Instrumental or Emotional Aggression: Testing Models of Bullying, Victimization, and Psychological Maladjustment among Taiwanese Seventh-Graders

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This study examined the relationship of instrumental and emotional aggression to bullying, victimization, and psychosocial maladjustment. It was hypothesized that both types of aggression would be associated with bullying behavior and that emotional aggression would be exclusively associated with risk of victimization and psychological maladjustment (that is, depression, anxiety, and loneliness). The sample consisted of 219 Taiwanese seventh-graders with valid data on all of the research variables; 51.1% (n = 112) were male, and 48.9% (n = 107) were female. A series of structural equation models was analyzed to evaluate fit indices for competing models. The results indicated that both instrumental aggression and emotional aggression were associated with bullying, but only the latter was associated with victimization. Once psychological maladjustment was entered into the model, the association between emotional aggression and bullying became nonsignificant. Model indices also suggested that psychological maladjustment was a concurrent characteristic rather than a consequence of peer victimization. Implications for future investigation are discussed.

KEY WORDS: adolescents; aggression; bullying; psychological maladjustment; victimization

Research on school bullying has increased rapidly over the past few decades. It is now well established that such aggression is prevalent internationally, with considerable numbers of youths affected. In a recent study of 2,086 German students, Scheithauer, Hayer, Petermann, and Jugert (2006) found that 12.1% of respondents bullied others, and 11.1% reported being victimized. In a survey on 1,344 fourth-grade primary school children in South Korea, Yang, Kim, Kim, Shin, and Yoon (2006) revealed a similar picture, with 12.0% of students bullying others, 5.3% reporting being victimized, and 7.2% reporting both bullying and victimization. Similar levels of bullying have been identified in the United Kingdom, Australia, Ireland, Norway, the United States, and Japan (Nansel et al., 2001; Olweus, 1992; A. M. O'Moore, Kirkham, & Smith, 1997; Rigby & Slee, 1991; Takahiro & Iwao, 2000; Whitney & Smith, 1993). Experiences of being bullied have been found to be associated with various psychological problems such as depression, loneliness, anxiety, and low self-esteem (Hawker & Boulton, 2000; Storch & Ledley, 2005). Victims may also exhibit psychosomatic symptoms, suicidal ideation, and reduced school attachment (Ivarsson, Broberg, Arvidsson, & Gillberg, 2005; Natvig, Albrekten, & Qvarnstrom, 2001; Wei & Williams, 2004). Such adverse effects have raised serious human rights concerns, and efforts are underway to identify the risk factors of bullying for prevention and intervention (Greene, 2006).

Previous studies have identified distinctive aggressive patterns in bullying (Carney & Merrell, 2001; Haynie et al., 2001; Olweus, 1997; M. O'Moore & Kirkham, 2001; Schwartz, 2000). The majority of bullies were characterized by an overt aggressiveness, a need to dominate, little empathy for others, and positive attitudes toward violence (Carney & Merrell, 2001; Olweus, 1997). Despite such antisocial tendencies, such youngsters do not necessarily have salient psychological maladjustments. Although some researchers have found bullies to have lower self-esteem (Austin & Joseph, 1996), others have found that bullying has little association with self-esteem, anxiety, or loneliness (Kaukiainen et al., 2002; M. O'Moore & Kirkham, 2001; Nansel et al., 2001; Rigby & Slee, 1993). Instead, children who engage in bullying have been seen to be at higher
risk of aggression, delinquency, and externalizing problems (Ivarsson et al., 2005; Kumpulainen & Rasanen, 2000; Veenstra et al., 2005).

A relatively small group of youths—namely, bully/victims or aggressive victims—manifest quite different patterns of behavior and personal characteristics. They suffer frequent peer victimization while behaving aggressively or engaging in bullying acts themselves. Compared with pure bullies, bully/victims engage in more physical bullying and less verbal bullying, and they are more likely to be physically victimized than are pure victims (Unnever, 2005). Bully/victim boys have reported a high level of street violence involvement and a high frequency of victimization on the street (Andershed, Kerr, & Stattin, 2001). Generally speaking, individuals who score high on both bullying and victimization show significant psychological maladjustment and often have the poorest outcomes when compared with nonvictimized bullies, nonaggressive victims, and noninvolved peers (Haynie et al., 2001; M. O’Moore & Kirkham, 2001; Schwartz, 2000). They are likely to experience a variety of issues such as academic failure, lower global self-esteem, peer rejection, emotional distress, and depression (Haynie et al., 2001; M. O’Moore & Kirkham, 2001; Schwartz, 2000).

ETIOLOGIES OF BULLYING

One prominent theory relevant to school bullying is the social information processing model (Crick & Dodge, 1994). It postulates that social behaviors of children, both prosocial and aggressive, are products of children's social cognitions. The model identifies six basic steps underpinning children's social cognition processes: encoding of social cues, interpretation of social cues, goal selection, response formulation, evaluation, and action (Crick & Dodge, 1994; Dodge, 1991). It is hypothesized that aggressive children have deficits at various points along those processing steps. Crick and Dodge (1996) have identified two distinct typologies of aggressive children. The first typology, reactive-aggressive, tends to attribute hostile intent to peers, who reactive-aggressive children perceive as mean and threatening to the self. When presented with ambiguous cues, reactive-aggressive youths are more likely to interpret them as provocative (Crick & Dodge, 1996; Dodge & Coie, 1987). These children manifest angry and defensive responses to frustration or provocation. With the second typology, proactive-aggressive, youths tend to initiate aggressive behavior as a deliberate strategy to obtain their goals. They evaluate aggressive behavior and its expected outcomes more positively, emphasize instrumental goals over interpersonal harmony, and regard aggression as an effective way to get rewards or solve conflicts in social situations (Crick & Dodge, 1996).

The original propositions of the social information processing model imply that aggression results from cognitive deficits. However, Sutton and Keogh (2000) showed that ringleader bullies scored significantly higher than other groups of children on assessment of another's cognitive and emotional states. What these children lack is not a correct theory of the other's mind but empathy for the other's feelings. Bullies were also found to have higher Machiavellianist beliefs (Sutton & Keogh, 2000). Hawley (2006) highlighted the features of Machiavellianism, such as manipulation and lack of empathy. From an evolutionary perspective, it has been suggested that aggression coupled with positive skills and tendencies may increase one's chances of obtaining social and material rewards (Hawley, 2007). In line with this adaptive view of aggression, some researchers regard bullying as a sophisticated strategy for interpersonal manipulation and have suggested that bullies may well understand the psychological influence of their acts on victims and use this knowledge to pursue their self-interests and their positive outcome expectancy—thus, the self-efficacy of aggression should not be interpreted simply as a cognitive error (Sutton, 2001; Sutton, Smith, & Swettenham, 1999a, 1999b, 1999c). Bullying children can thus be identified as proactively aggressive, acting as indifferent, manipulating individuals seeking material and social rewards at the expense of their victims.

INSTRUMENTAL VERSUS EMOTIONAL AGGRESSION

The typologies of proactive and reactive aggressive bullies actually reflect a long-standing distinction between instrumental and emotional aggression in psychology. Instrumental (premeditated or proactive) aggression refers to a calculated behavior aimed at obtaining rewards and achieving personal goals. Emotional (hostile or reactive) aggression is impulsive and retaliatory and can be regarded as a reaction with anger (Aronson, 1992; Hartup, 1974). In fact, Ramirez and Andreu (2006) found anger and impulsiveness to be positively correlated with hostile aggression but not with instrumental aggression. Much effort has been made to investigate the
evolutionary significance of emotional aggression as a primitive survival behavior often seen in animals. Specific neurobiological pathways have been proposed to understand such an affective response (see, for example, Davidson, Jackson, & Kalin, 2000; LeDoux, 1996). At the same time, two types of aggression have been found to be associated with different kinds of psychological maladjustment. One recent study with a sample of 211 young adults found reactive aggression to be strongly related to neuroticism and proactive aggression to be strongly predictive of externalizing behaviors (Miller & Lynam, 2006). Another study found proactive aggression to be uniquely characterized by age 16 by a psychopathic personality, blunted affect, delinquency, and serious violent offending, whereas reactive aggression was characterized by impulsivity, hostility, social anxiety, lack of close friends, unusual perceptual experiences, and ideas of reference (Raine et al., 2006). Some researchers have recently criticized the distinction between the two types of aggression because, in reality, aggressive acts often involve multiple aggressiveness simultaneously (for example, Bushman & Anderson, 2001; Miller & Lynam, 2006), but this dichotomy is still widely used in bullying, peer victimization, and aggression research, and it served as the major research construct for the present study.

RESEARCH QUESTIONS
The foregoing discussion highlighted the heterogeneity of bullying behaviors. Some children and adolescents who are Machiavellians may use the minor aggression of bullying for the acquisition of material and social rewards, whereas other bullies' aggression is more reactive in nature and tends to result from emotional regulation issues and hostile attributions of others' social cues. Recognition of these typologies of bullying is crucial because they have significant diversity and may respond to different intervention strategies. Therefore, the primary focus of this study was the relationships between instrumental and emotional aggression and bullying behavior. This study used the social informational processing model (Dodge & Coie, 1987), which posits that both instrumental and emotional aggression may be associated with bullying. Competing models of aggression and bullying were examined to determine the relative validity of the theory.

The secondary focus of the study concerns the relationships between bullying, victimization, and psychological maladjustment. Previous research indicates an association between peer victimization and psychological problems such as depression, loneliness, and anxiety (Hawker & Boulton, 2000), which suggests that being bullied leads to psychological maladjustment. However, empirical findings regarding the psychological adjustment of bullies have been mixed. Thus, we did not assume a direct positive relationship between bullying and psychological maladjustment. Instead, we hypothesized that emotional aggression (not instrumental aggression) is associated with victimization, which in turn is related to psychological maladjustment.

METHOD
Sample
This study used data from the Middle School Life Experiences Project, which is a large-scale survey conducted in Taipei to collect data on the school adjustment of Taiwanese youths. It used a two-stage clustered sampling procedure. Middle schools in Taipei were first randomly selected and invited to participate. One seventh-grade classroom in each participant school was then selected, which resulted in a sample of seven classes. Almost all of the students in the selected classes filled out questionnaires (participation rate over 99%), but only students with complete data on all research variables were included in the structural equation modeling (SEM) analysis. Among the 238 respondents, 19 had missing data, and the final sample consists of 219 students; 51.1% (n = 112) were male, and 48.9% (n = 107) were female. The average age of the sample was 12.80 years, with a standard deviation of 0.63.

Measures
The survey instrument included self-report, peer-rating, and teacher-report measures that assessed the major aspects of school life. The battery for students was divided into two questionnaires, each of which took 30 minutes to complete. These were group administered during two independent study classes. Teacher-report questionnaires were given to the homeroom teachers and later collected. For certain scales in the battery that were translated from foreign languages, an expert review and a pilot evaluation using middle school respondents was conducted to ensure their validity. Only those measures relevant to this study are listed here.

Children’s Loneliness Scale. This scale (α = .92) is a self-report questionnaire assessing children’s
feeling of loneliness and social dissatisfaction (Asher, Hyman, & Renshaw, 1984). It consists of 24 items, including eight masking items to assist respondents in being more open and honest with their responses. Children rate themselves on a five-point scale.

**Children's Machiavellianism Scale.** This scale (α = .69) is a self-report measure assessing children's interpersonal strategies and their beliefs about the manipulability of other people (Christie & Geis, 1970). It consists of 20 items, with a four-point response scale ranging from “agree very much” to “disagree very much.”

**Brief Symptom Rating Scale.** This scale is a Chinese questionnaire assessing student's mental health problems (Lee, Lee, Yen, Lin, & Lue, 1990). The entire scale consists of 50 items on which respondents rate their status over the past week using a five-point scale ranging from “never” to “very severe.” An example item from this scale is “have thoughts of suicide.” The Cronbach alphas were .78 for Proactive Aggression and .69 for Reactive Aggression.

**Adolescent Social Behavior Scale.** This scale is a Chinese teacher-report measure that assesses a wide range of adolescents' behaviors in school (Hung, 2000). The scale consists of 119 items grouped into 14 subscales. Teachers rate students using a five-point Likert-type scale from “never” = 1 to “always” = 5 for each item. The subscales used in this study were Impulsivity (α = .91) and Lack of Concern for Others (α = .93).

**Self-reported Frequency of Being Bullied by Classmates.** Students were provided with a class roster and asked to rate each of their classmates for their frequency of bullying behaviors toward the rater using a five-point scale. Bullying was defined as specific physical and verbal behaviors. Examples of physical bullying included hitting, kicking, pushing, and tripping. Students' ratings of their classmates on physical and verbal bullying items were combined and divided by the number of classmates to create an overall victimization score.

**Peer Nomination of Victims.** Students were provided with a definition of bullying and a roster of classmates. They were asked to nominate up to six classmates who were most frequently bullied. The definition emphasized the specific behaviors considered to be bullying. Each respondent's peer-rated victim status was calculated by adding the nominations he or she received in the class and dividing by the number of nominators. Similar methods have been used in previous studies (Boulton, Trueman, Chau, Whitehand, & Amatya, 1999).

**Peer-rated Bullying Behaviors.** Students were provided with a roster of classmates and behavioral descriptors that illustrated bullying behaviors. Each student rated his or her classmates on their degree of manifesting these behaviors toward the rater using a five-point Likert-type scale. Students' bullying scores on the dimensions were based on the average ratings each student received from his or her classmates. This measure was adapted from the Peer Estimated Conflict Behavior (PECOBE) questionnaire (Bjorkqvist & Osterman, 1998). The original five-point PECOBE assesses classmates' typical interaction styles with regard to three types of peer aggression along with other attributes. In the present study, every respondent was asked to reflect on the target person's behaviors toward the rater specifically.

**Data Analyses**

SEM was used as the primary analysis strategy for this study. SEM is an extension of the general linear model, which is frequently used for theory testing and confirmatory analysis. SEM was adapted as the major analysis strategy in the present study because of the multiple alternative models with multiple indicators that were constructed and compared for theory testing. Analyses were conducted in several stages. Initially, we performed univariate analysis for each of the observed variables to assess possible violations of SEM assumptions. Data transformations were conducted for distributions violating the assumptions of normality. Second, we performed bivariate analysis to obtain correlation coefficients for all major observed variables in preparation for the SEM analyses. Listwise deletion was used to...
exclude cases without complete data on all variables. Inspection of the univariate statistics for the observed variables showed that self-reported within-class physical and verbal victimization was considerably skewed in a positive direction. To reduce this violation of normality, we conducted a logarithmic transformation (base 10) for these variables. The skewness and kurtosis of self-reported physical and verbal victimization were considerably reduced and were close to the +3 to −3 range appropriate for SEM (Kline, 1998).

Specific observed variables were selected to construct measurement models for the five latent variables (instrumental aggression, emotional aggression, bullying, victimization, and psychological maladjustment). In the first stage of the multivariate analysis, measurement models with two or more observed variables were tested for model fit using LISREL 8.50 (Jöreskog & Sorbom, 2001). Observed variables with low reliability and validity (as evidenced by their association with the latent variable) were dropped. After examining the measurement models, we constructed and tested structural models with the relationships between the latent variables specified. We built and tested alternative models with the same set of variables against the proposed models to determine their relative validity. The maximum likelihood method was used to estimate parameters (Schumacker & Lomax, 1996). Modification indices were also examined, and paths suggested by modification indices that increased model fit were added where this was theoretically or empirically supported (Kline, 1998).

RESULTS
Measurement Models of Instrumental and Emotional Aggression
In the initial stage of analysis, a measurement model with instrumental and emotional aggression as latent variables with observed variables was specified and tested. The examination of this measurement model fulfilled two major objectives. First, it was conceptually meaningful to distinguish between instrumental and emotional aggression as latent variables by evaluating the supporting empirical evidence. Second, it was important to determine whether the selected observed variables were adequate indicators for the two latent variables. Model fit, reliability, and validity of the observed variables were assessed, and observed variables with low reliability or validity were removed from the model.

On the basis of previous research, three applicable observed variables were selected for each of the two latent variables (Machiavellianism; proactive aggressiveness and lack of concern for instrumental aggression; impulsivity, reactive aggressiveness, and hostility for emotional aggression). In this initial model, the error variances of lack of concern and impulsivity were allowed to correlate because both measures were collected from the same informant (respondent's teacher) using subscales from the same instrument (the Adolescent Social Behavior Scale). The error variances of proactive aggressiveness and reactive aggressiveness were also allowed to correlate for similar reasons.

The results of model testing showed that the data were a good fit \( \chi^2(6, N = 219) = 12.23, p = .06, \) root mean square error of approximation (RMSEA) = .07, normed fit index (NFI) = .95, comparative fit index (CFI) = .97, adjusted goodness of fit index (AGFI) = .94]. An alternative model with the six observed variables, measuring only the latent variable of aggression, was specified and tested for comparison. The model test results showed a lower fit \( \chi^2(7, N = 219) = 31.28, p = .00, \) RMSEA = .12, NFI = .88, CFI = .90, AGFI = .87], which supports the strength of a two-factor model over a one-factor model in understanding aggression.

Inspection of the observed variables revealed that the lack of concern for others and impulsivity were weak indicators and had only nonsignificant associations with the latent variables (\( r = .11 \) and .07, respectively). These two observed variables were consequently removed, and a respecified model with four indicators was analyzed. Model fit indices were not computed during this stage of analysis because of insufficient degrees of freedom. The four observed variables were found to be adequate indicators of the latent constructs, with \( r \) values ranging from .49 to .77 (see Figure 1).

Instrumental and Emotional Aggression, Bullying, and Victimization
One primary research question of the present study focused on the relationships among instrumental and emotional aggression, bullying, and victimization. Instrumental and emotional aggression was hypothesized to be positively associated with bullying, but only emotional aggression was hypothesized to have a positive association with peer victimization. An extended model with instrumental and emotional aggression and two additional latent
variables (bullying tendency and peer victimization) was specified and tested for model fit. The results showed an adequate fit ($\chi^2(22, N = 219) = 43.13, p = .01, \text{RMSEA} = .07, \text{NFI} = .92, \text{CFI} = .96, \text{AGFI} = .91$). However, further inspection of the components of the measurement model revealed that both peer-rated physical ($r = .93$) and verbal bullying ($r = .77$) had good reliability for the latent variable bullying. The measurement model for peer victimization indicated that peer-rated victim status was poorly associated with the latent variable ($r = .09$). The other two observed variables, self-reported physical victimization ($r = .76$) and verbal victimization ($r = .94$), were more reliable measures for peer victimization. Therefore, peer-rated victim status was removed from the next iteration of the model. The modified model was tested, and it showed an adequate fit ($\chi^2(15, N = 219) = 36.72, p = .00, \text{RMSEA} = .08, \text{NFI} = .94, \text{CFI} = .96, \text{AGFI} = .90$) (see Figure 2).

Further analysis was conducted to examine the fit of other alternative models. Two alternative models were constructed using the same set of variables. In the first alternative model, we specified a direct path from instrumental aggression to peer victimization to assess the possibility that, in addition to emotional
aggression, instrumental aggression could also be associated with peer victimization. The improvement in model fit for this alternative model was marginal compared with that of the previous model [$\chi^2(14, N = 219) = 33.30, p = .00, \text{RMSEA} = 0.08, \text{NFI} = 0.94, \text{CFI} = 0.97, \text{AGFI} = 0.91$]. It is important to note that the correlation between instrumental aggression and peer victimization was negative ($r = -0.27$) and nonsignificant, which supports the original hypothesis that emotional aggression is associated with peer victimization.

A second alternative model was specified. In this model, we specified a path from bullying to victimization to examine the direct association between these latent variables above and beyond the effects of instrumental and emotional aggression on peer victimization. The results showed no improvement in model fit [$\chi^2(14, N = 219) = 36.42, p = .00, \text{RMSEA} = 0.09, \text{NFI} = 0.94, \text{CFI} = 0.96, \text{AGFI} = 0.90$]. In addition, the direct association between bullying and victimization was small in magnitude ($r = 0.05$) and nonsignificant, which suggests that bullying behavior does not necessarily increase one's risk of being bullied and that the specific type of aggression underlying one's bullying behavior may be more important.

**Peer Victimization and Psychological Maladjustment**

The final model investigated the relationship between psychological maladjustment and respondents' victimization. A positive association was hypothesized between peer victimization and psychological maladjustment. A latent variable of psychological maladjustment was constructed using three observed variables: depression, anxiety, and loneliness. Psychological maladjustment was added to the prior model, and a path from peer victimization to psychological maladjustment was specified, as depicted in Figure 3. The new model was analyzed for fit. The results for the measurement model of psychological maladjustment showed that the three variables—depression ($r = 0.98$), anxiety ($r = 0.85$), and loneliness ($r = 0.46$)—were positively correlated to the latent variable. This result suggests that depression and anxiety could be viewed as a highly reliable indicator of psychological maladjustment. The reliability of loneliness as an indicator of psychological maladjustment was somewhat low.

The fit indices of this model showed a less than satisfactory fit [$\chi^2(38, N = 219) = 210.57, p = .00, \text{RMSEA} = 0.14, \text{NFI} = 0.77, \text{CFI} = 0.79, \text{AGFI} = 0.74$] (see Figure 3). The association between peer victimization and psychological maladjustment was estimated at 0.40. Modification indices suggested that adding a path from emotional aggression to psychological maladjustment could significantly increase model fit. This relationship is theoretically relevant because psychosocial problems are among the major features of emotionally aggressive youths. The path was added accordingly. The results showed adequate fit [$\chi^2(37, N = 219) = 84.41, p$]
However, the association between peer victimization and psychological maladjustment was estimated as nonsignificant (.02), whereas the association between emotional aggression and psychological maladjustment was estimated at .92. This result strongly suggests that the respondents’ psychological maladjustment was largely explained by their emotional aggression tendencies rather than their peer victimization experiences. An alternative model was respecified and tested with a path from emotional aggression to psychological maladjustment without the path from peer victimization to psychological maladjustment. The respecified model (see Figure 4) also showed an adequate fit [$\chi^2(38, N = 219) = 84.25, p = .00, \text{RMSEA} = 0.08, \text{NFI} = 0.93, \text{CFI} = 0.96, \text{AGFI} = 0.89]$. In both models, the relationship between emotional aggression and bullying was nonsignificant. Comparing the two models on fit indices that took parsimony into account (that is, Akaike’s information criterion [AIC], consistent Akaike’s information criterion [CAIC], and extended Akaike’s information criterion [ECVI]), the latter model (see Figure 4) (AIC = 140.25, CAIC = 263.15, ECVI = .64) had slightly smaller values than the former one (see Figure 3) (AIC = 142.41, CAIC = 269.69, ECVI = .65) on all three indices. This would suggest the relative superiority of the model depicted in Figure 4 over the model depicted in Figure 3. Because the model depicted in Figure 4 had a better fit and a more parsimonious structure, it was selected as the final model.

**DISCUSSION**

**Instrumental and Emotional Aggression, Bullying, and Peer Victimization**

The primary focus of this study was to investigate the association between instrumental and emotional aggression and bullying behavior using the social information processing model and the research of Sutton et al. (1999c). The social information processing model suggests that bullies can be either proactively aggressive or reactively aggressive, with different characteristics proposed for the two types of aggression. Proactive aggression—in which the potential cost, benefit, and capability of execution are considered—is more instrumental. Reactive aggression results from interpretation bias of social cues, impulsivity, and hostile emotions (Crick & Dodge, 1999; Dodge, 1991). Sutton et al. (1999c) also proposed that bullies are largely manipulative and lack empathy (that is, their aggression is primarily instrumental or proactive).

The two-factor measurement model (instrumental and emotional aggression) supported the distinction between the two types of aggression. These

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**Figure 4: Final Model of Aggression, Bullying, Victimization, and Maladjustment**

- **Physical Bullying** → .17
- **Verbal Bullying** → .38
- **Machiavellianism** → .56
- **Proactive Aggressiveness** → .55
- **Reactive Aggressiveness** → .45
- **Hostility** → .91

*Note: Path coefficients are standardized. *p < .05
initial results provided evidence for the proposition that both instrumental and emotional aggressions are positively associated with bullying behavior. However, adding psychological maladjustment to the final model weakens the association between emotional aggression and bullying.

It is also important to note that instrumental aggression was not correlated with physical and verbal victimization, whereas emotional aggression was positively associated with victimization. These findings support previous research that has purported that proactively aggressive children often have fairly good social knowledge and use violence in a calculated manner and can, therefore, avoid the negative interpersonal consequences of being aggressive, which include rejection and victimization by peers (Dodge & Schwartz, 1997; Sutton, 2001). The hostile behavior of reactively aggressive children is more like inappropriate social responses due to emotional regulation and social cognition problems, which renders these children at risk for peer rejection and psychosocial maladjustment (Haynie et al., 2001).

Although the two-factor measurement model is a better fit for understanding instrumental and emotional aggression, it is worth noting that substantive correlations were found between instrumental and emotional aggression ($r = .55$ in the measurement model). Despite the conceptual meaningfulness of distinguishing between the two types of aggression, in reality many respondents manifesting one type of aggression were also at high risk of engaging in the other. This finding supports previous research suggesting that individuals who manifest a high level of reactive aggression are at high risk of proactive aggression, and vice versa, and that the etiologies of proactive and reactive aggression may overlap, with the possibility that some family environments may promote both types of aggression (Dodge, 1991; Dodge & Coie, 1987). Salmivalli and Nieminen (2002) also found it typical for bully/victims to be highly aggressive both reactively and proactively. Longitudinal research assessing children’s emotional, cognitive, and behavioral development starting at early childhood is needed to further support these findings.

**Aggression, Victimization, and Psychological Maladjustment**

Another aspect of the present study investigated the psychological consequences associated with aggression and peer victimization. On the basis of previous research (for example, Austin & Joseph, 1996; Kochenderfer & Ladd, 1996; Natvig et al., 2001), it was hypothesized that emotional aggression indicates higher peer victimization and that the victimization experience, in turn, leads to psychological maladjustment such as depression, loneliness, and anxiety. However, the mediating role of victimization experience between aggression and psychological maladjustment was not supported by the data. Instead, model fit indices showed peer victimization and psychological maladjustment as two parallel characteristics directly related to emotional aggressiveness. The strong direct effect between emotional aggressiveness and psychological maladjustment suggested that children being victimized by their peers have significant psychological issues, especially in the emotional domain. Previous studies often used peer victimization as an explanatory variable and psychological maladjustment as a dependent variable without exploring other likely relationships between them (Austin & Joseph, 1996; Rigby, 1999) or the possibility that both peer victimization and psychological maladjustment may be caused by a third factor (for example, a personal trait). The findings of the present study reveal a prospective area for future investigation, and additional research should be carried out to determine the direction of the relationship between peer victimization and psychological maladjustment.

**Limitations**

Regarding the results of the multivariate analyses presented here, it is important to note that the data structure is cross-sectional. The lack of longitudinal data makes it difficult to examine the causality and directionality of relationships between variables or to observe changes over time. A developmental perspective is beneficial in investigating the origins and trajectories of different kinds of aggression (Vitaro & Brendgen, 2005). Besides, the present study focused primarily on the internalizing aspects of maladjustment associated with aggression and victimization. The nonsignificant relationship between instrumental aggression and internalizing problems does not mean that individuals engaging in such behaviors are free of psychosocial issues. It was found that bullies mainly had externalizing symptoms such as delinquency and were often disliked by peers (Veenstra et al., 2005). The potential relationship between aggression and externalizing...
behaviors was not explored in the present study, and future investigations in this area are needed.

Another concern is the discrepancy between measures. This study used data from multiple sources (self, peers, and teachers) rather than using single-source (that is, either self-report or peer-report) data for multiple variables to construct measurement models for hypothesis testing. This approach helped to avoid the issue of shared-method variance. For example, both children's self-esteem and victimization experiences might have been assessed using self-report questionnaires. The correlation coefficient between these two factors could have been inflated by the fact these variables were measured using the same method. This problem can be addressed by using multiple methods in data collection (Juvonen, Nishina, & Graham, 2001). However, inconsistencies between teacher, peer, and self-reports were identified in the present study. This discrepancy may have resulted from the fact that the data collection was done during the respondents' first semester of middle school, given that teachers and students may not know each other very well at that time. In fact, bullying/victimization data obtained by different sources are not necessarily always consistent.

Pellegrini and Bartini (2000) compared the intercorrelations among self-reports, peer evaluations, teacher reports, and direct observations on children's aggression and bullying behavior and found low to moderate correlations. Additional efforts are needed to better understand whether these inconsistencies undergird cognitive processes, friendship patterns, or timing of data collection.

Finally, caution should be exercised when generalizing the findings of the present study to other contexts, because there is potential diversity in the dynamics and characteristics of bullying in different cultures. As with that of several other Asian areas, the Taiwanese culture is influenced by Confucianism and a collectivist tradition (Nisbett, 2003). Some researchers have highlighted the significant role that culture has played in local bullying incidents (for example, Yoneyama & Naito, 2003), whereas other studies in Asia have shown similarities with Western samples (Abou-ezzeddine et al., 2007; Wei, Jonson-Reid, & Tsao, 2007; Yang et al., 2006). A recent study compared students with collectivistic and individualistic backgrounds and found minimal cultural effects on their attitudinal responses to school bullying (Nesdale & Naito, 2005). Nevertheless, the present results should stimulate further research in other cultural contexts, which could help to provide a more comprehensive understanding of the bullying phenomenon.

CONCLUSIONS

Given this study's limitations, the present results reveal the heterogeneity of bullying and its associated effects. Various preventive intervention approaches should be considered to specifically address the diverse etiologies underlying seemingly similar behaviors. Special attention should be given to the conditions of bully/victims. These bullies not only have emotional distress and social skill deficits, they also experience victimization and peer rejection. They are likely to be at high risk of developing both reactive and proactive aggression over time. This constitutes a vicious circle for peer relations, mental health, and school adjustment.

Cognitive–behavioral techniques such as attribution modification, anger management, and social skills training may be practical for children whose aggression is related to hostile attribution bias and emotion dysregulation (Alexander & Curtis, 1995; Graham & Juvonen, 1998). It is important to note that for bullies who do not have significant social cognition deficits, traditional antibullying curriculums or emotional education programs may not be very effective (Sutton et al., 1999a). Furthermore, these programs can make bullies more knowledgeable about social manipulation and the exploitation of others for self-interest. For proactively aggressive students, it may be important to identify the potential gains of bullying and change the reinforcing structures that sustain the "profitability" of such acts. Pellegrini and Bartini (2001) have suggested that bullying is a deliberate action to build one's status and attain dominance over others that results from social competition and power seeking among boys. If this is true, then peers and school climate should constitute crucial elements in any preventive intervention design. An example of such an intervention would be an antibullying program implemented in schools in Ireland that adopted a schoolwide approach to increase the student body's awareness and encourage students through peer leadership to support peers who they witness being bullied (A. M. O’Moore & Minton, 2005). It is apparent from this study and previous research that school bullying is a complex phenomenon requiring carefully tailored interventions to respond to the different needs and risk factors of students. In providing a
comprehensive analysis of the relationships between instrumental and emotional aggression, bullying, peer victimization, and psychological maladjustment. This study contributes to the existing knowledge base and promotes the design and implementation of more evidence-based and effective school bullying prevention programs. 

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