the

correlations between the two items for relational aggression ($r = .63$, $p < .05$) and physical aggression ($r = .78$, $p < .05$). Means of peer victimization (Cronbach's alpha = .76), relational aggression ($\alpha = .79$) and physical aggression ($\alpha = .87$) were then created by using the two items for each. Descriptive information of these variables for the total sample and for each group is presented in Table 2.

The inclusion of the all-girl schools in the study raised two interrelated measurement issues. First, because there were no other-sex peers in the all-girl school, only same-sex nominations could be used to calculate the scores for the items from the peer assessment questionnaire. This practice of using only same-sex nominations led to the second issue. Because there were more same-sex peers in the classrooms of the participants from the all-girl schools than for both the boys and the girls in the mixed-sex school, the size of the scores that could be assigned to the girls in the all-girl schools could be larger than the size of scores assigned to the girls and the boys in the mixed-sex schools, merely because of a difference in the number of same-sex peers (i.e., the nominators) in the classes (same-sex group size range in mixed-sex schools = 8–25; same-sex group size range in all-girl schools = 30–43). To examine the effect of these differences in the number of same-sex nominators, a regression procedure was used to obtain an estimate of the linear, quadratic, and cubic effect of the number of same-sex nominators on the score for each of the items we used from the peer assessment questionnaires. Results from these analyses revealed that the proportion of variance explained by the same-sex group size was very small. The $R^2$ for each item ranged from .003 to .026, indicating that there was no need to correct the scores obtained in each item. This was confirmed in further analyses that will be described later in this article. Therefore, raw scores were used for all subsequent analyses.

**Table 2.** Means and Standard Deviations for the Whole Sample and Per Group

| | Relational aggression | | Physical aggression | | Victimization | |
|---|---|---|---|---|---|---|
| Group | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| All-girl school | 3.65 | 3.95 | 2.38 | 4.05 | 1.96 | 3.00 |
| Girls: mixed-sex school | 2.41 | 1.84 | 1.16 | 1.37 | 1.21 | 1.51 |
| Boys: mixed-sex school | 2.23 | 1.59 | 3.30 | 2.80 | 2.31 | 1.95 |
| Total | 2.96 | 3.10 | 2.37 | 3.35 | 1.89 | 2.49 |

## Results

### *Contextual Differences in Normativeness of Aggression*

Group differences in the normativeness of physical and relational aggression were examined with a repeated-measures ANOVA in which type of aggression (i.e., physical and relational) was used as the repeated factor and type of same-sex group (i.e., girls in all-girl classrooms, girls in mixed-sex classrooms, and boys in mixed-sex classrooms) as the between-subjects factor. To confirm the absence of an effect of group size, preliminary analyses were run including group size as a covariate. Given that the effect size of group size on the dependent variable was found to be so small (partial $\eta^2 = 0.01$), the model was tested without controlling for this effect. Results revealed an overall same-sex group by type of aggression interaction ($F[2, 679] = 49.75$, $p < 0.05$, partial $\eta^2 = 0.13$) (for observed means and standard errors, see Figure 1). Post hoc between-group simple effects conducted with the Bonferroni correction showed that, for relational aggression, the mean for the girls from all-girl schools was significantly higher than that for the boys from the mixed-sex schools (Cohen's $d = .43$) and the girls from the mixed-sex school (Cohen's $d = .36$). In the case of physical aggression, the three groups differed from one another. The mean for the boys from the mixed-sex schools was higher than for girls in all-girl schools (Cohen's $d = .25$) and girls in mixed-sex schools (Cohen's $d = .94$). Also, the mean for the girls in the all-girl schools was higher than the mean for

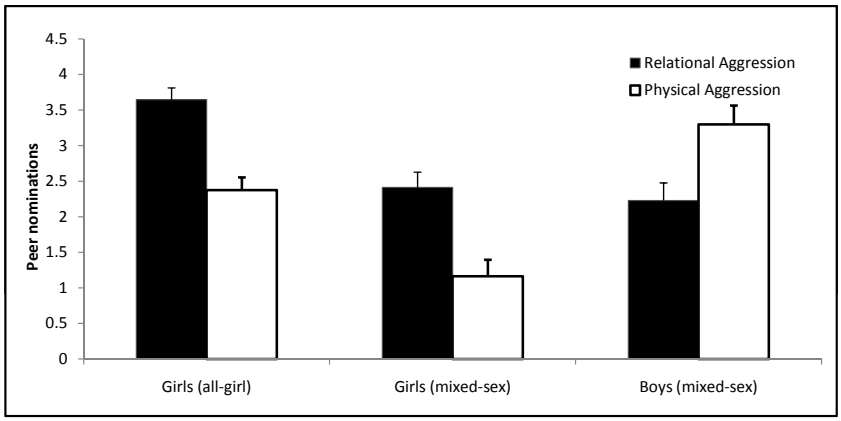


**Figure 1.** Means and standard deviations of relational aggression and physical aggression separated by same-sex group.

the girls in the mixed-sex schools (Cohen's $d = .35$). Within-group simple effects, also conducted with the Bonferroni correction, showed that girls in both schools exhibit more relational than physical aggression (Cohen's $d$ for all-girl schools = .32; Cohen's $d$ for mixed-sex schools = .78), whereas the opposite was found for boys (Cohen's $d = .47$).

### *Variations in the Association Between Aggression and Victimization as a Function of Group Norms*

*Plan of analysis.* Multilevel modeling conducted with a hierarchical linear model (HLM; Bryk & Raudenbush, 1992) was used to assess whether between-group variations in the association between types of aggression and victimization could be attributed to group norms for aggression. In this analysis, the effect of both types of aggression (centered at their grand mean) on victimization was calculated as the Level 1 model. It is important to note that, in initial analyses, the effect of same-sex group size on the intercept and slopes was examined. Since the effect of group size was not significant, group size was not included as a variable in subsequent analyses. After modeling the associations at the individual level (i.e., Level 1), the same-sex group mean in each type of aggression (centered at their grand mean) was calculated, and it was used as Level 2 moderators of the Level 1 slopes (controlling for the effect of these variables on the intercept). The specific analyses conducted and their results are presented in the next sections: one for the Level 1 results and one for the Level 2 results.

*Level 1 analysis.* First, an *unconditional* model was assessed. In this analysis, victimization was used as the dependent variable. The analysis provided estimates of the amount of variability due to within-group influences and that which is between groups. The intraclass correlation revealed that 95.66% of the variability in the victimization score was within the groups and 4.34% was between groups.

In the second model, the measure of physical aggression was first added as a predictor of peer victimization. Results showed that the measure of physical aggression was significantly associated with peer victimization ($b = .336$, $t = 4.94$, $p < .05$), explaining 30.71% of the within-group variance. Next, relational aggression was added to the model. Again, results indicated that it was significantly associated with peer victimization ($b = .211$, $t = 2.85$, $p < .05$), explaining an additional 13.57% of the remaining within-group variance. Together, these variables explained 40.11% of the within-group variance. There was a strong positive correlation between the two individual-level predictors ($r = .582$, $p < .05$). The slopes for the association between relational aggression and victimization, and between

physical aggression and victimization, were observed to be *random* ($\chi^2[30] = 153.16$, $p < .05$, and $\chi^2[30] = 146.31$, $p < .05$) for relational aggression and physical aggression, respectively). Also, in this model the intercept was found to be random ($\chi^2[30] = 68.45$, $p < .05$)

*Level 2 analysis.* The Level 2 model was constructed to account for *random* variation in the Level 1 effects. Specifically, the peer group means of relational and physical aggression were used as predictors of variance in the Level 1 slopes for relational and physical aggression, and of the intercept. The correlation between these two predictors at Level 2 was also strong and positive ($r = .464$, $p < .05$). It was expected that at Level 1 each form of aggression would be more strongly associated with the measure of peer victimization in peer groups where that type of aggression was nonnormative (i.e., when group means are low) than in peer groups where it was normative (i.e., when group means are high).

The Level 2 analysis supported our hypotheses. Together, the peer group means for relational aggression and physical aggression accounted for 15.42% of the between-peer-group variance in the Level 1 slope for the association between physical aggression and victimization, which led to a significant decrease in between peer group variability in this slope ($\Delta\chi^2[2] = 36.77$, $p < .05$). In the case of the Level 1 association between relational aggression and victimization, these two Level 2 predictors accounted for 38.03% of the between-peer-group variance in this slope and led to significant decrease in its between-peer-group variability ($\Delta\chi^2[2] = 87.70$, $p < .05$).

The effects of these predictors on the intercept and the slopes are outlined in Table 3. As expected, the slope related to the association between relational aggression and victimization was found to be negatively correlated with the peer group mean of relational aggression. In other words, in groups with high levels of relational aggression, the association at the individual level between this type of aggression and victimization was weaker. Similarly, the slope for the association between physical aggression and victimization was found to be weaker when levels of this type of aggression at the group level were high.

### *Variations in the Association Between Aggression and Victimization as a Function of Sex*

To test for contextual variations across sex in the relationship between types of aggression and victimization, sex of the peer group (coded 0 for boys and 1 for girls) was added as a group-level predictor of the Level 1 slopes of the association between both types of aggression and victimization, and of the

**Table 3.** Equation Coefficients of the Level 1 Slopes and Intercept on Level 2 Group Norms for Each Type of Aggression

| Variable | *b* | *SE* | *t* | *df* | *p* |
|---|---|---|---|---|---|
| Level 1. Victimization intercept | | | | | |
| Intercept | 2.351 | 0.142 | 16.558 | 28 | 0.000 |
| Level 2 | | | | | |
| Physical aggression mean | 0.222 | 0.107 | 2.070 | 28 | 0.047 |
| Relational aggression mean | –0.144 | 0.083 | 1.736 | 28 | 0.093 |
| Level 1. Physical aggression slope | | | | | |
| Intercept | 0.307 | 0.079 | 3.881 | 28 | 0.001 |
| Level 2 | | | | | |
| Physical aggression mean | –0.149 | 0.046 | 3.202 | 28 | 0.004 |
| Relational aggression mean | 0.142 | 0.056 | 2.522 | 28 | 0.018 |
| Level 1. Relational aggression slope | | | | | |
| Intercept | 0.303 | 0.068 | 4.478 | 28 | 0.000 |
| Level 2 | | | | | |
| Physical aggression mean | 0.052 | 0.042 | 1.225 | 28 | 0.231 |
| Relational aggression mean | –0.202 | 0.050 | 4.034 | 28 | 0.000 |

victimization intercept. It was believed that the association between physical aggression and peer victimization would be stronger in the girls' peer groups, whereas the association between relational aggression and peer victimization would be stronger in the boys' peer groups. Sex accounted for 22.9% of the variance in the Level 1 slope for the association between relational aggression and victimization, which led to a significant decrease in between-peer-group variability in this slope ($\Delta\chi^2[1] = 30.96$, $p < .05$). As expected, the association between relational aggression and peer victimization was stronger among male peer groups than female groups ($b = -.448$, $t = 3.12$, $p < .05$). Using sex as a Level 2 predictor to account for variability in the Level 1 slope between physical aggression and peer victimization produced even stronger results. It accounted for 27.8% of the between-peer-group variance in this slope, which represented a significant decrease in between-peer-group variability ($\Delta\chi^2[1] = 12.48$, $p < .05$). As expected, the association between physical aggression and peer victimization was stronger for female peer groups ($b = .504$, $t = 4.01$, $p < .05$). Figure 2 illustrates these interactions.

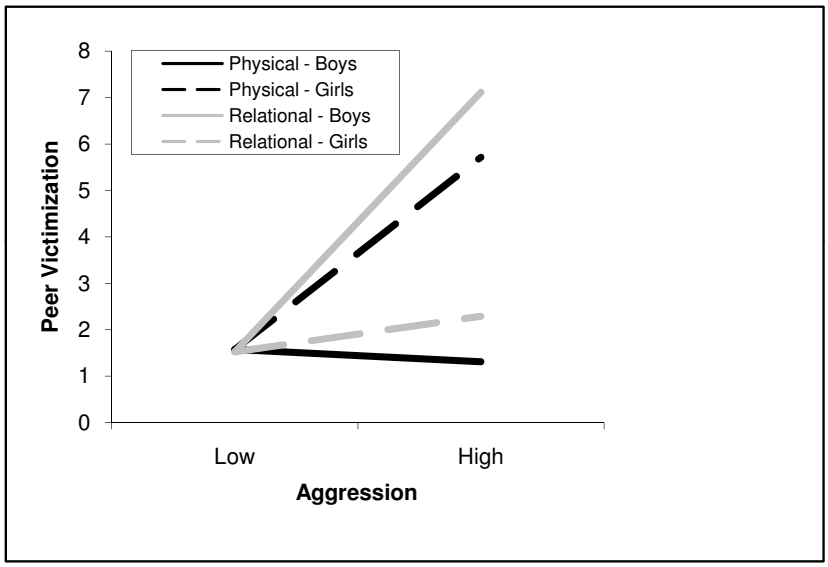


**Figure 2.** Slopes for the association between aggression and peer victimization as a function of sex and the type of aggression.

### *Variations in the Association Between Aggression and Victimization as a Function of Type of School*

To test the hypothesis that the association between physical aggression and peer victimization differs between same-sex and mixed-sex schools, multilevel analyses were also conducted. It was expected that individual slopes of physical aggression would be stronger among girl peer groups from mixed-sex schools, compared to girls from all-girl schools. A separate analysis was conducted on the data with the boy peer groups removed. First, group size was included as a predictor of the intercept. In this case, this effect was found to be significant ($b = .030$, $t = 2.97$, $p < .05$). As such, all subsequent analyses for this subsample included group size as a covariate. Next, individual physical aggression was included as a Level 1 predictor of victimization. Consistent with the findings in the analysis outlined earlier, this variable was found to be significantly associated with victimization ($b = .588$, $t = 6.24$, $p < .05$). The inclusion of physical aggression accounted for 35.79% of the within-group variance. In this model, both the intercept and the slope were found to be random ($\chi^2[19] = 32.19$, $p < .05$, for the intercept; $\chi^2[19] = 160.44$, $p < .05$, for the slope). To explain this variability

across groups, type of school (coded "mixed sex" = 0 and "all-girls" = 1) was used as a Level 2 predictor of both the intercept and the slope for physical aggression and victimization. To rule out the possibility that any type of school effects would be due to group mean differences in the normativeness of the two types of aggression examined, these variables were controlled for in this analysis. Results outlined in Table 4 show that above and beyond the effect of the group norm, type of school does seem to have a moderating effect on the association between physical aggression and victimization. However, these results were contrary to initial expectations. As can be seen in Figure 3, the association was stronger among all-girl peer groups. The inclusion of type of school accounted for 4.6% of the between-peer-group variance in the slope, which represented a significant decrease in between-peer-group variability ($\Delta\chi^2[1] = 39.94$, $p < .05$).

## Discussion

The current study is focused on differences between peer groups in the normativeness of aggression and in the associations between different types of aggression and victimization. These analyses showed that different forms

**Table 4.** Equation Coefficients of the Level 1 Slopes and Intercept on Level 2 Type of School, Controlling for Group Norms

| Variable | *b* | *SE* | *t* | *df* | *p* |
|---|---|---|---|---|---|
| Level 1. Victimization intercept | | | | | |
| Intercept | 2.056 | 0.170 | 12.092 | 15 | 0.000 |
| Level 2 | | | | | |
| Group size | –0.024 | 0.035 | 0.681 | 15 | 0.506 |
| Relational aggression mean | –0.389 | 0.198 | 1.964 | 15 | 0.068 |
| Physical aggression mean | –0.554 | 0.228 | 2.433 | 15 | 0.028 |
| All-girl school | 0.765 | 0.817 | 0.935 | 15 | 0.365 |
| Level 1. Physical aggression slope | | | | | |
| Intercept | 0.696 | 0.086 | 8.076 | 15 | 0.000 |
| Level 2 | | | | | |
| Group size | –0.028 | 0.013 | 2.207 | 15 | 0.043 |
| Relational aggression mean | 0.232 | 0.093 | 2.494 | 15 | 0.025 |
| Physical aggression mean | –0.378 | 0.087 | 4.322 | 15 | 0.001 |
| All-girl school | 0.703 | 0.282 | 2.489 | 15 | 0.025 |

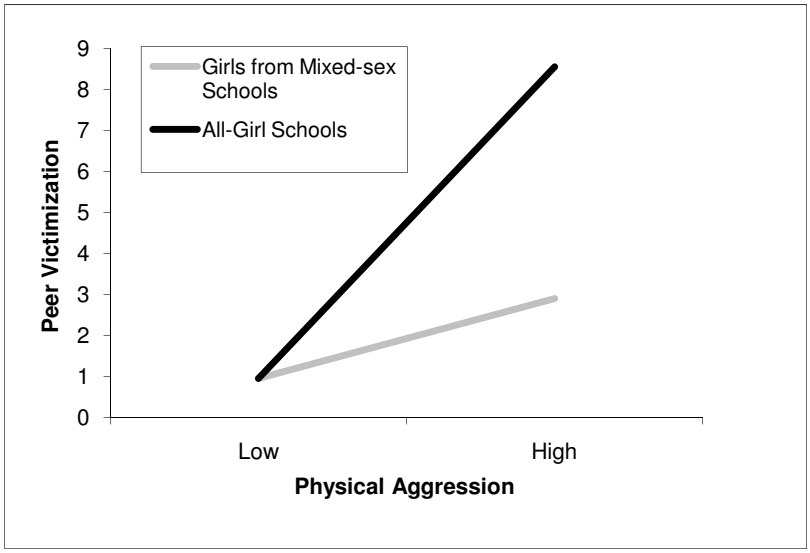


**Figure 3.** Slopes for the association between physical aggression and peer victimization among girls as a function of being from all-girl schools or from mixed-sex schools.

of aggression are differentially normative for boys and girls, as well as for girls in mixed-sex schools compared to girls in all-girl schools. The findings show also that group descriptive norms account for differences in the factors underlying victimization. Specific types of aggression were observed to be associated with victimization only when that it was nonnormative in the peer group. Finally, we found a differential influence of the types of aggression for boys and for girls. Also, for girls, these differences vary across the types of schools examined. Altogether, the findings from this study point to the power of contextual factors to affect the association between aggression and victimization. In doing so, they confirm and challenge ideas about the role of gender group norms as a determinant of contextual variability in the processes underlying peer relations.

The specific findings from the analyses in this study are as follows: Between-group comparisons confirmed previous findings that boys use more direct/physical forms of aggression than girls do (Card et al., 2008). The difference between boys and girls on the measures of indirect or relational aggression was observed to vary as a function of context. In the present study, boys exhibited lower levels of relational aggression than girls in

all-girl schools, but comparable levels to girls in mixed-sex schools. On the other hand, the within-sex comparisons revealed some findings that we consider more relevant to the issue of variability in peer group norms. Overall, girls were observed to engage in more indirect than direct types of aggression, whereas the opposite pattern was found in boys. A repercussion of this observation is that indirect forms of aggression may be more tolerable among girls, whereas direct types of aggression may be more tolerable among boys. These findings provide support to the idea of the two cultures proposed by Maccoby (1998).

The multilevel models demonstrated that the association between victimization and aggression varies by sex and that this association is influenced by the peer group's mean levels of aggression. Specifically, more normative forms of aggression were less strongly associated with victimization, whereas less normative aggression was more strongly associated. Finally, the multilevel analysis that included only girls from both types of schools showed that the association between physical aggression and victimization was stronger for students from the all-girl school compared with students from the mixed-sex school.

Among boys, a significant association between aggression and victimization was seen only for their nonnormative forms of aggression, specifically relational aggression. Conversely, for girls, only physical aggression was associated with victimization, which corresponds to the less normative type of aggression for this group. In other words, depending on the context children might find themselves, the behaviors that they exhibit are differentially associated with being victimized by their peers. Specifically, high levels of a form of aggression in a particular group meant that the association between that form of aggression and victimization was weaker.

The pattern of associations observed for girls was found to vary as a function of the gender composition of the school. The association between peer victimization and physical aggression differed between students from all-girl schools and girls from mixed-sex schools. It should be noted, however, that this difference was not in the expected direction. Based on Harris's (1995) group socialization theory, it was expected that girls who are exposed to an other-sex out-group would show a stronger association between physical aggression and peer victimization. Perhaps due to stark group contrasts for girls and boys from mixed-sex schools, in that members of a group tend to differentiate themselves from members of other groups, the association was expected to be strongest for girls from mixed-sex schools as a means of reinforcing the girls' group norms and stereotypes in contrast to boys from mixed-sex schools. However, it was the students from all-girl schools who showed the strongest association instead.

One possible explanation for this finding can be seen from a closer inspection of the nature of group norms in a context such as a mixed-sex school. Students' exposure to interactions between members of the other sex might inevitably decrease the salience of their own peer group norms. In other words, it is likely that girls from mixed-sex schools are witnesses to more permissible acts of physical aggression among boys and are therefore more forgiving of this form of aggression among their same-sex peers. In this way, girls in the all-girl school may instead reflect a less "sullied" example of the group expectations among girls since they are exposed to fewer interactions between members of male peer groups. Further research is needed to clarify the direction of these associations among early adolescents from various contexts.

A major strength of this study is its acknowledgment of the importance of contextual factors as moderators of the relationship between aggression and victimization. The differences related to the prevalence of aggression between boys and girls illustrate the idea that both contexts have peer norms that operate in different ways, depending on what is considered normative or acceptable in each context. In the multilevel models, the peer group means of each form of aggression were used as a proxy of peer norms. These Level 2 predictors were considered indices that some behaviors are tolerated and used more than are others. The analyses confirmed this assumption in that the association between aggression and victimization differed as a function of the group means of either type of aggression. This set of findings raises some important questions about how to use group norms to study contextual variations. The measure we have used is, by definition, a descriptive group norm in the sense that it is a group average that characterizes the typical behavior in the group. One could argue that other measures, such as a measure of expectations, might be better indices of the normativeness of various behaviors in these contexts. In this study, participants were not explicitly asked to describe the degree to which various forms of behavior are tolerated in their peer group, something that has been known as *injunctive norms* (Cialdini et al., 1991). Thus, the evaluation of the moderating effect of injunctive norms deserves further exploration.

The current study relied primarily on peer assessments. Self-report measures of aggression and victimization might produce a different set of results. The use of self-reports of aggression was discouraged because of relatively consistent findings in the literature regarding biases of social desirability (Fiske & Pearson, 1970; Saunders, 1991). As the current study is aimed at elucidating the effects of contexts on the associations between aggression and victimization, biases inherent to self-report measures would

likely have made the associations difficult to interpret. Moreover, evidence exists to demonstrate that peer reports of aggression are a reliable indicator of the observed levels of such behavior (Rubin et al., 2006). Finally, concerning self-report measures of peer victimization, also evidence exists to suggest that peer reports of victimization and self-reports of victimization (while different) remain comparable (Crick & Grotpeter, 1995; Prinstein, Boergers, & Vernberg, 2001).

Finally, it is worth noting that comparisons between peer groups might be difficult considering the range of differences in same-sex group sizes. The students from the all-girl schools were nominated by a larger number of raters, and one could argue that these would bias the peer reports. Evidence in the literature is rather consistent that the processes that take place in large versus small classes remain largely the same (Mosteller, Light, & Sachs, 1996). Nevertheless, careful attention was taken to control for the direct influences of same-sex group size. Interestingly, the effect sizes of this variable on the prediction of peer-nominated scores did not appear to be large enough to adjust the observed variables or to include the group size as a covariate in the analyses. This calls for the attention to the exploration of the effect of group size in peer assessment procedures in subsequent studies.

While this study has attempted, and hopefully succeeded, in answering a number of questions concerning how contexts shape the associations among behaviors, a number of limitations should be noted. For one, differences across two types of schools (i.e., same-sex vs. mixed-sex schools) were explored. However, the self-selection process of students in same-sex schools, which could be due in part to parental motivations, is confounded in our results. On the other hand, while the current report described the association between victimization and aggression among students from mixed-sex schools and those from all-girl schools, there were no groups of students from all-boy schools. It would be very interesting to see whether the association between physical aggression and peer victimization is also negligible in that context and, moreover, whether there is a similar difference between boys from all-boy schools and mixed-sex schools on the association between relational aggression and victimization. While attempts were made to recruit such schools for the current study, the difficulties in finding all-boy school that were still comparable to the other schools made it impossible.

Additionally, the current study highlighted the importance of studying relational aggression and physical aggression since they were differentially associated with victimization in each context. It would likely be fruitful to explore other forms of aggression in these contexts. While verbal

aggression would be an interesting candidate, differentiating between reactive and proactive aggression might also yield fascinating results. It could be hypothesized that the proactive and reactive aggression might be encouraged in some contexts more than others.

In sum, the current study examined contextual variations in the association between victimization and aggression. Three contextual variables were considered: gender, group norms, and school type (i.e., mixed-sex vs. same-sex school). Among boys, victimization was associated with relational aggression but not physical aggression; conversely, among girls, victimization was associated with physical aggression but not relational aggression. Peer group means for types of aggression were observed to moderate the associations between aggression and victimization. Specifically, types of aggression that were normative for a group were less strongly associated with victimization, whereas when a type of aggression was less normative for a group it was more strongly associated with aggression. Finally, for girls from all-girl schools, a stronger association between physical aggression and victimization was observed than for the girls from mixed-sex schools. This finding may be the result of the more frequent opportunities for girls in a mixed-sex school to witness acts of physical aggression by the male schoolmates even though the girls may engage in these acts very rarely themselves. These findings highlight the importance that context plays in shaping individual behavior and its effects on experiences in the classroom. Further studies are needed so that context effects can be more fully understood.

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