

## *Sticks and Stones and Social Exclusion: Aggression among Girls and Boys*

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*Sometimes kids do mean things to other kids, like make faces at them, or not let them be part of their group, or gossip about them. Has anything like this ever happened to you?*

“I started hanging with another girl, they didn’t like her, they said, “We won’t be your friend anymore if you hang with her.” (12-year-old girl)

“We were playing a game and some boys got angry and kicked some of us out of the group.” (12-year-old boy)

“My best friend and I got in a argument and she just ignored me.” (12-year-old girl)

“One boy spread rumors about me...because I had ruined his reputation.” (12-year-old boy)

*Other times kids do mean things to each other like push them, or hit them, or trip them. Has anything like this ever happened to you?*

“Three boys called me a rat and harassed me and hit me with a broom.” (12-year-old girl)

“Two girls just walked up and pulled my hair.” (11-year-old girl)

“Two days ago my best friend said ‘Do my homework,’ and I said, ‘No,’ and he grabbed me by the neck and choked me.” (12-year-old boy)

“I was sitting on the bus one day and a boy just came up a hit me for no reason.” (12-year-old boy)

from Paquette and Underwood, 1999

Preparation of this chapter was supported by grants from the National Institute of Mental Health and the Timberlawn Psychiatric Research Foundation. Thanks to Julie Paquette for sharing the examples of victimization experiences at the opening of this chapter. Correspondence may be addressed to Marion K. Underwood, School of Human Development, The University of Texas at Dallas, PO Box 830688, M/S GR41, Richardson, TX, 75083. The address for electronic mail is [undrwd@utdallas.edu](mailto:undrwd@utdallas.edu).

As these examples of victims' experiences illustrate, children who behave aggressively threaten their peers, disrupt their classrooms, and frustrate parents and teachers who must try to cope with their behavior. Besides being aversive, aggression has been shown to be a fairly stable individual characteristic after about age 10 (Olweus, 1977). Aggressive behavior is related to concurrent peer rejection (Coie & Kupersmidt, 1983), and to academic problems and depressed mood (Capaldi, 1991). Aggression in childhood predicts a number of serious outcomes in later life: school dropout and delinquency (Kupersmidt & Coie, 1990; Parker & Asher, 1987), early sexual activity (Capaldi, Crosby, & Stoolmiller, 1996), adolescent motherhood (Serbin et al., 1998; Underwood, Kupersmidt, & Coie, 1996), and occupational and marital instability during adulthood (Caspi, Elder, & Bem, 1987).

For all of these reasons, a large body of research has addressed the developmental origins of aggression (see Coie & Dodge, 1998, for an overview), as well as how to intervene to reduce and to even prevent aggressive behavior (Conduct Problems Prevention Group, 1992; Kazdin, 1987). This chapter will highlight current research on aggression in children during the preschool (ages 3–5), early school (ages 5–7), and elementary years (ages 5–11), with special attention to gender, culture, and methods for defining and measuring aggression.

## Definitions and Subtypes of Aggressive Behavior

Researchers have long struggled with how to define aggressive behavior. Although over 200 definitions of aggression can be found in the psychological literature, most of these share two important features: (a) the behavior is intended to harm the target; and (b) the victim perceives that he or she has been hurt (Harré & Lamb, 1983). Although most previous researchers have interpreted harm to mean physical injury, recently, investigators have suggested that behaviors that hurt others' friendships or social status might also fit these criteria for aggression (Crick & Grotpeter, 1995; Galen & Underwood, 1997).

Other than the general criteria of intent to harm and perceived harm, it has been difficult to specify invariant properties of all aggressive behaviors. In part to cope with contradictory research findings and to describe more precisely the behaviors under study, investigators have proposed numerous different subtypes of aggression (even an incomplete list is too long to repeat here, see Underwood, Galen, & Paquette, 2001). Of all the subtypes proposed, the distinction between reactive and proactive aggression has been particularly useful in that these subtypes seem linked to different developmental antecedents and consequences, as will be discussed in detail later. Reactive aggression is angry and retaliatory, and proactive aggression is dominant aggressive behavior deployed to achieve specific goals. Because one important focus of this chapter is gender, this discussion will also highlight research on subtypes thought to correspond to boys' and girls' aggression: physical versus indirect/relational/social aggression.

Researchers generally agree that boys engage in physical fighting more than girls do (see Coie & Dodge, 1998; Knight, Fabes, & Higgins, 1996), but recently, investigators have argued that defining aggression only as physical harm leaves out more subtle forms of hurtful behaviors that might be more frequent and meaningful among girls. Lagerspetz,

Bjorkqvist, and Peltonen (1988) suggested that girls engage in more indirect aggression, which they defined as “a noxious behavior in which the target person is attacked not physically or directly through verbal intimidation but in a more circuitous way, through social manipulation” (Kaukianinen et al., 1999, p. 83). In 1989, Cairns et al. proposed that girls engage in social aggression, described as “the manipulation of group acceptance through alienation, ostracism, or character defamation” (p. 323). Galen and Underwood (1997) urged expanding this definition, writing, “Social aggression is directed toward damaging another’s self-esteem, social status, or both, and may take such direct forms as verbal rejection, negative facial expressions or body movements, or more direct forms such as slanderous rumors or social exclusion” (p. 589). In 1995, Crick and Grotpeter introduced a construct called relational aggression, which they described as “harming others through the purposeful manipulation and damage of their peer relationships” (p. 711).

Because there is considerable overlap among indirect and social and relational aggression and experts disagree as to which construct is most valid, in this chapter, these forms of behavior will be referred to as indirect/relational/social aggression. For each developmental period examined, this chapter will highlight current research on the frequency, functions, and correlates of physical and indirect/relational/social aggression.

## **The Preschool Years**

### *Physical aggression*

Anyone observing children in a preschool classroom would likely see fairly high rates of anger and physical aggression, particularly concerning struggles over objects (Fabes & Eisenberg, 1992). Research suggests that approximately 13% of 3 year olds fight with peers and have tantrums (Crowther, Bond, & Rolf, 1981; Earls, 1980). According to mothers’ diaries, physical aggression seems to be highest for 2 year olds, then decreases with age as verbal aggression increases (Goodenough, 1931).

Preschool boys engage in physical aggression more than preschool girls do (Maccoby & Jacklin, 1980), and this difference is evident across different socioeconomic groups (Baumrind, 1971) and cultures (Whiting & Whiting, 1975). In addition to the obvious possibility of biological contributions to gender differences, preschool boys may engage in physical aggression more than girls may for several reasons. Boys become involved in more conflicts (Smith & Green, 1974), boys tend to respond to angry provocation by venting and resistance (Fabes & Eisenberg, 1992), and boys’ aggression is more likely than girls’ fighting to result in resistance and to elicit like responses from peers, which contributes to the persistence of the aggressive behavior (Fagot & Hagan, 1985). Clearly, even preschool children are influenced by gender stereotypes that make physical aggression more acceptable for males. When preschool children learn to reliably label gender, boys’ aggression with peers does not change but girls’ aggression drops dramatically (Fagot, Leinbach, & Hagan, 1986).

During the preschool years, high rates of physical aggression are associated with several types of factors. Individual differences in aggressive behavior likely have a genetic

component (Gottesman & Goldsmith, 1994), and may be related to temperamental qualities such as fussiness and inability to be soothed (Bates, Maslin, & Frankel, 1985). High levels of aggression in preschool children have been shown to be related to punitive and inconsistent discipline by parents (Campbell, Breaux, Ewing, & Szumowski, 1986) and to particular types of coercive family processes (Patterson, 1982). Patterson (1982) proposed that when parents are overwhelmed by the stresses of poverty or marital discord or simply the demands of parenting challenging children, they become unable to respond sensitively and positively to desired behaviors, and they become inconsistent in their responses to negative behavior. A coercive cycle develops in which stressed parents attempt to set limits or discipline children, these children respond with increasingly noncompliant, negative behavior, and weary parents give in to such behavior, which reinforces the child's extreme noncompliance and increases its future likelihood. Preschool children may also learn to behave aggressively from their siblings (Dunn & Kendrick, 1982), and from exposure to media violence (see Huston & Wright, 1998, for an overview). Interestingly, research on nonparental child care suggests that poor quality day care may be associated with high rates of aggressive behavior with peers for preschool children (Lamb, 1998).

During the preschool period, physical aggression likely declines for several reasons. Children become better able to use language to communicate their needs, and better able to delay gratification. Peers begin to communicate to one another that physical aggression is not acceptable, and dominance hierarchies develop that serve to regulate ongoing social interaction (Strayer & Trudel, 1984). In addition, children become better able to internally regulate emotions, more empathic, and higher on ego-control (see Coie & Dodge, 1998, for a discussion of these developmental changes). Given that during this period physical aggression decreases and verbal aggression increases, it is interesting to speculate whether the above factors might actually contribute to the development of indirect/relational/social aggression.

### *Indirect/relational/social aggression*

Researchers have only begun to investigate indirect/relational/social aggression among preschool children. To date, very little normative information is available about the rates of these behaviors in preschool classrooms.

In one of the first investigations of relational aggression in young children, Crick, Casas, and Mosher (1997) developed peer nomination and teacher ratings scales to assess relational aggression in 3–5-year-old children. Relational aggression items included “tells a peer that he or she won't play with that peer or be that peer's friend unless he or she does what this child asks” and “when mad at a peer, this child keeps that peer from being in the play group” (p. 581).

The results indicated that teacher reports showed a moderate relation between relational and overt aggression for both girls ( $r = .73$ ) and boys ( $r = .76$ ), whereas peer nominations suggested a weaker relationship ( $r = .37$  and  $.36$  for girls and boys, respectively). Teachers reported that girls were higher than boys on relational aggression and boys were higher than girls on physical aggression, but the peer nominations showed no gender differences for either form of aggression. The results indicated that the relation between relational

aggression and psychological adjustment was complex and depended on the gender of the children and the source of the information. For boys, peer nominations of relational aggression were related to peer rejection, but also to peer acceptance as rated by teachers. For girls, relational aggression was related only to peer rejection.

Using similar definitions of aggression, McNeilly-Choque, Hart, Robinson, Nelson, and Olsen (1996) obtained data from multiple informants on 4–5-year-old children's physical aggression, verbal relational aggression, and nonverbal relational aggression. For relational aggression, gender differences depended on the source of the information. Playground observations indicated that girls were more relationally aggressive than boys were, but peer nominations did not show gender differences. Teachers rated girls as higher than boys on verbal relational aggression, but there were no gender differences for nonverbal relational aggression. McNeilly-Choque et al. (1996) found that not all of the preschool children observed engaged in relational aggression: 65% showed no relational aggression, 17% rarely were relationally aggressive, 10% were moderately relationally aggressive, and 7% of children showed high rates of relational aggression. Interestingly, the correlations among the playground observations, teacher ratings, and peer nominations were quite low for relational aggression, suggesting either that children exhibit these behaviors differently in different social contexts, or that these behaviors are difficult to observe or rate accurately.

Researchers have also just begun to investigate biological factors that may relate to indirect/relational/social aggression in young children. Preschool children who are rated by teachers as high on relational aggression show more dramatic elevations in cortisol levels over the course of a day in daycare settings (Dettling, Gunnar, & Donzella, 1999). It also seems sensible that engaging in both relational and overt aggression may be associated with physical characteristics such as body size and physical attractiveness, although research to date has not explored these issues.

Family characteristics may also be related to indirect/relational/social aggression during the preschool years. In a comparison of preschool children in a Head Start and a university-based preschool, McNeilly-Choque et al. (1996) found that teachers rated higher SES children as more relationally aggressive. They suggested that this might be due to higher SES parents using more sophisticated, person-centered forms of socialization, which their children might mimic in hurting others, or to more modeling of snobbishness in affluent homes. McNeilly-Choque et al. (1996) noted that that much more research is needed to confirm these speculations, but little research since has explored the relation between family SES and indirect/relational/social aggression.

In a study of preschool children and families in Russia, Hart et al. (1998) examined whether parenting styles were related to relational aggression (assessed by teaching ratings on items similar to those of Crick et al., 1997). Interestingly, teachers did not report gender differences on relational or on overt aggression. The results indicated that for boys, maternal and paternal responsiveness were related to lower levels of relational aggression. For girls, maternal coercion was related to higher rates of relational aggression. Additional research with other samples is needed to determine the generalizability of these results, but the relations between parenting and relational aggression are intriguing as suggestions of some early origins of this behavior.

## The Early School Years

Although early theorists did not label the 5–7 age range as a distinct developmental period, more contemporary researchers have recognized that great developmental advances take place during this period (Sameroff & Haith, 1996). At least in United States culture, this age range includes the transition to organized schooling, which might pose special challenges for children prone to aggression.

### *Physical aggression*

Research suggests that the overall frequency of physical aggression continues to decrease during this age range, although this decline may be largely due to the highly aggressive subgroup becoming less extreme (Ladd & Burgess, 1999). Just as during the preschool years, more highly aggressive children are boys.

During the early school years, individual differences in physical aggression seem related to family factors (SES and parenting) and to how children process social information. Across age ranges, levels of aggression are higher in lower SES groups (see Coie & Dodge, 1998, for a discussion of the complex reasons for this phenomenon). For a kindergarten sample, lower SES predicted higher levels of initial aggression, but lower SES was not related to greater increases in aggression from kindergarten to third grade (McFadyen-Ketchum, Bates, Dodge, & Pettit, 1996).

In this same study, observed maternal coercion and nonaffection were positively related to higher parent ratings of aggression just prior to kindergarten. Maternal coercion and nonaffection predicted increases in aggressive behavior from kindergarten through third grade for boys, but predicted decreases in aggression for girls. McFadyen-Ketchum et al. (1996) interpreted the boys' findings as supporting Patterson's (1982) coercion model, and suggested that because girls are more sensitive and compliant to adult demands, maternal coercion might be more effective in squelching their aggressive behavior. Although this theory awaits empirical confirmation, this result suggests that aggressive boys and girls might respond differently to parental negativity.

Specific types of discipline practices are associated with high levels of physical aggression in this age range. Strassberg, Dodge, Pettit, and Bates. (1994) compared the levels of reactive aggression, proactive aggression, and bullying in the kindergarten children of parents who used no physical discipline, spanking, or violent punishment. The results showed that the highest levels of aggression were associated with parental use of violent discipline, but important differences between the spanking and nonspanking groups were also apparent. Children of mothers who used spanking were observed at school to be higher on reactive and total aggression than children of mothers who used no physical discipline. Children of fathers who used spanking were higher on reactive aggression than those of fathers who used no physical discipline (for boys only, the spanking group was higher than the non-use group on bullying and total aggression). The overall pattern of these results strongly suggests that spanking is associated with high levels of aggression as observed at school. This finding is particularly important given that 90% of parents in the United States report

spanking their children (Straus & Gelles, 1986), presumably because they believe that spanking will reduce misbehavior (Holden & Zambarano, 1992).

However, the relation between physical discipline and behavior problems may not be the same for different ethnic groups. For a sample of children followed from kindergarten through third grade, maternal reports of using physical discipline were moderately related to teacher and peer reports of externalizing behaviors for European-American children, but not for African-American children (Deater-Deckard, Dodge, Bates, & Pettit, 1996). Further research is necessary to understand exactly how physical discipline relates to a broad array of parenting behaviors for different ethnic groups, and how particular constellations of family characteristics and parenting behaviors predict aggression.

Perhaps as a result of harsh parenting practices or early stressful events or reinforcement experiences, children who are highly aggressive tend to make particular types of errors in processing social information (Dodge, 1990; Dodge, Bates, & Pettit, 1990). Crick and Dodge (1994) proposed that children come to social interactions with a database of past experiences and biologically determined abilities, but then process social cues in a series of six steps: encoding, interpretation, goal clarification, response generation, response evaluation, and enactment. A large body of research has demonstrated that how children process information at each of these steps relates to social adjustment in important ways, perhaps especially to aggression. A comprehensive summary of social information-processing research is beyond the scope of this chapter (see Crick & Dodge, 1994, for an integrative and thorough review). In short, particular types of aggressive children tend to show specific deficits in social information processing. Children who are high on reactive aggression tend to overattribute hostility in the face of ambiguous cues, and this hostile attribution bias is related to experiencing harsh parental discipline (Dodge, 1990; Weiss, Dodge, Bates, & Pettit, 1992). Children who are high on proactive aggression view the likely outcomes of aggressive behaviors as more positive than other children (Crick & Ladd, 1990), which Dodge (1990) suggested may be due to early experiences of being rewarded for physical aggression.

Children who engage in high rates of aggression during the early school years develop serious difficulties in their relationships with their peers and their teachers. The relation between aggression and peer status depends in part on the particular type of aggressive behavior. For a sample of 5–6 year olds, Price and Dodge (1989) found that observed rates of reactive aggression were associated with peer rejection as measured by teacher ratings, whereas engaging in proactive aggression was related to positive peer status in this age range. In their comparisons of the relationship trajectories of aggressive, withdrawn, and aggressive-withdrawn children, Ladd and Burgess (1999) found that children in the aggressive and the comorbid groups were consistently higher on peer rejection during grades K–2, and had more conflicts with their teachers. Children who were both aggressive and withdrawn reported more loneliness and less social satisfaction than other groups. Together, the weight of the evidence strongly suggests that aggression during the early school years is associated with social and psychological problems.

*Indirect/relational/social aggression*

Research to date has not investigated the forms and possible developmental consequences of indirect/relational/social aggression during the early school years. Experts agree that during this period, physical aggression declines as verbal aggression increases (see Coie & Dodge, 1998). Bjorkqvist (1994) proposed that as children become more verbally skilled and sophisticated in their social understanding, they become more likely to hurt each other by indirect means, particularly because these more subtle behaviors are less likely to be punished by adults. It seems sensible to expect that predicted increases in indirect/relational/social aggression might be apparent as early as 5–7 years of age. Also during these years, children are experiencing the massive changes in their social ecology as they begin school, as well as moving toward middle childhood, a developmental period in which fitting in with the same-gender peer group is of paramount importance (Gottman & Mettetal, 1986). Empirical research is needed to determine whether indirect/relational/social aggression increases during the early school years, differs for boys and girls, takes both proactive and reactive forms, and is associated with social and academic adjustment.

**Middle Childhood**

During the later elementary years, children strongly value being accepted by same-sex peer groups and work very hard to maintain emotional control (Gottman & Mettetal, 1986). Children become masters of dissemblance as they learn to cope with conflicting cultural messages about expressing emotions: be honest, but hide your negative feelings if you want people to like you (Saarni & von Salisch, 1993). For these reasons, many children who continue to engage in high rates of aggression during this developmental period are seen as increasingly deviant and disordered.

*Physical aggression*

Most children become less physically aggressive during the elementary years, but a small number of children continue to start fights (Loeber & Hay, 1993), and at least for boys, engaging in aggression behavior after age 10 is a highly stable trait, as stable as intelligence (Olweus, 1977). Boys continue to be more physically aggressive than girls during this age range (Knight et al., 1996; Maccoby & Jacklin, 1974, 1980).

As mentioned at the opening of this chapter, engaging in physical aggression during middle childhood is associated with poor adjustment in several ways. Although not all aggressive children are socially rejected by peers, about half are (French, 1988). Reactive aggression continues to be strongly associated with peer dislike, and even proactive aggression becomes more strongly associated with rejection in older age groups (Dodge & Coie, 1987). For a sample of sixth-grade boys, aggression was shown to be associated with academic problems and depressed mood (Capaldi, 1991), and for a sample of third- to sixth-

grade boys, peer nominations of overt aggression were associated with boys' self-reports of depression (Crick & Grotpeter, 1995).

Interestingly, physical aggression seems related to maladjustment across cultures. In a series of studies conducted in China, physical aggression has been shown to be related to school and social problems (Chen, Rubin, & Li, B., 1995; Chen, Rubin, & Li D., 1997; Chen, Rubin, & Li, Z., 1995). However, in one longitudinal study, there was an unexpected gender difference in the relation between aggressive-disruptive behavior and social adjustment (Chen, Rubin, Li, & Li, 1999). For boys, aggression at ages 8–10 was negatively related to social adjustment 4 years later, but for girls, aggression at ages 8–10 positively predicted social adjustment. The authors explained this finding by pointing out that aggression in girls is less stable, perceived as more deviant, and might take more subtle forms than those that were captured by the measures of physical aggression used here. Future research is needed to explore the fascinating possibility that some types of aggression may be positively related to adjustment for girls in some cultural contexts.

Engaging in high rates of physical aggression during middle childhood appears to be related to some of the same factors as for earlier developmental periods: coming from a low SES family, experiencing harsh discipline, being involved in coercive cycles with parents, and errors in social information processing. In addition, another factor that may strongly influence aggression during the elementary years is exposure to media violence (see Huston & Wright, 1998, for a review of this large and fascinating literature). Meta-analyses combining the findings of the most well-done studies show that the effects of television violence account for about 10% of the variance in children's physical aggression (Wood, Wong, & Chachere, 1991). Some evidence indicates that highly aggressive children are more attracted to violent television (Huesmann & Miller, 1994), which suggests that physically aggressive children who are already at risk for school and social problems might have all of these difficulties exacerbated by more exposure to this widely available environmental agent.

### *Indirect/relational/social aggression*

Most of the research on indirect/relational/social aggression has been conducted with children in the later elementary grades. Hurting others by indirect means such as social exclusion may be particularly powerful during this developmental period in which children strongly value acceptance by the same-gender peer group (Gottman & Mettetal, 1986). Children may seek to hurt each other by damaging what their same-gender groups most value (Crick & Grotpeter, 1995): for boys, physical dominance and for girls, social relationships. Some have even gone as far as to argue that indirect/relational/social aggression in females serves similar functions as physical aggression for males, and that if you consider both indirect/relational and physical aggression, girls are as aggressive as boys are (Bjorkqvist, 1994; Crick et al., 1999).

As intriguing as these theories are, evidence is mixed as to whether there are clear gender differences in indirect/relational/social aggression, and patterns of gender differences seem to depend on the type of measure used. Using peer nomination measures, some studies find clear gender differences for indirect aggression in Scandinavian samples (Lagerspetz et

al., 1988) and for relational aggression in Midwestern U.S. samples (Crick, 1996, 1997; Crick & Grotpeter, 1995). However, other studies of U.S. samples using peer nomination items similar to Crick's find no gender differences (e.g., Rys & Bear, 1997), or show that boys are rated higher than girls are on relational aggression (Henington, Hughes, Cavell, & Thompson, 1998). In a study with Italian children, peer reports indicated that boys were higher on relational aggression than girls were (Tomada & Schneider, 1997). Findings from studies using self-report measures are similarly inconsistent. In one study, boys reported engaging in more relational aggression than girls did (Crick & Grotpeter, 1995). Another investigation showed that girls and boys report experiencing similar rates of social aggression (Paquette & Underwood, 1997). Given the lack of consistent findings for gender differences in indirect/relational/social aggression, it seems important to refrain from referring to these behaviors as "female aggression." Although it is likely true that girls engage in relational aggression more than physical aggression, it does not necessarily follow that girls engage in more relational aggression than boys do.

A growing body of evidence suggests that engaging in relational aggression is negatively related to social-psychological adjustment, both concurrently and in short-term longitudinal studies. Children rated by peers as relationally aggressive are disliked by peers, and relationally aggressive girls report greater loneliness and less social satisfaction (Crick & Grotpeter, 1995). For girls, peer ratings of relational aggression predict social rejection 6 months later (Crick, 1996). It is important to note that in both of these studies, relational aggression was related to maladjustment over and above physical aggression (i.e., the predictive relation remained even when levels of physical aggression were statistically controlled).

Given that the above studies all used peer nomination measures of relational aggression, it seems important to consider the possibility that the relation between indirect/relational/social aggression and maladjustment may also depend on the methods used. In a study using peer narrative measures, Xie, Swift, Cairns, and Cairns (2000) found that social aggression in childhood was unrelated to negative outcomes in adolescence.

One study suggests that the aggressive children at most risk for maladjustment are those who engage in gender non-normative forms of aggression: relationally aggressive boys and physically aggressive girls (Crick, 1997). Teachers rated relationally aggressive boys as more maladjusted than relationally aggressive girls, nonrelationally aggressive girls, and nonrelationally aggressive boys. Teachers reported more maladjustment for overtly aggressive girls than for overtly aggressive boys, nonovertly aggressive boys, and nonovertly aggressive girls. These results suggest that the more rare and understudied groups, relationally aggressive boys and overtly aggressive girls, may be perceived as most deviant and perhaps at risk for subsequent psychopathology.

Taken together, the evidence that engaging in indirect/relational/social aggression is related to social-psychological maladjustment makes it imperative that we learn more about the developmental origins of these behaviors. Future research is needed to explore whether higher SES children engage in more relational aggression as McNeilly-Choque et al. (1996) found for preschoolers, and whether particular types of parenting behaviors result in children becoming high on relational aggression. Some evidence suggests that just as for physical aggression, children high on relational aggression may show particular deficits in social information processing. Crick (1995) found that children high on relational aggression were more likely to misattribute hostile intent in scenarios describing relational provocation.

In addition, fully understanding the relation between indirect/relational/social aggression and psychological adjustment will require basic, developmental research to assess whether engaging in these behaviors is indeed rare and related to psychopathology, or more normative and frequent. Interestingly, some studies have suggested that indirect/relational/social aggression may be related to positive social qualities, such as social intelligence (Kaukiainen et al., 1999) and may serve positive developmental functions such as maintaining one's sense of belonging (Paquette & Underwood, 1999) and protecting the integrity of social groups (Leckie, 1999).

## **Challenges and Future Directions**

As rich and interesting as the very large research literature on aggression in childhood has become, important questions remain (see Underwood, Galen, & Paquette, 2001, for a more complete discussion of methodological challenges). One set of questions concerns the fact that aggressive behavior and how it is perceived depends heavily on the social context. To make matters even more complicated, context can have several levels of meaning, such as culture, physical setting, genders or ages or social roles of participants in the interaction, the activity in which they are engaged, and the immediate events leading up to the aggressive event. The few available studies suggest that all of these types of contexts may influence aggressive behavior. In addition to the studies cited above on aggression in different cultures, research suggests that even boys rated by teachers as externalizers only fight in response to particular provocations (such as being teased or threatened, Wright, Zakriski, & Drinkwater, 1999). Particular group dynamics affect rates of physical aggression in experimental play groups (DeRosier, Cillessen, Coie, & Dodge, 1994), and much of the aggression in experimental play groups is exhibited by mutually aggressive dyads who make more hostile attributions about each other's behaviors (Coie et al., 1999).

A second daunting set of challenges is that clarifying the role of context for all forms of aggression will require additional observational research. As many investigators have noted, actually observing aggressive behavior is difficult, especially among older children, because they refrain from aggressing when they know they are being observed (Coie & Dodge, 1998). Crick and Grotpeter (1995) have argued that observing relational aggression is very difficult not only because the behaviors are subtle and difficult to detect, but also because relational aggression takes place in complex sequences over time, and understanding these requires detailed knowledge of all of the participants. Despite these obstacles, Galen and Underwood (1997) have shown that social aggression can be reliably elicited and observed for a small number of girls' laboratory play sessions. Pepler and Craig (1995) reported that reliable coding of indirect aggression was possible using remote audiovisual recording, for which children wear remote microphones and their playground behavior is videotaped from afar using cameras with zoom lenses. Using laboratory methods and new technologies will do much to clarify gender differences, developmental antecedents and consequences of engaging in physical as well as indirect/relational/social aggression.

Finally, additional research is needed on the long-term developmental trajectories of all forms of aggression. A sizable body of research on physical aggression has formed the basis for a developmental model of conduct disorder and a comprehensive prevention program (Conduct Problems Prevention Group, 1992), and this model should serve as a type of standard for research efforts to better understand indirect/relational/social aggression. What are the early developmental origins of indirect/relational/social aggression, how do these behaviors continue to be expressed as children enter adolescence and adulthood, and how do they relate to adjustment in later life? The best answers to these questions might require that researchers move beyond the conceptual frameworks used by researchers studying physical aggression. It might be especially important to consider that indirect/relational/social aggression may be more qualities of groups than individuals, that these behaviors may occur across more settings because they are so rarely punished, and that these behaviors are more covert and could take place over more extended time scales than physical aggression. Future research should explore whether continuing to engage in indirect/relational/social aggression into adolescence and adulthood is associated with difficulties with work colleagues, problems in romantic relationships, and ineffective parenting.

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