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Forms of Aggression, Social-Psychological Adjustment, and Peer Victimization in a Japanese Sample: The Moderating Role of Positive and Negative Friendship Quality

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Abstract The purpose of these studies was to examine the frequency and stability of relational and physical aggression and their associations with social-psychological adjustment or peer victimization, and how friendships are involved in the relations between forms of aggression and peer victimization in Japanese children. The sample consisted of 452 (Study 1) and 138 (Study 2) children who were in the fourth and fifth grades. Results of Study 1 demonstrated that relational aggression was uniquely and more strongly associated with internalizing adjustment problems than physical aggression. Moreover, Study 2 revealed that relational aggression and physical aggression were stable over a 6-month period and the stability of relational aggression was reinforced by negative friendships (i.e., high levels of exclusivity and friend victimization). Further, the association between relational aggression and relative *increases* in relational victimization was attenuated by positive friendships (i.e., high levels of intimacy, companionship, and friendship satisfaction). Interestingly, friendships were unrelated to physical aggression and its relation to physical victimization. The age and gender of the children in the two studies were also examined. Cultural and developmental processes involving forms of aggression, friendships, social-psychological adjustment, and peer victimization were discussed.

Keywords Relational aggression · Friendships · Social-psychological adjustment · Peer victimization · Culture

A substantial body of research has demonstrated that in addition to physical or overt forms of aggression (Coie and Kupersmidt 1983), more indirect, subtle forms of aggression (Bjorkqvist 1994; Galen and Underwood 1997), such as relational aggression are detrimental to children's social-psychological adjustment (Crick and Grotpeter 1995). Relational aggression, defined as behaviors that harm others through the manipulation of interpersonal relationships, includes maliciously ignoring and socially excluding peers, spreading rumors, or threatening to end friendships (Crick et al. 1999). Recent investigations have indicated that some relationally aggressive children may become popular and socially competent (e.g., Rose et al. 2004). However, the majority of research in the last decade has documented that similar to the findings with regard to physical aggression, relational aggression is associated with multiple developmental problems, including peer rejection, externalizing adjustment problems, and internalizing adjustment problems (e.g., Crick and Grotpeter 1995).

Despite significant progress in our understanding of relational aggression and social-psychological adjustment problems, the majority of past studies in this arena have focused primarily on examining these issues with Western

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samples. Thus, little is known concerning correlates and consequences of relational aggression and physical aggression in unexplored cultures such as in Japan. Moreover, less is understood regarding how friendships are involved in these associations in Japan or any other nations (Crick et al. 1999). Although the literature has documented the pervasiveness of aggression and the crucial role of friendships in social processes relating to aggressive behavior and subsequent experiences of peer victimization in Japan, empirical research methodically investigating these problems with non-Western samples is scant (Crick et al. 2007). These issues are problematic given the literature that has indicated that the failure to examine the role of culture in the relation between forms of aggression and adjustment may lead researchers to neglect potential cross-cultural differences and similarities in these domains (Crick et al. 2007). Further, considering cross-cultural differences in the meaning of relationships (i.e., Japanese children, in compared to Western children, place stronger emphasis on interdependence of relationships; Rothbaum et al. 2000), the role of relationships in children's socialization, including the development and maintenance of relational aggression may differ across cultures. Accordingly, the present studies addressed this disparity in the literature by using two independent samples and examined the concurrent and longitudinal associations involving aggression, friendships, social-psychological adjustment, and peer victimization in Japanese children.

Relational and Physical Aggression

Relational aggression has been examined at various developmental stages from preschool to adolescence (e.g., Crick et al. 1999). A relatively recent study examining the measurement invariance and stability of forms of aggression demonstrated that aggression, whether it was relational or physical, was stable and structurally consistent between 4 and 11 years of age (Vaillancourt et al. 2003). Most of these studies conducted within Western cultures consistently find gender differences in the rates of aggression use; that is, boys are more likely to use physical aggression, whereas girls are more engaged in a constellation of relational aggression acts. These gender differences may arise in part due to the differential socialization of boys and girls (Maccoby 1990). For example, the literature has suggested that relative to boys, girls place more emphasis on close relationships (Rose and Rudolph 2006) and, thus, they may view such indirect aggression as more effective to hurt peers (Crick and Zahn-Waxler 2003). Alternatively, girls may use more relational aggression (and less physical aggression) when they grow older conceivably because they view relational aggression as more acceptable for girls' peer group (Cote et al. 2007). Despite these findings that highlight gender differences in relational aggression, a recent meta-analytic study revealed that whereas gender differences in physical aggression were substantial, gender differences in relational aggression were quite minimal (Card et al. 2008). These mixed results suggest that further investigation of gender differences in the rates of aggression use is imperative.

Research in this arena also has indicated that relational aggression is *uniquely* associated with social-psychological adjustment problems. For example, Crick and Grotpeter (1995) found that relational aggression was related to peer rejection and depressive symptoms above and beyond the contribution of physical aggression. Moreover, Crick et al. (2006) showed that relative to non-relationally aggressive children, relationally aggressive children displayed higher levels of aggression and delinquency, even after controlling for the effect of physical aggression. Further, a more recent study examining developmental trajectories in relational aggression revealed that relational aggression increased for girls (not for boys) and the changes in relational aggression were associated with internalizing adjustment problems over an academic year (Murray-Close et al. 2007). These findings signify that relational aggression is predictive of multiple developmental problems, especially for girls. It is noted, however, that studies examining gender differences in the relation between forms of aggression and social-psychological adjustment are scarce, even with Western samples.

Forms of Aggression: Cross-Cultural Evidence

A growing body of cross-cultural studies examining forms of aggression have reported the existence of relational aggression in non-Western cultures (e.g., French et al. 2002; Hart et al. 1998). These cross-cultural studies have demonstrated that multiple informants (i.e., teachers and peers) reliably distinguish between relational aggression and physical or overt aggression across various cultures. Likewise, the literature has suggested that various forms of peer victimization, which reflect forms of aggression, exist in the Japanese society (Morita et al. 1999; Smith et al. 2002). For example, Smith and colleagues examined the constructs of direct and indirect victimization, finding that physical victimization was conceptually different from relational victimization. Consistent with this finding, recent studies examining the nature of aggression found that relational aggression was conceptually distinct from physical and verbal aggression in Japan (e.g., Sakai and Yamasaki 2004). However, relatively little is known concerning whether, in Japan, the frequency of relational and physical aggression, the association between forms of aggression and social-psychological adjustment problems, and the direction

of these associations differ from or are similar to the findings of studies conducted in Western cultures. Thus, the first study was designed to address these issues.

The Moderating Role of Friendship Quality

Examining the quality of friendships seems to be crucial to enhance the understanding of the development and maintenance of relational and physical aggression. The literature has suggested that friendships, which refer to ties that are close, reciprocated, and voluntary in nature, are associated with a host of positive outcomes, including success with peers and prosocial behavior and inversely related to negative outcomes, such as isolation and difficulties in school (Hartup and Stevens 1997). In the same vein, the literature has documented that the quality of friendships influences the development and maintenance of relational aggression and its relation to social problems such as peer victimization. For example, a study examining the features of relationally aggressive friendships found that friendships of relationally aggressive youth were more exclusive and abusive (Grotpeter and Crick 1996). Another study revealed that children who frequently interacted with relationally aggressive friends were more likely to be relationally aggressive within the same friendships a year later (Werner and Crick 2004). This is in part because relationally aggressive children may experience relational victimization by their close friends and may retaliate against such malicious friends by using more relational aggression. These findings suggest that friendships of relationally aggressive children may be closed, exclusive, and enmeshed, which may provide a socializing environment in which children may use more relational aggression and may experience more relational victimization. Thus, aggression, *particularly* relational aggression may be more stable and detrimental to peer victimization for children who form exclusive and abusive friendships.

Despite the potential interactive effects of relational aggression and negative friendships, positive friendships may serve as a buffer to prevent the stability of aggression and its relation to future peer victimization. Cohen and Wills proposed *the stress—buffering model* (1985), which posits that the effects of stressful life events on psychosocial problems can be attenuated by social support. Given this theory, it is plausible that positive, high-quality friendships may be a protective factor for the continued aggression and experiences of peer victimization. For instance, close, intimate, and trustworthy friendships can help curb the continuity of relational aggression and minimize the effects of relational aggression on future levels of interpersonal problems such as peer victimization. Thus, it is possible that relationally aggressive children who form positive friendships may be less likely to be relationally aggressive toward and relationally victimized by peers than children who do not form these friendships.

Cultural Socialization of Japanese Children

Traditionally, Japanese culture has been described as more collectivistic than individualistic (Markus and Kitayama 1991). Children in such a relationship-oriented culture (i.e., Japan) grow up in an environment, in which they are expected to interact with others harmoniously and form interdependent relationships (De Vos 1996; Johnson 1993). Notably, Bandura's social learning theory (1977) suggests that children acquire the rules, standards, and values of a culture through interacting with others. Given this theory, it is conceivable that Japanese children are socialized to learn specific cultural beliefs, values, and practices (i.e., forming interdependent relationships). Consistent with this view, the literature has demonstrated that Japanese parents place an emphasis on interdependent relationships with children, and these children tend to form friendships that largely focus on intimacy, harmony, and stability (Rothbaum et al. 2000). In fact, studies examining the quality of friendships of early adolescents revealed that among dimensions of friendships, reliance and emotional security (i.e., the extent to which children are loyal to, feel comfortable being with, and know the details about friends) were the most central to friendships that Japanese children typically form (Enomoto 1999; 2000).

Given the cultural socialization of Japanese children, children who exhibit aggression, especially relational aggression may be at risk for social-psychological adjustment problems. That is, children who use relational aggression may be viewed as aversive and may be rejected and ostracized by peers because these children seemingly act against cultural beliefs and values. In turn, these children may feel so estranged from peer groups that they lack of a sense of belonging and relatedness, which consists of a central part of Japanese culture (Markus and Kitayama 1991; Shimizu 2000). Taken together, Japanese culture may be the socializing context in which relationally aggressive children are more vulnerable to social-psychological adjustment problems and are more exposed to peer victimization, in compared to physically aggressive children.

The Present Studies

The first study examined the frequency and the concurrent associations between forms of aggression and social-psychological adjustment problems in fourth and fifth grade Japanese children. Given the past research in this area, it was hypothesized that relational aggression would be more commonly used than physical aggression. It was also theorized that

relational aggression would be *uniquely* associated with externalizing and internalizing adjustment problems. The second study investigated the stability and the longitudinal associations between forms of aggression and peer victimization, and the role of friendship quality in these associations. It was hypothesized that relational aggression would be more stable than physical aggression. Further, it was theorized that friendships would serve as a moderator in the stability of relational aggression and its associations with peer victimization. For example, positive friendships would attenuate the stability of relational aggression and the association between relational aggression and relational victimization. By contrast, negative friendships would reinforce the stability of relational aggression and its association with relational victimization. To the best of our knowledge, no studies have examined the differential associations between forms of aggression and social-psychological adjustment or peer victimization with non-Western samples nor have tested the role of friendship quality in these associations.

Study 1

Method

Participants

Participants were 452 students (50% males) who were recruited from 15 classrooms in six public elementary schools in a suburb of Tokyo. The sample consisted of fourth (60%) and fifth (40%) grade students (9–10 years old). The socioecomonic status of the participants was estimated to be lower middle to upper middle class based on demographic information reported by teachers who were familiar with the neighborhood where the schools were located. We viewed this sample as representative of contemporary Japanese society. Because it is not a standard procedure in Japan, we did not obtain consent forms from the children's parents when doing research in the schools. We followed this practice in order to be culturally appropriate in our interactions with the schools and their students. Instead, we fully discussed issues of confidentiality with the teachers before collecting the data. This approach was approved by the IRB at the first author's university.

Procedure

Children were asked to complete a questionnaire about their social behavior, including relational and physical aggression and depressive symptoms. All children agreed to participate in this study. Prior to the assessment, children were informed that all responses would be totally confidential and would in no way impact their grades and that they could skip any or all questions that they felt uncomfortable answering without penalty. Classroom teachers were asked to complete a questionnaire about participating children's social-psychological adjustment problems. They were encouraged to think about each child separately when completing the forms. To help compensate them for their time and to provide an incentive for timeliness, teachers were paid $100 for completing this measure for all their students.

The authors were mindful of the validity of all measures and their applicability to Japanese children. Prior to the data collection, the authors listed possible items describing incidents of relational aggression in school-aged children such as social exclusion, ignoring, and verbal threat and physical aggression such as hitting, punching, and threat to physically attack peers. By referring to a nation-wide survey concerning children's bullying/peer victimization conducted in Japan (Ministry of Education, Culture, Sports, Science, and Technology—Japan 2004) plus consulting the third author of this study, we chose representative items of relational aggression and physical aggression. These items were checked against the extant measure (i.e., the Children's Social Behavior Scale, CSBS; Crick and Grotpeter 1995) to ensure that all items reflect incidents of relational aggression that are occurring in Japan. Consequently, no new items were added. All measures were translated into Japanese by the third author of this study, a native speaker of Japanese. They were then back-translated into English by an English-Japanese bilingual speaker to ensure the linguistic validity of the Japanese version.

Measures

Relational and Physical Aggression Children's levels of relational and physical aggression were assessed using the CSBS (Crick and Grotpeter 1995). Items reflected physical aggression (two items; e.g., "Some kids hit other kids at school. How often do you do this?") and relational aggression (four items; e.g., "Some kids try to keep certain people from being in their group when it is time to play or do an activity. How often do you do this?"). The response scale ranged from 1 (never) to 5 (all the time). Children's responses to each item were summed to yield total relational aggression and physical aggression scores (score range 5–20 and 5–10, respectively). This measure demonstrated acceptable reliability with Cronbach's αs of 0.65 and 0.80 for relational aggression and physical aggression, respectively. The validity of the measure has been confirmed in previous research (Kawabata et al. 2010). For the current sample, a confirmatory factor analysis corroborated the validity of a four-factor model, including relational aggression, physical aggression, prosocial behavior, and peer acceptance, χ^2 (48)=111.12, normal fit index (NFI) = 0.93, comparative fit index (CFI) = 0.96, incremental fit

index (IFI) = 0.96, root mean square error of approximation (RMSEA) = 0.05.

Depressive Symptoms Children's degree of depressive symptoms was assessed using the Children's Depression Inventory (CDI; Kovacs 1985). For each item, children were read a set of three statements and asked to choose which statement most closely resembled their thoughts and feelings during the past 2 weeks (e.g., "I feel like crying once in a while" versus "I feel like crying many days" versus "I feel like crying everyday"). Children's responses to each item were scored on a scale from 0 to 2, with higher scores representing greater depressive symptoms. For the present study, one item from the CDI that assesses suicidal ideation was dropped, and two positively-toned filler items (e.g., "I like summer vacation a lot" versus "I like summer vacation a little" versus "I do not like summer vacation") were added (see Crick and Grotpeter 1995) for ethical reasons. The questions were summed to generate a total depression score (score range 0–62). In the present sample, the CDI displayed high internal consistency, Cronbach's α=0.85. The reliability and validity of the Japanese version of CDI have been confirmed in previous research conducted in Japan (Koizumi 1991; Sakurai 1995).

Externalizing and Internalizing Adjustment Problems Teacher reports of participants' internalizing and externalizing symptoms were assessed using the Teacher Report form of the Child Behavior Checklist (TRF; Achenbach 1991). As part of the larger teacher report battery, teachers were presented with items describing symptoms of delinquency, anxiety-depression, and withdrawal. These subscales were used because they clearly described major behavior problems that Japanese school-aged children typically display. A subscale of aggression was dropped because items of teacher-reported aggression overlapped with self-reported physical aggression. Teachers rated how true each item was of participants on a scale from '0' (not true) to '2' (very true or often true). The validity and reliability of the TRF has been confirmed with Japanese samples (e.g., Itani et al. 2001). In the present sample, the CBCL displayed acceptable internal consistency, Cronbach's αs=0.85 and 0.80, for externalizing adjustment problems (i.e., delinquency) and internalizing adjustment problems (i.e., the composite scores of anxiety-depression and withdrawal), respectively.

Results

Descriptive Statistics

A MANOVA was conducted to examine the frequency of relational and physical aggression. Grade (0 = fourth, 1 = fifth) and gender (0 = male, 1 = female) served as independent variables and relational aggression and physical aggression served as dependent variables. Multivariate tests indicated a significant main effect of grade, F (2, 461)=2.97, p=0.05, η_p^2=0.01 and gender, F (2, 461)=16.58, p<0.001, η_p^2=0.07. Univariate tests showed grade differences in relational aggression, F (1, 462)= 3.80, p=0.05, η_p^2=0.008 (M=6.40, SD=0.14; M=6.82, SD=0.17, for fourth grade children and fifth grade children, respectively, and gender differences in relational aggression, F (1, 462)=23.47, p<0.001, η_p^2=0.05 (M= 7.13, SD=0.15; M=6.09, SD=0.15, for boys and girls, respectively) and in physical aggression, F (1, 462)= 23.70, p<0.001, η_p^2=0.05 (M=4.87, SD=0.13; M=4.02, SD=0.12, for boys and girls, respectively). These findings signify that older children displayed a greater level of relational aggression than younger children; and boys exhibited higher levels of physical aggression plus relational aggression than girls. No other significant effects were found.

Associations Between Forms of Aggression and Social-Psychological Adjustment

To examine the associations between forms of aggression and social-psychological adjustment problems, mixed linear models were conducted using restricted maximum likelihood (REML) estimation. The mixed procedure was used (instead of traditional regression) because it is a better mechanism for handling data that are missing at random. Further, because the data were structured hierarchically (i.e., observations were not independent since they are nested within classrooms), mixed linear models are more relevant to test the hypotheses proposed in this particular study (Raudenbush and Bryk 2002). Specifically, the error terms or residuals of each predictor in the models are set to vary across classrooms, allowing for adjusting the variance that is due to classrooms (i.e., controlling for the effect of classrooms on criterion variables). This procedure estimates more accurate effects of predictors than the traditional regression approach.

Prior to main analyses, an unconditional model with a random effect of classrooms was conducted. This preliminary analysis tested whether the means of each criterion variable differed across classrooms. Results showed that classroom-level estimates were significant for internalizing adjustment problems and depressive symptoms (B=0.15, p<0.05; B=0.07, p<0.10), but not for externalizing adjustment problems (B=0.04, *n.s.*). These findings indicate that the means of internalizing adjustment problems and depressive symptoms varied across classrooms, suggesting that considering the effects of classrooms on these variables is imperative.

Two models[1] were conducted for each criterion variable; one with grade, gender, and physical aggression serving as independent variables and the other with these existing variables plus relational aggression. Indices of negative adjustment such as externalizing adjustment problems, internalizing adjustment problems, and depressive symptoms served as criterion variables. Estimating these separate models allowed us to examine whether relational aggression would be *uniquely* related to the indices of negative adjustment above and beyond the contribution of physical aggression. All continuous variables were standardized to allow comparisons of scores assessed on different scales.

Results showed that controlling for the variance in classrooms, physical aggression was positively associated with externalizing adjustment problems and depressive symptoms (B=0.11, p<0.05; B=0.24, p<0.001). Further, relational aggression was positively associated with internalizing adjustment problems and depressive symptoms even after controlling for the effect of physical aggression (B=0.12, p< 0.05; B=0.21, p<0.001). Correlations and results are presented in Table 1 and Table 2, respectively.

Discussion

The main goal of the first study was to examine the frequency of aggression and its associations with social-psychological adjustment problems in Japanese children. One important finding of this study is that relative to fourth grade children, fifth grade children displayed a greater level of relational aggression. This is in line with a previous study that examined developmental trajectories in relational aggression among preadolescents and revealed that relational aggression increased over an academic year (Murray-Close et al. 2007). Given that friendships become developmentally salient (Hartup and Stevens 1997), relationally aggressive behavior may become more problematic and evident in older children's peer group.

Results of this study, further, revealed that relational aggression was uniquely and more strongly associated with internalizing adjustment problems (not externalizing adjustment problems) than physical aggression. These findings may be explained by cultural socialization of Japanese children. The literature has suggested that Japanese children are expected to socialize through learning cultural beliefs and values such as being sensitive and cooperative to others in relationships and groups and forming harmonious, stable friendships (Rothbaum et al. 2000). Given this view, aggressive children, and especially relationally aggressive children may be viewed as non-normative by peers in the interdependent context conceivably because they seemingly act against these cultural models. Thus, these children may be rejected by multiple peers and isolated from peer groups due to the aversive nature of relational aggression. Because of these experiences, these children may feel stressed and apprehensive about ongoing and future social interactions with peers. Taken together, relationally aggressive children may undergo multiple internalizing adjustment problems, especially in the interdependent context.

[1] Additional two-way interaction terms (i.e., physical aggression × gender, relational aggression × gender, physical aggression × grade, and relational aggression × grade) were entered in order to examine the role of gender and age in the association between relational aggression or physical aggression and social-psychological adjustment problems. We found that most interaction terms were not significant. Thus, these results were not included in final models. One exception was the significant relational aggression × gender interaction for externalizing adjustment problems. A follow-up mixed linear model revealed that the relation between relational aggression and externalizing adjustment problems was significant only for boys (B=0.25, p<0.001, B=−0.12, *n.s.*, for boys and girls, respectively).

Study 2

Method

Participants

Participants were 138 students (50% males) who were recruited from seven classrooms in three public elementary schools in a suburb of Tokyo. These participants were independent from those who participated in Study 1. The sample consisted of fourth (58%) and fifth (42%) grade students (9–10 years old).

Procedure

Participants' friendships, aggression, and experiences of peer victimization were assessed at two time points during the course of a school year (i.e., spring and fall). Approximately 90% of the sample from the spring assessment (Time 1) continued through the fall (Time 2). The first assessment was conducted in spring, when all Japanese schools start. All children agreed to participate in this study. After children were informed the voluntary nature and confidentiality of the study, children were asked to complete a questionnaire regarding the quality of friendships. Classroom teachers were asked to complete a questionnaire about children's levels of peer victimization (relational and physical) and aggressive behavior (relational and physical). All other aspects and procedures, including translations of the measures, of Study 2 were identical to Study 1.

Measures

Relational and Physical Aggression Teacher reports of participants' relational and physical aggression were assessed

Table 1 Zero-order Correlations among Variables

	1	2	3	4	5	6	7
1. Physical aggression	–						
2. Relational aggression	0.48***	–					
3. Prosocial behavior	−0.19***	−0.18***	–				
4. Peer acceptance	−0.09*	−0.12*	0.31***	–			
5. Externalizing problems	0.14**	0.11*	−0.04	−0.05	–		
6. Internalizing problems	0.02	0.09[a]	−0.12*	−0.18***	0.27***	–	
7. Depressive symptoms	0.25***	0.28***	−0.23***	−0.52***	0.12*	0.23***	–
Mean	6.55	6.54	12.89	7.51	0.54	2.22	13.66
Standard deviation	2.51	2.25	2.89	1.86	1.53	2.98	7.12

*$p<0.05$. **$p<0.01$. ***$p<0.001$

[a] $p<0.10$

using the Children's Social Behavior Scale—Teacher Report (CSBS-T; Crick 1996). Teachers were asked to rate each child on a 5-point scale based on how true each statement was for each child. The response scale ranged from 1 (not at all true) to 5 (always true). Relational aggression consisted of five items (e.g., "This child spreads rumors or gossips about some peers" or "This child ignores the peer or stops talking to the peer"). Physical aggression consisted of four items (e.g., "This child hits or kicks peers" or "This child threatens to hit or beat up other children"). These scores of relational aggression and physical aggression exhibited acceptable reliability at time 1 and time 2 in the present sample (Cronbach's αs for relational aggression = 0.93 and 0.90, respectively; Cronbach's αs for physical aggression = 0.96 and 0.96, respectively). A confirmatory factor analysis of the four-factor model, including relational aggression, physical aggression, relational inclusion, and leadership corroborated the validity of this measure, χ^2 (71)=178.51 and 186.00, CFI = 0.96 and 0.95, and SRMR = 0.08 and 08, at time 1 and time 2, respectively.

Table 2 Estimates of Fixed Effects from Mixed Linear Models Predicting Indices of Social-Psychological Adjustment

	Criterion variables (Time 1)					
	Externalizing adjustment problems		Internalizing adjustment problems		Depressive symptoms	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Fixed effects						
Intercept	−0.08(0.12)	−0.08(0.13)	−0.02(0.18)	−0.02(0.19)	−0.16(0.12)	−0.17(0.11)
Grade	0.07(0.16)	0.08(0.16)	−0.17(0.25)	−0.14(0.25)	0.33(0.14)*	0.37(0.13)
Gender	0.13(0.11)	0.11(0.11)	0.19(0.10) [a]	0.16(0.10)	−0.05(0.10)	−0.07(0.10)
Physical aggression	0.11(0.06)*	0.07(0.06)	−0.04(0.05)	−0.09(0.06)	0.24(0.05)***	0.15(0.05)**
Relational aggression		0.08(0.08)		0.12(0.06)*		0.21(0.05)***
Random effects						
Level 1	0.96(0.72)***	0.96(0.72)***	0.84(0.06)***	0.83(0.06)***	0.87(0.06)***	0.85(0.06)***
Level 2	0.04(0.03)	0.05(0.04)	0.16(0.08) [a]	0.17(0.09) [a]	0.04(0.03)	0.03(0.02)
Goodness of fit						
Deviance	1,069.93	1,072.04	1,022.43	1,022.29	1,066.72	1,056.45
AIC	1,073.93	1,076.04	1,026.43	1,026.29	1,070.72	1,060.45
BIC	1,081.76	1,083.87	1,034.25	1,034.11	1,078.61	1,068.34

Grade (0 = fourth, 1 = fifth = a reference group), Gender (0 = male, 1 = female = a reference group)

*$p<0.05$. **$p<0.01$. ***$p<0.001$

[a] $p<0.10$

Relational and Physical Victimization Teacher reports of participants' relational and physical victimization were assessed using the Children's Social Experience Questionnaire—Teacher Report (CSEQ-T, Cullerton-Sen, and Crick 2005). Teachers were asked to rate each child on a 5-point scale based on how true each statement was for each child. The response scale ranged from 1 (not at all true) to 5 (always true). Relational victimization consisted of three items (e.g., "This child gets left out of the group"). Physical victimization consisted of three items (e.g., "This child gets pushed or shoved by peers"). These scores of subtypes of peer victimization exhibited acceptable reliability at time 1 and time 2 in the present sample (Cronbach's αs for relational victimization = 0.88 and 0.87, respectively; Cronbach's αs for physical victimization = 0.93 and 0.91, respectively). A confirmatory factor analysis of the two-factor model, including relational victimization and physical victimization supported the validity of this measure, χ^2 (8)= 2.74 and 35.35, CFI = 1.00 and 0.95, SRMR = 0.01 and 0.04, at time 1 and time 2, respectively.

Friendship Quality Children's friendship qualities were assessed using the Friendship Quality Measures (FQM, Grotpeter and Crick 1996). This measure included eight subscales such as friend relational victimization, friend physical victimization, subject's intimacy toward friend, friend's intimacy toward subject, subject's exclusivity toward friend, friend's exclusivity toward subject, companionship, and friendship satisfaction. Children were presented with items describing these subscales; friend relational victimization (four items; e.g., "My friend tells my secrets to other kids when s/he is mad at me"), friend physical victimization (three items; e.g., "My friend hits and kicks me when s/he is mad at me"), high levels of intimacy toward their best friend (three items; e.g., "I can tell my friend about my problems"), high levels of intimacy toward subject (three items; e.g., "My friend can tell me his/her secrets"), high levels of exclusivity toward their best friend (three items; e.g., "I would rather hang out with my friend alone, and not other kids too"), high levels of exclusivity toward subject (three items; e.g., "It bothers my friend if I hang out with other kids even when s/he is busy"), companionship (three items; e.g., "My friend does fun things with me"), and friendship satisfaction (two items; e.g., "How happy are you with this friendship"). Children were then asked to identify how true each item was for them within their friendships. The scale ranged from 1 (not at all true) to 5 (almost always true). The scale for friendship satisfaction ranged from 1 (very unhappy) to 5 (very happy).

To reduce the number of subscales and to create broader constructs of friendships, an exploratory factor analysis, using a principal axis factoring and varimax rotation was conducted. This procedure extracted two distinct factors: one with subject's intimacy, friend's intimacy, companionship, and friendship satisfaction, and the other with friend relational victimization, friend physical victimization, subject's demand of exclusivity, and friend's demand of exclusivity. Each subscale was summed to yield two constructs: positive friendship qualities and negative friendship qualities. These constructs demonstrated acceptable reliability at time 1 and time 2 (Cronbach's αs for positive friendships = 0.74 and 0.78, respectively and Cronbach's αs for negative friendships = 0.61 and 0.66, respectively).

Results

Descriptive Statistics

Relational and Physical Aggression A within-subject ANOVA was conducted to examine the stability of mean levels of relational aggression and physical aggression. Grade (0 = fourth, 1 = fifth) and gender (0 = male, 1 = female) served as between-subject variables and relational aggression and physical aggression served as within-subject variables. Multivariate tests regarding between-subject variables showed a significant effect of gender, F (2, 111)=7.27, $p<0.01$, $\eta_p^2=0.12$. Univariate tests showed gender differences in physical aggression, F (1, 112)=5.31, $p<0.05$, $\eta_p^2=0.05$. Thus, physical aggression was more commonly used among boys than girls. No other significant effects were found.

Multivariate tests regarding within-subject variables showed a significant effect of time, time × gender, and time × gender × grade, F (2, 111)=3.01, $p=0.05$, $\eta_p^2=0.05$; F (2, 111)=9.22, $p<0.001$, $\eta_p^2=0.14$; F (2, 111)=4.95, $p<0.01$, $\eta_p^2=0.08$, respectively. Univariate tests showed that the effects of time on relational aggression and physical aggression, F (1, 112)= 5.65, $p<0.05$, $\eta_p^2=0.05$; F (1, 112)=3.98, $p<0.05$, $\eta_p^2=0.03$, the effects of time × gender on relational aggression and physical aggression, F (1, 112)=2.86, $p<0.10$, $\eta_p^2=0.03$; F (1, 112)=4.19, $p<0.05$, $\eta_p^2=0.04$, and the effect of time × grade × gender on relational aggression, F (1, 112)=6.27, $p<0.05$, $\eta_p^2=0.05$ were significant. These results signify that mean levels of relational aggression and physical aggression decreased over time; however, these declines depended on gender and grade. Specifically, the mean level of relational aggression decreased for boys, regardless of grade; in contrast, the mean level of relational aggression decreased for fourth-grade girls and increased for fifth-grade girls. Moreover, the mean level of physical aggression was consistent for boys, regardless of grade; by contrast, the mean level of physical aggression decreased for girls, regardless of grade.

Friendship Qualities A within-subject ANOVA was conducted to examine the stability of mean levels of positive and negative friendship qualities. Grade (0 = fourth, 1 = fifth) and gender (0 = male, 1 = female) served as independent variables

and positive friendship quality and negative friendship quality served as dependent variables. Multivariate tests regarding between-subject variables showed a significant effect of gender, grade, and gender × grade, F (2, 136)=7.38, $p<0.01$, $\eta_p^2=0.10$; F (2, 136)=3.00, $p=0.05$, $\eta_p^2=0.04$; F (2, 136)=4.51, $p<0.05$, $\eta_p^2=0.06$, respectively. Univariate tests showed gender differences in positive friendship quality and negative friendship quality, F (1, 137)=5.48, $p<0.05$, $\eta_p^2=0.04$; F (1, 137)=10.85, $p<0.01$, $\eta_p^2=0.07$, grade differences in negative friendship quality, F (1, 137)=5.43, $p<0.05$, $\eta_p^2=0.04$, and grade × gender on positive friendship quality and negative friendship quality, F (1, 137)=3.44, $p<0.10$, $\eta_p^2=0.02$; F (1, 137)=4.69, $p<0.05$, $\eta_p^2=0.03$. These findings indicate that girls displayed greater levels of positive and negative friendship qualities; however, these effects depended on grade. That is, girls exhibited higher levels of positive friendship qualities than boys in the fourth grade; however, these gender differences were not found in the fifth grade. By contrast, there were no gender differences in negative friendship qualities for fourth graders; however, girls showed higher levels of negative friendship qualities than boys in the fifth grade.

Multivariate tests regarding within-subject variables showed a significant effect of time, time × grade, and time × gender × grade, F (2, 136)=4.13, $p<0.06$, $\eta_p^2=0.05$; F (2, 136)=4.25, $p<0.06$, $\eta_p^2=0.14$; F (2, 136)=2.48, $p<0.10$, $\eta_p^2=0.04$, respectively. Univariate tests showed that the effects of time on positive friendship quality, F (1, 137)=6.11, $p<0.05$, $\eta_p^2=0.04$, the effects of time × grade on positive friendship quality, F (1, 137)=7.47, $p<0.01$, $\eta_p^2=0.05$, and the effect of time × grade × grade on positive friendship quality, F (1, 137)=4.85, $p<0.05$, $\eta_p^2=0.03$, were significant. These results indicate that mean levels of positive friendship quality increased over time; however, this depended on gender and grade. Specifically, the mean levels of positive friendship quality increased for fifth grade children only, and the increases in positive friendship quality were greater for boys than girls. No other significant effects were found. The means and standard deviations of relational and physical aggression and positive and negative friendship qualities are presented in Table 3.

Prediction of Aggression and Peer Victimization

An unconditional model with a random effect of classrooms showed that classroom-level estimates were not significant for all criterion variables (i.e., relational and physical aggression and relational and physical victimization at time 2). Given that controlling for classroom effects on criterion variables leads to more accurate estimation of predictors, however, mixed linear models were used to test our hypotheses of Study 2. Zero-order correlations are presented in Table 4.

Relational Aggression and Relational Victimization

To examine how friendships are related to the stability of relational aggression and the association between relational aggression and relative change in relational victimization, two separate mixed models[2] were conducted with time 2 relational aggression (Model 1) and time 2 relational victimization (Model 2) serving criterion variables. These models included grade, gender, physical aggression, relational aggression, positive friendships, and negative friendships, which served as predictors. All predictors were assessed at time 1. Time 1 physical aggression was included to control for the initial level. Two-way interaction terms (i.e., relational aggression × positive friendships, relational aggression × negative friendships) were added to examine whether positive friendships and negative friendships would moderate the stability of relational aggression and the association between relational aggression and relative change in relational victimization. In Model 2, relational victimization was included to control for the initial level and examine relative change in relational victimization over time. All variables were standardized prior to analysis.

Results of Model 1 demonstrated that relational aggression predicted time 2 relational aggression, $B=0.88$, $p<0.001$, indicating that relational aggression was stable for a 6-month period. Moreover, negative friendships × relational aggression was significant, $B=0.15$, $p<0.05$. A follow-up separate regression analysis revealed that relational aggression was more stable for children who formed lower quality friendships (i.e., high levels of exclusivity and friend victimization—0.5 SD above the mean) than children who formed higher quality friendships (i.e., low levels of these friendship qualities—0.5 SD below the mean), $B = 1.31$, $p<0.001$; $B=0.82$, $p<0.001$, respectively (see Fig. 1). Thus, negative friendships reinforced the continuity of relational aggression.

Results of Model 2 showed that relational victimization, relational aggression, and positive friendships were significant, $B=0.38$, $p<0.01$; $B=0.41$, $p<0.01$ $B=-0.19$, $p<0.05$. That is, relational aggression was predictive of relative increases in relational victimization and positive friendships was related to relative decreases in relational victimization, after the contribution of time 1 relational victimization was taken into account. Further, positive friendships × relational

[2] Additional interaction terms (i.e., relational aggression × gender or grade, positive friendship × relational aggression × gender or grade, and negative friendship × relational aggression × gender or grade) were entered in order to examine the role of gender or age in the association between relational aggression and criterion variables and the role of gender and age in the moderating effect of friendship quality on these associations. We found that no interaction terms were significant and improved the overall model fit. Thus, the results were not included in final models.

Table 3 Mean and Standard Deviations of Aggressive Behavior and Friendship Qualities

Gender	Male (M, SD)				Female (M, SD)			
Grade	Fourth		Fifth		Fourth		Fifth	
Time	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Relational aggression	8.12(0.60)	7.69(0.59)	8.91(0.84)	7.05(0.83)	8.23(0.65)	7.37(0.64)	8.17(0.91)	8.67(0.89)
Physical aggression	7.00(0.60)	6.79(0.61)	6.95(0.84)	7.19(0.86)	6.11(0.65)	4.94(0.67)	5.39(0.91)	4.72(0.93)
Positive friendships	37.87(1.17)	36.49(1.20)	38.76(1.90)	44.14(1.95)	42.91(1.30)	43.93(1.33)	41.30(1.95)	43.05(2.00)
Negative friendships	19.67(0.85)	18.86(0.83)	20.48(1.38)	18.38(1.34)	20.24(0.94)	20.53(0.91)	25.10(1.41)	24.65(1.37)

M mean, *SD* standard deviation

aggression was significant, $B=-0.19$, $p<0.05$. A follow-up separate regression analysis revealed that the association between relational aggression and relative increases in relational victimization was significant only for children who formed lower quality friendships (i.e., low levels of intimacy, companionship, and friendship satisfaction—0.5 SD below the mean), $B=0.18$, *n.s.*; $B=0.25$, $p<0.05$, respectively (see Fig. 2). Thus, positive friendships helped to reduce the relational victimization level, which also served as a buffer in the association between relational aggression and relative increases in relational victimization. The results are summarized in Table 5.

Physical Aggression and Physical Victimization

To examine how friendships are related to the stability of physical aggression and the association between physical aggression and relative changes in physical victimization, two separate mixed models[3] were conducted with time 2 physical aggression (Model 1) and time 2 physical victimization (Model 2) serving criterion variables. Similar to previous analyses, these models tested the main effects of grade, gender, physical aggression, relational aggression, and positive friendships, and negative friendships, which served as predictors. All predictors were assessed at time 1. Time 1 relational aggression was included to control for its contribution on the criterion variable. Two-way interaction terms (i.e., positive friendships × physical aggression, negative friendships × physical aggression) were included to examine whether friendships would moderate the stability of physical aggression and the association between physical aggression and relative changes in physical victimization. In Model 2, time 1 physical victimization was included to control for its initial level.

Results of Model 1 demonstrated that gender and physical aggression was significant, $B=0.32$, $p<0.05$; $B=0.66$, $p<0.001$. That is, relative to girls, boys displayed a greater level of physical aggression; however, physical aggression was stable over time, regardless of gender. In addition, results of Model 2 showed that gender was a significant predictor, $B=0.65$, $p<0.001$. That is, boys were more likely to experience physical victimization than girls. No other significant effects were found.

Discussion

The main goal of the second study was to examine the stability of relational and physical aggression, its associations with peer victimization, and the role of friendship quality in these processes in Japanese children. One important finding of the present study is that physical aggression was more commonly used by boys and physical victimization was more frequently experienced by boys. In addition, physical aggression increased for boys and decreased for girls; by contrast, relational aggression decreased for boys and increased for girls in the fifth grade. Further, girls were more likely to form exclusive and abusive friendships, in which they experienced relational and physical victimization by close friends. These findings are largely consistent with the view that girls place more emphasis on close relationships and exhibit a relatively higher level of exclusivity toward friends, thereby using more relational aggression within the friendships (Crick and Zahn-Waxler 2003; Grotpeter and Crick 1996). These results suggest that gender differences in forms of aggres-

[3] Additional interaction terms (i.e., physical aggression × gender or grade, positive friendship × physical aggression × gender or grade, and negative friendship × physical aggression × gender or grade) were entered in order to examine the role of gender and age in the association between physical aggression and criterion variables and the role of gender and age in the moderating effect of friendship quality on these associations. We found that most interaction terms were not significant. One exception was the significant positive friendship × physical aggression × grade interaction for physical aggression at time 2. However, the overall model fit did not improve by adding these interaction terms. This indicated that the quality of the additional model was questionable. Thus, the results were not included in final models.

Table 4 Zero-Order Correlations among Variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. Physical aggression T1	–											
2. Relational aggression T1	0.78***	–										
3. Physical victimization T1	0.41***	0.33***	–									
4. Relational victimization T1	0.55***	0.57***	0.70***	–								
5. Positive friendship T1	−0.11	−0.07	−0.18*	−0.21*	–							
6. Negative friendship T1	0.03	0.10	0.01	−0.03	0.11	–						
7. Physical aggression T2	0.82***	0.64***	0.18	0.33***	−0.07	0.03	–					
8. Relational aggression T2	0.52***	0.71***	0.05	0.34***	−0.10	0.16	0.67***	–				
9. Physical victimization T2	0.24*	0.28***	0.35***	0.28***	−0.07	0.06	0.47***	0.30***	–			
10. Relational victimization T2	0.30***	0.45***	0.28***	0.51***	−0.21*	0.07	0.45***	0.53***	0.55***	–		
11. Positive friendship T2	−0.01	0.02	−0.13	−0.15	0.60***	0.09	−0.09	−0.02	−0.20*	0.29***	–	
12. Negative friendship T2	−0.01	0.07	0.00	−0.02	0.13[a]	0.53***	−0.09	−0.01	−0.10	0.01	0.10	–
Mean	6.12	7.90	4.17	4.47	40.26	20.80	5.97	7.58	4.20	4.26	41.11	20.46
Standard deviation	3.65	3.72	2.05	2.04	8.76	6.40	4.01	3.78	3.33	1.96	9.12	6.75

*$p<0.05$. **$p<0.01$. ***$p<0.001$

[a] $p<0.10$

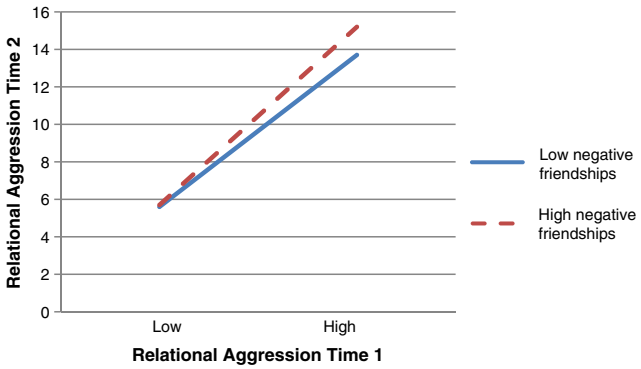

Fig. 1 Stability of relational aggression as a function of negative friendships: relationally aggressive children (0.5 standard deviation above the mean) displayed high levels of relational aggression at time 2 than non-relationally aggressive children (0.5 standard deviation below the mean), especially when these children formed high levels of negative friendships (0.5 standard deviation above the mean)

sion and the quality of positive and negative friendships may be similar between Japanese and U.S. children.

Results further demonstrated that relational aggression was stable over an academic year. Moreover, the stability of relational aggression was moderated by negative friendships, such that relational aggression was more likely to maintain for children who formed friendships that were relatively higher levels of exclusivity and friend victimization. These findings are consistent with the literature that has indicated that relationally aggressive children may form friendships with high levels of exclusivity and friend relational aggression and they may be more likely to be relationally aggressive toward friends in such enmeshed

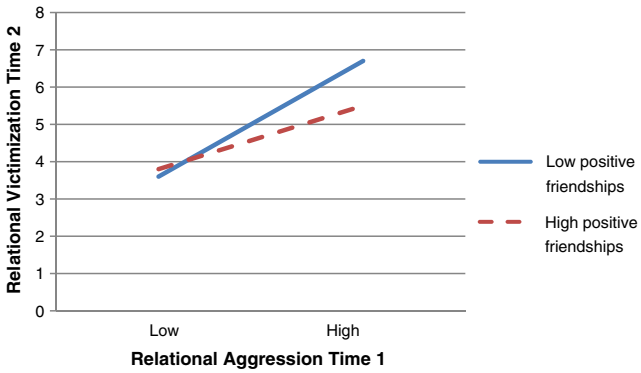

Fig. 2 The association between relational aggression and relative increases in relational victimization as a function of positive friendships: relationally aggressive children (0.5 standard deviation above the mean) experienced higher levels of relational victimization at time 2 than non-relationally aggressive children (0.5 standard deviation below the mean), especially when these children formed low levels of positive friendships (0.5 standard deviation below the mean)

Table 5 Estimates of Fixed Effects and Fit Indices from Mixed Linear Models Predicting Relational Aggression and Relational Victimization

	Criterion variables T2	
	Relational aggression (Model 1)	Relational victimization (Model 2)
Fixed effects (T1)	Coefficient (SE)	Coefficient (SE)
Intercept	0.12(0.17)	−0.13(0.17)
Grade	−0.05(0.15)	0.23(0.16)
Gender	−0.00(0.17)	0.03(0.18)
T1 adjustment		0.38(0.11)**
Physical aggression	−0.05(0.10)	−0.19(0.10) [a]
Relational aggression	0.88(0.13)***	0.41(0.14)**
Positive friendship	−0.12(0.08)	−0.19(0.08)*
Negative friendship	0.08(0.08)	0.11(0.08)
Positive friendship × relational aggression	−0.13(0.08)	−0.20(0.08)*
Negative friendship × relational aggression	0.15(0.07)*	−0.03(0.07)
Random effects		
Level 1	0.511(0.08)***	0.519(0.08)***
Level 2	0.002(0.03)	0.002(0.03)
Goodness of fit		
Deviance	223.48	224.16
AIC	227.48	228.16
BIC	232.39	233.02

Grade (0 = fourth, 1 = fifth = a reference group), Gender (0 = male, 1 = female = a reference group). T1 Adjustment = time 1 relational victimization

*$p<0.05$. **$p<0.01$. ***$p<0.001$

[a] $p<0.10$

contexts (Grotpeter and Crick 1996; Werner and Crick 2004). This developmental process could be bi-directional, however. That is, exclusive and abusive friendships may lead to increased relational aggression, which may create a socializing context in which children become more relationally aggressive toward friends and peers. A larger longitudinal study is warranted to test this premise.

Consistent with the view that social support such as involvement of high-quality social relationships lessens the impact of negative life events on social-psychological adjustment problems (House et al. 1988), the present study demonstrated that positive friendships were predictive of relative *decreases* in relational victimization. Further, positive friendships played a moderating role in the association between relational aggression and relative *increases* in relational victimization, such that this association was attenuated by positive friendships. The literature has suggested that children actively learn how to form and retain successful interactions with peers, thereby gaining social skills such as cooperation and empathy in the context of positive friendships (Hartup and Stevens 1997). Hence, positive friendships may serve as a crucial socializing context, in which children can obtain instrumental and emotional support from close friends and, thus, can be protected from malicious peers or bullies. All of these factors could reduce the levels of peer victimization.

We find it interesting that physical aggression was unrelated to future physical victimization above and beyond the contribution of relational aggression. One possibility is that relational aggression, in compared to physical aggression, may be more salient, and, thus, may more strongly lead to peer victimization, regardless of its type or form, in the context of Japanese culture. Consistent with this view, the present study showed that relative to physical aggression at time 1, relational aggression at time 1 was more strongly correlated with physical victimization at time 2 ($r=0.28$, $p<0.001$, $r=0.24$, $p<0.05$, respectively). Given that Japanese children typically form relationships that are harmonious and interdependent (Rothbaum et al. 2000), relationally aggressive children, who are predictably malevolent, mean, and nasty to peers, may be an easy target of negative treatment by peers. These children may be more likely to experience relational victimization and perhaps other forms of peer victimization in the same friendships or peer groups over time. Due to these social factors, relational aggression may supersede the effect of physical aggression on future physical victimization, at least in Japan.

General Discussion

The findings of the present studies support a developmental psychopathology perspective, which posits that social factors of a relational context (e.g., being relationally aggressive toward peers, forming negative or positive friendships) interact to influence the degree to which children display social-psychological adjustment problems or forms of psychopathology (Crick and Zahn-Waxler 2003). Specifically, relational aggression may be a peer-related problem, and friendship, depending on its quality, may serve as an additive vulnerability or a protective factor for the stability of relational aggression and its relation to experiences of relational victimization. Hence, it is conceivable that the development and maintenance of relational aggression and its effect on relational victimization may in part depend on the quality of friendships (e.g., positive versus negative).

The present studies provided guidance for future studies regarding aggression, peer victimization, and adjustment. For one, it would be crucial to examine developmental *mechanisms* by which relational aggression leads to negative consequences. Whereas the present studies revealed that relational aggression was associated with internalizing adjustment problems and relative increases in relational victimization, social processes behind these phenomena are unclear. Moreover, a cross-sectional study and a short-term longitudinal study like this make it difficult to draw solid conclusions regarding long-term consequences of relational aggression. Further, it is important to directly examine cross-cultural differences (i.e., Western cultures versus non-Western cultures) in developmental trajectories involving forms of aggression, peer victimization, and adjustment in future research. Given the findings of the present study (i.e., the differential effects of relational aggression and physical aggression on social-psychological adjustment and peer victimization), examining cross-cultural differences and similarities in these developmental processes is crucial. All in all, a larger, cross-cultural longitudinal study is warranted.

Despite these strengths, several limitations were addressed. Whereas our sample was viewed as representative of contemporary Japanese society, it may not be necessarily generalized to all fourth and fifth grade children or children in other developmental stages. Moreover, this study did not include children who resided in cultures other than Japanese culture. Thus, the findings of the present study cannot be generalized to children in other cultures. In addition, this study relied on self and teacher reports of aggressive acts. Although these measures were shown to be reliable and valid by themselves, the lack of obtaining peer reports would be another limitation. In fact, peer nomination procedures have been extremely difficult, if not impossible to use in Japanese schools, because most Japanese teachers, school principals, and educators are opposed to this method (especially for Japanese children who are very sensitive to negative evaluations of others). As such, other methods such as interviews and observations may be used to uncover the details about the social-cultural processes involving aggression and adjustment (Crick et al. 2007). Given that past studies examining relational aggression with Western samples typically draw conclusions from peer nominations, the findings of the present studies which relied on self- and teacher reports may be unique due to its methodology. Moreover, it is noted that cultural constraints of the methodology (i.e., the number of questionnaire items that could be used for Japanese teachers was limited) allowed us to only assess delinquency as a representative domain of externalizing adjustment problems. Thus, externalizing adjustment problems assessed by delinquency items in this study did not reflect the full CBCL externalizing spectrum. For the same reason, self- and teacher reports of aggression could not be obtained together in both studies. These are other methodological limitations, and the findings of the present studies need to be interpreted with caution. Further, information regarding social context such as classroom and school climate, school district, and neighborhood was not gathered in this study. Despite these limitations, these present studies, with two independent samples of children in a Japanese society, bridges an important gap in the literature by demonstrating the effects of relational aggression and friendship quality on social-psychological adjustment or peer victimization in a non-Western sample.

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