ABSTRACT

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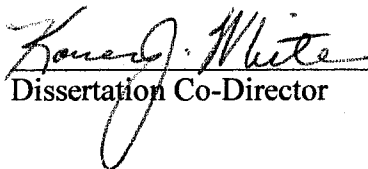
Title: Aggression Form and Function Subtypes and Social Goal Preferences in Fifth-
Grade Children

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ABSTRACT

Childhood aggression is associated with maladaptive social information processing in general and maladaptive social goals in particular. Specifying aggression in terms of its form (i.e., overt, relational) and function (i.e., proactive, reactive) simultaneously may clarify existing research on aggression and social goals. The present study investigated the associations between aggression forms and functions (i.e., overt, relational, proactive, and reactive; peer-nomination measure) and select social goals (i.e., affiliation, avoidance, dominance, and revenge; self-report measure using hypothetical provocation vignettes) in 156 fifth-grade students while attempting to measure aggression forms and functions simultaneously and in a nonconfounded manner (e.g., indications of aggression form were omitted from aggression function items).

Overt and proactive aggression were hypothesized to be associated with dominance goals while relational and reactive aggression were hypothesized to be associated with revenge goals. Associations were hypothesized to remain significant in hierarchical regression after entering gender and the alternate form or function of aggression in earlier steps. Hypotheses about select form-function interaction terms were also made (i.e., overt-proactive and dominance, relational-reactive and revenge).

Hypotheses generally failed to be supported or could not be evaluated. While relational and reactive aggression were each positively associated with revenge goals,

dominance was not associated with aggression. Also, both relational and reactive aggression failed to contribute significantly to the overall model in hierarchical regression when added at the final step. In contrast, aggression subtypes entered at the second step generally contributed significantly. Hypotheses regarding form-function interactions could not be evaluated.

In contrast to the self-report measure of social goal preferences, the peer-nominated measure of aggression failed to differentiate anticipated factor structure (i.e., overt, relational, proactive, reactive) when all aggression items were evaluated simultaneously in principal components analysis. In contrast, a two-factor solution was generally supported (i.e., general, relational). Consistent with prior research, however, when only aggression form or function items were evaluated, but not both, principal components analyses generally supported anticipated factor structures (i.e., overt versus relational, proactive versus reactive). The present results challenge the broad form/ function distinction of childhood aggression. Study limitations and directions for future research were discussed.

NORTHERN ILLINOIS UNIVERSITY

AGGRESSION FORM AND FUNCTION SUBTYPES AND SOCIAL GOAL

PREFERENCES IN FIFTH-GRADE CHILDREN

A DISSERTATION SUBMITTED TO THE GRADUATE SCHOOL

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE

DOCTOR OF PHILOSOPHY

DEPARTMENT OF PSYCHOLOGY

BY

JEFFREY W. MARTENS

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DEDICATION

To Tricia, Mom, Dad, Dan, and Dave, with gratitude

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CHAPTER 1

INTRODUCTION TO THE STUDY

Statement of the Problem

Childhood aggression, broadly speaking, is associated with a wide array of maladjustments for both the victim and the aggressor (Asarnow & Callan, 1985; Asher & Wheeler, 1985; Bierman, 1986; Coie & Dodge, 1983; Coie, Dodge, & Coppotelli, 1982; Coie, Dodge, Terry, & Wright, 1991; French, 1990; French & Waas, 1985; Kupersmidt & Patterson, 1991). However, aggression is increasingly understood to be a multidimensional construct (Coie & Dodge, 1998; Dodge, 1991; Dodge & Coie, 1987; Frick, 1998; Pulkkinen, 1996). Recent aggression research has begun to empirically integrate two "higher-order" (Little, Jones, Henrich, & Hawley, 2003, p. 122) dimensions of aggression. More specifically, Little and his colleagues (Little, Brauner, Jones, Nock, & Hawley, 2003; Little, Jones, et al., 2003) empirically distinguished different aggression "forms" (e.g., overt vs. relational) and "functions" (e.g., proactive/instrumental vs. reactive) in a German sample of fifth- to tenth-grade students. However, Little and colleagues did not examine aggression forms and functions with respect to social goals, which could significantly clarify the question of why children aggress.

The "form" dimension broadly differentiates aggression subtypes in terms of what the aggressive behaviors look like to an outside observer (e.g., physical harm vs. damage to an important relationship). Little and colleagues note that, based on prior aggression research, "at least two higher-order forms can be meaningfully distinguished" (Little, Jones, et al., 2003, p. 122): overt and relational aggression. Overt aggression is generally characterized by verbal and physical behaviors that directly harm an individual (e.g., hitting, kicking, pushing, verbal insults, verbal threats). In contrast, relational aggression is generally characterized by intentionally damaging an individual's close relationships and/or feelings of social inclusion through verbal (e.g., gossiping, rumors) and/or physical (e.g., social exclusion) behaviors. Relationally aggressive behaviors, in contrast to overtly aggressive behaviors, are often carried out indirectly (i.e., the victim doesn't know who the aggressor was).

The "function" dimension broadly differentiates aggression subtypes in terms of their general purpose or function (e.g., planned instrumental gain vs. spontaneously ending a perceived threat or attack). Little and colleagues also noted, again based on prior aggression research, that two higher-order functional dimensions of aggression could be meaningfully distinguished: proactive and reactive aggression. Proactive (or instrumental) aggression is generally characterized as harmful behaviors that are deliberate and planned, are generally not spontaneous, and are characterized by relatively calm affect. In contrast, reactive aggression is generally characterized as harmful behaviors that are spontaneous, impulsive,

excessive, and rapid, which typically include overt displays of anger. The purpose of reactive aggression is to put an end to some perceived slight, injustice, or threat.

Aggressive behavior, as it has traditionally been measured (i.e., failing to differentiate between aggression forms or functions), is associated strongly with maladaptive social information processing in general (see Crick & Dodge, 1994, for review) and maladaptive social goals in particular (see Erdley & Asher, 1999, for review). It appears likely that specifying aggression forms and functions may clarify existing associations between aggression and social goals. That is, specific aggression forms and specific aggression functions may each be associated with specific social goal preferences.

Social goals have been defined as arousal states that are oriented toward producing particular social outcomes (Crick & Dodge, 1994, 1996). Social goals are theoretically important because they are believed to influence which behavioral response strategies will be generated and ultimately enacted (Crick & Dodge, 1994). Social goals have been empirically linked to various indices of social competence, including childhood aggression (see Erdley & Asher, 1999, for review).

The social goals of dominance, revenge, affiliation, and avoidance appear to have particular relevance for childhood aggression (see Erdley & Asher, 1999, for review). Empirically, the social goals of dominance and revenge have been positively associated with aggressive behavior, and the social goal of affiliation has been negatively associated with aggression (Lochman, Wayland, & White, 1993). In contrast, the social goal of avoidance has demonstrated a sometimes significant

relationship with aggression (e.g., no significant differences between aggressive and nonaggressive boys, but significant within-group social goal preference differences for nonaggressive boys only; Lochman et al., 1993). However, it remains unclear if significant social goal preferences are differentially associated with specific aggression forms, functions, or form-function interactions.

Differentiating aggression in terms of form and function may clarify associations between aggression and various social goals. More specifically, dominance goals may be associated with overt aggression and with proactive aggression (Dodge, 1991; Dodge & Coie, 1987; Hawley & Vaughn, 2003; Pellegrini & Long, 2002; Prinstein & Cillessen, 2003). Revenge goals may be associated with relational aggression and with reactive aggression (Dodge, 1991; Dodge & Coie, 1987; Holbrook, 1997). Affiliation goals may be associated with aggression functions (Little, Jones, et al., 2003). Avoidance goals are sometimes associated with aggression (Lochman et al., 1993) but have not yet been investigated with respect to specific aggression forms and functions. Last, no research exists which has investigated social goals and specific aggression form-function interactions (e.g., high levels of both overt and proactive aggression).

In summary, available research on the relationship between aggression and social goals has failed to adequately investigate differences in social goals on the basis of aggression forms (i.e., overt vs. relational), functions (i.e., proactive vs. reactive), or possible form-function interactions (e.g., overt-proactive, relational-reactive, etc.). However, empirical findings support the investigation of such

distinctions. Therefore, the primary aim of the proposed study is to clarify the relationship between aggression and social goals by investigating possible social goal preference differences as functions of aggression form or function subtypes. The secondary and more exploratory aim of the proposed study is to examine the social goal preferences of specific aggression form-function interactions.

Literature Review

Aggression: Problematic and Multidimensional

Aggression in childhood and adulthood is associated with many indices of maladjustment for both the victim and the aggressor (Coie, Lochman, Terry, & Hyman, 1992; Loeber, 1990; Parker & Asher, 1987; Pulkkinen & Pitkanen, 1993). Moreover, childhood aggression is predictive of serious academic, behavioral, emotional, and social difficulties (Asarnow & Callan, 1985; Asher & Wheeler, 1985; Bierman, 1986; Coie & Dodge, 1983; Coie et al., 1982; Coie et al., 1991; French, 1990; French & Waas, 1985; Kupersmidt & Patterson, 1991). Contemporary aggression theorists have come to understand the nature of aggression to be multidimensional (Coie & Dodge, 1998; Crick & Grotpeter, 1995; Dodge, 1991; Dodge & Coie, 1987; Feshbach, 1969; Feshbach & Sones, 1971; Frick, 1998; Pulkkinen, 1996). Because dimensions of aggression have historically been researched along independent or orthogonal lines of investigation (Little, Jones, et al., 2003), the degree to which these various dimensions of aggression either overlap

with one another or combine in uniquely predictive ways remains largely unclear. Preliminary research has begun integrating these subgroups of aggression into overarching typologies or higher-order dimensions. This integration has begun in adolescent samples (Little, Brauner, et al., 2003; Little, Jones, et al., 2003; Prinstein & Cillessen, 2003) and in early to late childhood samples (Little, Brauner, et al., 2003; Little, Jones, et al., 2003; Roach & Gross, 2003).

Little and his colleagues (Little, Brauner, et al., 2003; Little, Jones, et al., 2003) integrated aggression "forms" (or the "what" of aggression; e.g., overt/relational, direct/indirect, physical/social, material/verbal) and "functions" (or the "why" of aggression; e.g., proactive/reactive, instrumental/defensive) into a single self-report measure of childhood aggression. They administered their measure to German and Turkish children ranging from fifth through tenth grades. Little and colleagues theorized that form and function distinctions reflect broad and complementary dimensions of aggression and that aggression could and should be operationalized in a manner which differentiates aggression forms and functions from one another (e.g., overt aggression without any reference to its function) and which allowed for combinations of aggression form and function (e.g., overt-proactive).

Little and colleagues (Little, Brauner, et al., 2003; Little, Jones, et al., 2003) demonstrated that aggression forms (overt, relational) and functions (proactive, reactive) were each uniquely and differentially associated with various criterion variables (i.e., frustration intolerance, hostility, victimization, social influence, social

competence, shyness, social motivation, and academic achievement). Notably, Little and colleagues measured aggression forms and functions in a manner that allowed for an examination of the unique associations to criterion variables for each of the aggression subtypes (e.g., pure overt aggression, pure proactive aggression, etc.).

In addition, for Little and colleagues (Little, Brauner, et al., 2003; Little, Jones, et al., 2003), prediction of criterion variables often varied as a function of rater type (e.g., self-, peer-, or teacher-report). For example, self-reported hostility was more strongly associated with overt aggression than with reactive aggression. In contrast, peer-reported hostility was more strongly associated with self-reported reactive aggression than with either self-reported overt or self-reported relational aggression. While complex, the various findings of Little and colleagues (Little, Brauner, et al., 2003; Little, Jones, et al., 2003) collectively provide initial empirical support for their assertion that it is important for researchers to differentiate aggression in terms of both form (overt, relational) and function (proactive, reactive).

The importance of differentiating aggression forms and functions was further investigated in tenth graders by Prinstein and Cillessen (2003) and in third and fourth graders by Roach and Gross (2003). Prinstein and Cillessen demonstrated that measures of social status (i.e., peer-perceived popularity and sociometric status) were uniquely associated with aggression forms and functions. More specifically, "both the provocateurs and targets of reputational aggression had high levels of peer-perceived popularity" (p.310). Also, proactive aggression was "associated with high

popularity among adolescents, while reactive aggression was associated with low social preference" (p. 310).

However, Prinstein and Cillessen's (2003) study contained notable methodological limitations (Underwood, 2003). For example, Prinstein and Cillessen used one question to assess each of the three forms (i.e., overt, relational, and reputational) and three functions (i.e., instrumental, reactive, bullying) of aggression, for six total questions. Also, aggression forms and functions were not measured independently of one another, as "function" questions referenced immediately preceding "form" questions. Nevertheless, the results found by Prinstein and Cillessen (2003) are consistent with the argument that it is wise to assess both forms and functions of aggression.

One published study failed to demonstrate the importance of simultaneous assessment of aggression forms and functions. Roach and Gross (2003) investigated the possibly unique associations of aggression forms (i.e., overt, relational) and functions (i.e., proactive, reactive) to multiple indices of social adjustment (i.e., social preference, depression/withdrawal, victimization, fighting, and detentions) in a United States sample of third- and fourth-grade students. Roach and Gross demonstrated aggression form (overt, relational) correlate patterns consistent with prior research.

However, Roach and Gross (2003) failed to replicate a two-factor solution in their principal components analysis of Dodge and Coie's (1987) teacher-rated measure of aggression function. Their one-factor solution stands in contrast to the

two-factor solution uniformly found in previous research using the Dodge and Coie

measure (e.g., Day, Bream, & Pal, 1993; Dodge & Coie, 1987; Dodge, Price, Coie, &

Christopoulos, 1990; Poulin & Boivin, 2000). As a result, the unique associations of

aggression forms and functions to social adjustment indices could not be determined

by Roach and Gross.

In sum, recent research (Little, Brauner, et al., 2003; Little, Jones, et al.,

2003; Prinstein & Cellissen, 2003) generally supports the simultaneous investigation

of aggression forms and functions. Furthermore, Little and colleagues (Little,

Brauner, et al., 2003; Little, Jones, et al., 2003) found that measuring aggression

forms and functions in a manner that permitted analysis of their unique relative

contributions provided novel and significant results. Therefore, theoretical and

empirical elaborations on both aggression forms and functions appear warranted.

Aggression Dimension of Form: Overt and Relational Aggression

Little and colleagues (Little, Brauner, et al., 2003; Little, Jones, et al., 2003)

distinguished between the aggression "forms" of overt aggression and relational

aggression (e.g., Crick, 1995, 1996; Crick & Grotpeter, 1995). Overt aggression is

generally characterized by verbal and physical behaviors intended to directly harm an

individual (e.g., hitting, kicking, pushing, verbal insults, verbal threats, etc.). Overt

aggression reflects the form of aggression most typically demonstrated by aggressive

boys (e.g., Crick, 1995, 1996; Crick, Bigbee, & Howes, 1996; Crick & Grotpeter,

1995; Rys & Bear, 1997), most characteristic of males across the life span (Cairns,

Cairns, Neckerman, Ferguson, & Gariepy, 1989; Olweus, 1979; Pulkkinen, 1996)

and most typically studied in aggression research (Crick & Grotpeter, 1995;

Lagerspetz & Björkqvist, 1994).

Relational aggression, in contrast, is generally characterized by intentionally

damaging an individual's close relationships and/or feelings of social inclusion

through verbal (e.g., gossiping, rumors) and/or social (e.g., social exclusion)

behaviors. Relationally aggressive behaviors, in contrast to overt aggression, are

frequently carried out indirectly (e.g., directed toward a third party in the presence of

the victim or even without the awareness of the victim). Relational aggression

reflects the form of aggression most typically demonstrated by aggressive girls (e.g.,

Crick, 1995, 1996; Crick et al., 1996; Crick & Grotpeter, 1995; Rys & Bear, 1997).

However, there are notable and increasing exceptions to this general gender trend

(i.e., aggressive boys tend to be overtly aggressive while aggressive girls tend to be

relationally aggressive), such as when a higher percentage of boys than girls

demonstrate relational aggression (e.g., Crick, Casas, & Mosher, 1997; Henington,

Hughes, Cavell, & Thompson, 1998; Little, Brauner, et al., 2003; Little, Jones, et al.,

2003; Tomada & Schneider, 1997).

Overt and relational aggression reflect different "forms" in the sense that they

employ different methods (e.g., hitting vs. gossiping) to accomplish similar or

identical social goals (e.g., to retaliate or exact revenge). However, it must be noted

that the use of the term "form" as a dimension of aggression is intended as a

meaningful, though not definitional, heuristic for grouping together overt and

relational aggression. That is, overtly and relationally aggressive behaviors typically look different (e.g., hitting vs. gossiping), but the same-looking aggressive behavior (e.g., shouldering someone out of a group) could reasonably be interpreted as either overtly or relationally aggressive depending upon the context. Nevertheless, clear evidence exists of the reliability, validity, and utility of both overt and relational forms of aggression.

Overt and relational aggression have consistently been demonstrated to be related but distinct forms of aggression (e.g., Crick, 1995, 1996, 1997; Crick & Grotpeter, 1995). More specifically, overt and relational aggression are typically moderately correlated, with *r*s usually in the .5 to .7 range (e.g., Crick, 1996, 1997; Crick & Bigbee, 1998; Crick & Grotpeter, 1995; Grotpeter & Crick, 1996). Yet, overt and relational aggression are nevertheless distinct. Multiple studies using peer-, teacher-, and self-report measures of overt and relational aggression and victimization (e.g., Crick, 1996, 1997; Crick & Bigbee, 1998; Crick & Grotpeter, 1995; Tomada & Schneider, 1997; see Crick, Werner, Casas, O'Brien, Nelson, Grotpeter, & Markon, 1999, for review) have evidenced both the reliability (e.g., internal consistency of scales, test-retest reliability) and the validity (e.g., differential associations with concurrent and future measures of psychosocial maladjustment, as well as differential social information processing) of the overt and relational aggression distinction. Overt and relational aggression are differentially associated with social acceptance (e.g., Rys & Bear, 1997), peer rejection (e.g., Crick & Grotpeter, 1995; Rys & Bear, 1997; Werner & Crick, 1999), loneliness and isolation

(Crick & Grotpeter, 1995), depression (Crick et al., 1997; Crick & Grotpeter, 1995), internalizing problems (Crick, 1997), and general maladjustment (Crick, 1997).

Last, overt and relational forms of aggression are each consistently associated with unique patterns of social information processing (e.g., Crick, 1995; Crick et al., 1996; Crick, Grotpeter, & Bigbee, 2002; Crick & Werner, 1999; David & Kistner, 2000; Sumrall, Ray, & Tidwell, 2000). For example, several researchers have found that relational aggression, but not overt aggression, is associated with a hostile attribution bias in response to relational provocation (Crick, 1995; Crick et al., 2002; Sumrall et al., 2000), but not overt provocation. Furthermore, relationally aggressive children differ from their nonaggressive peers in terms of greater positive self-perception bias (David & Kistner, 2000). In addition, when angry or provoked, relationally and overtly aggressive children differ from one another in terms of their generation and selection of relationally and overtly aggressive responses (Crick et al., 1996; Crick & Werner, 1999; Sumrall et al., 2000).

Of particular relevance to the proposed study, however, relational aggression, but not overt aggression, may be associated with social goals of revenge in response to relational provocation (see Erdley & Asher, 1999, for review). In contrast, overt aggression may show a greater association with the social goal of dominance (see Erdley & Asher, 1999, for review). The relationships of various social goals to specific aggression forms and functions will be elaborated upon after first clarifying the aggression "function" distinction.

Aggression Dimension of Function: Proactive and Reactive Aggression

Little and colleagues (Little, Brauner, et al., 2003; Little, Jones, et al., 2003) distinguished between two broad aggression functions: proactive (instrumental) aggression and reactive aggression. Proactive aggression reflects assaultive behaviors (e.g., hitting, threatening), which tend to be deliberate and planned, oriented toward goals of dominance or material gain, and characterized by relatively calm affect (see Dodge & Schwartz, 1997; Roland & Idsoe, 2001; Scarpa & Reine, 1997, for reviews). Proactive aggression is considered the "controlled-proactive-instrumental-predatory subtype" of aggression (Miczek, Fish, de Bold, & de Almeida, 2002; Vitielo & Stoff, 1997). Proactive aggression is theoretically rooted in social learning theory (Bandura, 1973), suggesting that social goals of dominance or material gain may be particularly salient.

Reactive aggression, in contrast, reflects assaultive behaviors (e.g., hitting, yelling) that are generally spontaneous, impulsive, excessive, and rapid responses to some perceived slight, injustice, or threat (see Crick & Dodge, 1996; Dodge, Lochman, Harnish, Bates, & Pettit, 1997; Dodge & Schwartz, 1997, for reviews). Reactive aggression is considered the "impulsive-reactive-hostile-affective subtype" of aggression (Miczek et al., 2002; Vitielo & Stoff, 1997). Reactive aggression is strongly affected by feelings of frustration or anger (Goins-Flanagan, 1999; Scarpa & Reine, 1997) and is "reactive" in the sense that the aggressive individual is attempting to put an end to some perceived threat or harm (Dodge & Coie, 1987).

Reactive aggression is theoretically rooted in the frustration-aggression model (Berkowitz, 1989; Dollard, Doob, Miller, Mowrer, & Sears, 1939), suggesting that the social goal of revenge may be particularly salient. In short, proactive and reactive aggression reflect different "functions" in that they reflect distinguishable clusters of affect, spontaneity, and motivation, even though similar methods (e.g., hitting, social exclusion) may be used to perform respective "functions." It should be clear that proactive and reactive aggression subtypes include components beyond just their functions (e.g., spontaneity, affect, etc.).

Empirical research has supported the reliability, validity, and utility of the aggression function distinction of proactive and reactive aggression (e.g., Brown, Atkins, Osborne, Milnamow, 1996; Dodge & Coie, 1987; Dodge et al., 1997; Poulin & Boivin, 2000; Waschbusch, Willoughby, & Pelham, 1998). Proactive and reactive aggression are associated with distinct profiles or patterns on a wide variety of variables. For example, proactive and reactive aggression differ with respect to antecedent behaviors (Vitaro, Brendgen, & Tremblay, 2002), family variables (Brendgen, Vitaro, Tremblay, & Lavoie, 2001; Ramsden, 2001), developmental histories (Dodge et al., 1997), and prevalence rates across development (McAdams, 2002). In addition, proactive and reactive aggression differ on friendship variables (Dodge et al., 1990; Hubbard, Dodge, Cillessen, Coie, & Schwartz, 2001; Poulin & Boivin, 1999, 2000; Poulin, Cillessen, Hubbard, Coie, & Dodge, 1997) as well as on perceived competencies (Day et al., 1993; Matloff, 2002; Pulkkinen, 1996), concurrent psychosocial functioning (e.g., Brown et al., 1996; Dodge et al., 1997;

Vitaro et al., 2002), and subsequent psychosocial functioning (Brendgen et al., 2001; Vitaro, Gendreau, Tremblay, & Oligny, 1998). Also, the proactive/reactive distinction may have significant implications for treatment effectiveness (Bennett, Macri, Creed, & Isom, 2001; Lochman & Lenhart, 1993).

Proactive and reactive aggression are additionally associated with different patterns of social information processing (e.g., Ahn & Park, 1992; Crick & Dodge, 1996; Dodge & Coie, 1987; Dodge et al., 1997; Hartman & Stage, 2000; Hubbard et al., 2001; see Dodge & Schwartz, 1997, for review). For example, Dodge and colleagues (1997) demonstrated differences between proactive and reactive aggression in social cue encoding, intent attributions, response access, and response decision. In addition, proactively aggressive children select instrumental goals rather than relational goals more often then their nonproactively aggressive peers (Crick & Dodge, 1996). Also, reactive aggression appears to be associated with revenge goals (Dodge, 1991; Dodge & Coie, 1987; Holbrook, 1997). Such social goal differences in aggression function will be elaborated upon shortly. First, the meaning and importance of social goals must be clarified.

Social Goals: Definition and Types of Social Goals

Social goals are broadly defined as arousal states that are oriented toward producing particular social outcomes (Crick & Dodge, 1994, 1996). The sources of social goals "are likely to include feelings (e.g., feeling angry might serve as the impetus for a retaliatory goal), temperament (e.g., Does the child tend to move

toward, away from, or against others?), adult instruction (e.g., coaching and modeling...), cultural or subcultural norms (e.g., What are appropriate goals for girls, for fifth graders, or for rich kids?), and the media (e.g., television and video games)" (Crick & Dodge, 1994, p. 87).

There is no clear consensus within the social goals research literature on what are the most important types of social goals (see Austin & Vancouver, 1996; Crick & Dodge, 1994; Ford & Nichols, 1987, for reviews). However, with respect to children's aggression and social competence, there is a growing overlap and consistency in the specific social goals that have been investigated and that have demonstrated significance (see Erdley & Asher, 1999, for review). In particular, four commonly investigated and empirically relevant social goals are dominance, revenge, affiliation, and avoidance. First, however, social goals and aggression functions must be differentiated.

Social goals and aggression functions reflect different and distinguishable constructs. The term "function" in this investigation, as noted earlier, refers to the constructs of proactive and reactive aggression and reflects a meaningful heuristic rather than a strictly limiting definition. While proactive and reactive aggression are functional (i.e., have an aim, purpose, or goal), those constructs are also broader than their respective functional aspects. The proactive and reactive aggression constructs consist of multiple aspects that would not be considered purposive (e.g., affective calmness versus overreactivity, use of modeling versus impulsivity, etc.). Moreover, even the functional aspects of proactive and reactive aggression are conceptually

distinguishable from social goals. More specifically, a variety of social goals may serve each of the respective functional aspects of proactive and reactive aggression. A brief elaboration may clarify the point.

By definition, reactive aggression's "function...is to relieve [a] perceived threat, not to achieve some internally generated goal" (Dodge & Coie, 1987, p. 1147). However, the function of reactive aggression might be directed toward any of at least three distinct social goals. One might engage in reactive aggression toward the goals of avoiding a potential threat (i.e., pursue the social goal of avoidance). Alternately, reactively aggressive behavior may be directed toward the social goal of domination, thus making the target of the reactive aggression too submissive to continue as a threat (Deviney, 2002). Yet another possibility, and the most obvious, includes engaging in reactive aggression in pursuit of the social goal of revenge (Dodge & Coie, 1987). Therefore, the functional aspect of reactive aggression, ending some perceived actual or potential threat, could be directed toward each of three distinct social goals. In other words, social goals are conceptually more specific than the respective functions of reactive aggression. An analogous argument may then be made with respect to multiple social goals and the functional aspect of proactive aggression.

Last, the "functions" served by aggression functions may also differ from social goals in terms of stability over time and persistence across situations (Camodeca, Goossens, Meerum Terwogt, & Schuengel, 2002). For example, aggression function is predictive of bullying and victimization over time (e.g., one

year test-retest). Stable victims and stable bully/victims were more reactively aggressive than their unstable counterparts (Camodeca et al., 2002). In contrast, social goals appear to be more time limited and context dependent (Demby, 2001; Dowson & McInerney, 2003; Renshaw & Asher, 1983). For example, across multiple interviews and multiple observations, Dowson and McInerney (2003) found that middle school students did not hold academic and social goals in isolation and that those students' multiple goals interacted in conflicting, converging, and compensatory ways to influence ongoing academic motivation and performance. In sum, the term "function" in its most technical sense is conceptually distinct from the constructs proactive and reactive aggression (though the term "function" is being used as a general heuristic label for both) as well as from social goals. Social goals, moreover, are important in their own right.

Social goals are important for both theoretical and empirical reasons. Theoretically, social-cognitive (e.g., Crick & Dodge, 1994) and cognitive-behavioral theories (e.g., Lochman & Lenhart, 1993; see Fraser, 1996, for review) posit that social goals are critical in influencing which behavioral response strategies will be generated and ultimately enacted. That is, goals are understood to be causal antecedents to behavioral enactment (Crick & Dodge, 1994; Ladd & Crick, 1989). Social goals may influence the selection of potential behavioral responses but may also be modified through feedback by other steps of social information processing (Crick & Dodge, 1994). Therefore, changing social goals may lead to changes in

behavioral responses. Stated simply, investigating social goals partially, but directly, addresses the question of why children choose to aggress.

With respect to treatment, increasing specificity and efficacy of treatment will require selective modification of social goals, or training in appropriate ways to achieve certain goals (e.g., Akhtar & Bradley, 1991; Lochman & Lenhart, 1993). Moreover, newly taught social skills may not generalize unless social goals are modified (Erdley & Asher, 1996), as the new and adaptive skills may not match the original social goal. Alternately, if social goals can be modified toward more adaptive goals, then those children may be more likely to select adaptive behavioral responses (Erdley & Asher, 1999; Lochman & Lenhart, 1993). Indeed, children who emphasize prosocial goals generally demonstrate greater social competence as well as less aggression (Dodge, Asher, & Parkhurst, 1989; Dweck, 1996; Rabiner & Gordon, 1992).

Empirically, social goals are important because they are significantly associated with social competence, aggression, friendship patterns, academic achievement, and gender (see Erdley & Asher, 1999, for review). Relationship-enhancing social goals (e.g., helping peers, affiliation) are positively associated, whereas relationship-damaging social goals (e.g., revenge, dominance) are negatively associated, with various indicators of social adjustment, such as peer status, aggression status, and behavioral response selection (see Erdley & Asher, 1999, for review). Moreover, social goals are significantly and specifically associated with aggression.

Aggressive behavior is broadly associated with greater endorsement of revenge and dominance social goals, but lower endorsement of affiliation or relationship-maintenance social goals (Erdley & Asher, 1996; Lochman et al., 1993; Rose & Asher, 1999; Slaby & Guerra, 1988). This general social goal pattern (i.e., higher dominance and revenge, lower affiliation) is also positively associated with future criminal behavior, as well as marijuana, drug, and alcohol involvement in boys (Lochman et al., 1993). The general relationship of avoidant social goals to aggression, in contrast, appears to be inconsistent in differentiating aggressive from nonaggressive children (cf. Erdley & Asher, 1996; Lochman et al., 1993). However, this research on aggression and social goals is potentially limited, in light of more recent research (Little, Brauner, et al., 2003; Little, Jones, et al., 2003; Prinstein & Cillessen, 2003), in that it failed to differentiate aggression in terms of its forms and functions. Consideration of both aggression form and function may clarify previous research on social goals and aggression, particularly among fifth graders.

Aggression and Social Goals: Developmental Overlap

The greatest empirical overlap between aggression and social goals has been for children in and around fifth grade. More specifically, the relationships of social goals to aggression and social competence have been investigated most consistently with participants in and around fifth grade (see Erdley & Asher, 1999, for review). Furthermore, research on aggression forms (overt, relational) and their relationships to social information processing variables has generally been conducted with

children in and around fifth grade (e.g., Crick, 1995; Crick et al., 2002; Crick & Werner, 1999; David & Kistner, 2000; Delveaux & Daniels, 2000). Similarly, research on aggression functions (proactive, reactive) and their relationships to social information processing variables has generally been conducted with children in and around fifth grade (e.g., Dodge & Coie, 1987; Stiensmeier-Pelster & Gerlach, 1997; see Hudley, 1994, for review), including research on social goals (Crick & Dodge, 1996). Last, seminal research by Little and colleagues that simultaneously evaluated aggression form and function was conducted with children as young as fifth grade (Little, Brauner, et al., 2003; Little, Jones, et al., 2003).

Multiple developmental reasons exist to investigate the relationships of multiple aggression dimensions and multiple social goals in the fifth grade (see Bukatko & Daehler, 1995; Rice, 1995; Rosser, 1994, for reviews). For example, both quantitative and qualitative increases in categorization complexity (e.g., shared and unique categorical features) and perceived ontological possibilities (i.e., what can exist) emerge during late childhood. Also, fifth-grade children are moving beyond simple implicit cognition (i.e., knowledge is used but cannot be directly operated on, thought about, or manipulated) and beginning to develop the capacity for explicit cognition and metacognition (i.e., thinking about and operating on one's own thoughts/knowledge; the ability to think about what one is thinking). This development is crucial for children to meaningfully and accurately discuss their intentions and motivations (e.g., social goals). In addition, developmental increases in the memory of fifth graders (e.g., capacity, control, content) increase the

probability of remembering enough about their own and their peers' behavior to permit more subtle distinctions in aggression and motivation. In short, developmental research (see Bukatko & Daehler, 1995; Rice, 1995; Rosser, 1994, for reviews) suggests that fifth graders have developed the cognitive capacity to differentiate among and between related, but distinguishable dimensions of aggression, as well as to speak meaningfully about their own intentions and motivations.

<div align="center">Clarifying Social Goals Research</div>

Research on the associations between aggression and social goals may be clarified by specifying aggression in terms of form and function. Associations between aggression and social goals may be clarified for two types of social goals research: (1) research in which neither aggression form nor function was clearly specified (Chung & Asher, 1996; Erdley & Pietrucha, 1995; Lochman et al., 1993) and (2) research in which either aggression form or function, but not both, were specified (e.g., Crain, Finch, & Foster, 2005; Crick & Dodge, 1996; Delveaux & Daniels, 2000; Little, Brauner, et al., 2003). Clarifying such research is the primary aim of the proposed investigation. In addition, no research currently exists which simultaneously and specifically examines social goals and both form and function of aggression (i.e., form-function combinations). Therefore, examining the social goal preferences of specific form-function combinations is a secondary and more exploratory aim of the proposed investigation.

Unspecified Form, Unspecified Function

First, let us examine relevant social goals research in which neither form nor function of aggression was specified (Chung & Asher, 1996; Erdley & Pietrucha, 1995; Lochman et al., 1993). Lochman and colleagues (Lochman et al., 1993) investigated the relationship of aggression and social goals in adolescent boys (mean age of 15 years old) in response to ambiguous provocation. Aggressive boys, relative to their nonaggressive peers, rated the social goals of dominance and revenge higher and the social goal of affiliation lower. In addition, nonaggressive boys' preference scores (for both ratings and ranking) demonstrated a clear within-group hierarchy of social goal preference (i.e., affiliation > avoidance > dominance > revenge). For the aggressive boys, in contrast, there were no significant within-group differences between any pairs of their social goal ratings (or rankings), suggesting that all four of the social goals (i.e., affiliation, avoidance, dominance, and revenge) were valued to roughly the same degree. This demonstrated within-group social goal equivalence for the aggressive boys was aptly described by Lochman and colleagues as a "'muddy' undifferentiated goal structure" (Lochman et al., 1993, p. 148).

Consideration of the function of aggression may clean up the apparently "muddy" goal structure found in the with-group comparisons conducted by Lochman and colleagues (1993). In addition, the between-group differences in both dominance and revenge goals may be further clarified. More specifically, proactive aggression is theoretically associated with social goals of dominance and instrumental gain,

whereas reactive aggression is theoretically associated with the social goal of revenge (Dodge, 1991; Dodge & Coie, 1987). This suggests that when general aggression, like that studied by Lochman and colleagues (1993), is subdivided into proactive and reactive subtypes, dominance goals may be associated primarily with proactive aggression and revenge goals may be primarily associated with reactive aggression.

Three studies are consistent with theoretical links between proactive and reactive aggression and dominance and revenge goals, respectively (Chung & Asher, 1996; Erdley & Pietrucha, 1995; Pellegrini & Long, 2002). First, Chung and Asher (1996) demonstrated in fourth- through sixth-grade children that the social goal of instrumental control (i.e., having control over their own activities and possessions), in response to hypothetical instrumental conflict (e.g., use of the last available playground swing), is associated with aggressive responses. Instrumentality is theoretically and empirically linked to proactive aggression rather than reactive aggression (Dodge & Coie, 1987; Prinstein & Cillessen, 2003).

Second, Pellegrini and Long (2002), in their longitudinal investigation of fifth- through seventh-grade bullying, found that bullying mediated children's dominance status. Bullying has been described as a person-directed (as opposed to object-directed) form of proactive aggression (Hartup, 1974; Prinstein & Cillessen, 2003). Therefore, results of both Chung and Asher (1996) and Pellegrini and Long (2002) are consistent with proactive aggression being associated with dominance goals (Dodge, 1991; Dodge & Coie, 1987).

Third, Erdley and Pietrucha (1995, as reported in Erdley & Asher, 1999) demonstrated in fourth- through sixth-grade children that the social goal of revenge, in immediate response to hypothetical peer rejection, is associated with aggressive responses. By definition (Dodge & Coie, 1987), reactive aggression occurs in direct response to some perceived slight or threat (e.g., peer rejection). So, to the extent that hypothetical peer rejection reflects a perceived slight or threat, the study by Erdley and Pietrucha provides indirect evidence that reactive aggression is associated with revenge goals. Taken together, research by Chung and Asher (1996), Pellegrini and Long (2002), and Erdley and Pietrucha (1995) is suggestive that dominance goals are associated with proactive aggression and revenge goals are associated with reactive aggression.

Therefore, theory and research suggest that proactive aggression, relative to either relational aggression or nonaggression, is more strongly associated with dominance goals. In contrast, reactive aggression is more strongly associated with revenge goals than either proactive aggression or nonaggression. Distinguishing between aggression functions may clarify both between-group and within-group results found by Lochman and colleagues (Lochman et al., 1993). Of note, additional support for the hypothesized link between proactive aggression and the social goals of dominance may be found in research in which aggression function, but not form, was specified (Crick & Dodge, 1996).

Unspecified Form, Specified Function

Next, let us examine social goals research in which aggression function (proactive vs. reactive), though not form (overt vs. relational), was specified (Crick & Dodge, 1996; Little, Brauner, et al., 2003). Briefly stated, Crick and Dodge (1996) demonstrated that proactively aggressive children, relative to their nonproactively aggressive peers, preferred instrumental over relational (affiliative) social goals in conflict situations. In contrast, Little and colleagues (Little, Brauner, et al., 2003) failed to differentiate proactive and reactive aggression from one another in terms of the social goal of affiliation.

More specifically, Crick and Dodge (1996) investigated how various social information processing mechanisms (i.e., intent attributions, outcome expectations, self-efficacy, social goals) were associated in third- through sixth-grade children with proactive and reactive aggression. However, the social goal preferences of proactive aggressive children were only compared to those of nonproactive aggressive children. The social goal preferences of reactive aggressive children were not evaluated. Furthermore, the social goals of theoretical relevance to reactively aggressive children (e.g., revenge) were not investigated. Nevertheless, Crick and Dodge (1996) found that in conflict situations (e.g., taking possession of a ball) proactive aggressive children, relative to their nonproactive aggressive peers, were more likely to select instrumental goals (e.g., "the kids let you have the ball" [p. 1001]) than relational or affiliative social goals (e.g., "the kids like you" [p. 1001]).

Crick and Dodge's (1996) study demonstrated proactive aggressive children differ from their nonproactive aggressive peers in terms of social goals, but there are important limitations to their findings. First, Crick and Dodge failed to include reactively aggressive children in their analysis of social goal preferences. Second, they failed to include social goals of theoretical importance to reactively aggressive children (e.g., revenge; Dodge, 1991; Dodge & Coie, 1987). Moreover, Holbrook (1997) demonstrated in prison inmates that modifying social goals reduced reactive aggression, though reactive aggression was inferred based on inmates' reports of previously being hurt first by other inmates rather than assessed directly. Also, social goals research on aggressive children (see Erdley & Asher, 1999, for review) has consistently demonstrated a significant and positive association with revenge goals. Third, social goals research is increasingly (see Erdley & Asher, 1999, for review) including a wider variety of goals, such as were included by Lochman and colleagues (i.e., affiliation, avoidance, dominance, revenge; Lochman et al., 1993). A goal of the proposed investigation is to examine the associations of both proactive and reactive aggression with a broader range of social goals (affiliation, avoidance, domination, revenge).

Little and colleagues (Little, Brauner, et al., 2003) investigated the relationships between various aggression functions (e.g., proactive, reactive, neither, etc.) and intrinsic and extrinsic social motivations. They examined intrinsic (e.g., personal enjoyment) versus extrinsic (e.g., popularity) motivations for why participants "try to make new friends" (p. 352). Attempting to make friends is

theoretically and empirically consistent with relational or affiliation social goals (e.g., Crick & Dodge, 1996; Lochman et al., 1993; Renshaw & Asher, 1983; Rose & Asher, 1999). Between-group differences (e.g., a group of children who were either proactively or moderately aggressive versus a group of children who were either reactively or both proactively and reactively aggressive) were demonstrated for both intrinsic and extrinsic motivation, suggesting that affiliation goals are significantly related to aggression function.

However, for several reasons, Little and colleagues' (Little, Brauner, et al., 2003) results remain only broadly informative about the relationship between affiliation goals and aggression function. Only qualitative descriptions of the relationships of motivation and aggression function were provided for within-group analyses of intrinsic and extrinsic motivation. Additionally, aggression function groups were compared in combinations (see above), but not individually (e.g., proactive versus reactive aggression, etc.), for between-group analyses of intrinsic and extrinsic motivation.

The results of Little and colleagues (Little, Brauner, et al., 2003) appear to provide evidence that the social goal of affiliation may be significantly related to aggression function in some manner. However, simple comparisons between proactive, reactive, and nonaggressive groups were not conducted. Moreover, Little and colleagues did not address the relationships between proactive and reactive aggression and other social goals (e.g., avoidance, dominance, and revenge).

Examining a variety of social goals may better differentiate aggressive children from one another and from nonaggressive children.

<u>Specified Form, Unspecified Function</u>

Last, relevant social goals research in which aggression form, though not function, was specified (Crain et al., 2005; Delveaux & Daniels, 2000) will be examined. Delveaux and Daniels investigated the relationships between multiple social goals (e.g., maintaining personal control, revenge, avoiding trouble, maintaining relationships with the focal peer) and conflict resolution strategies (e.g., relationally aggressive, overtly aggressive) in fourth- through sixth-grade Canadian children. In response to hypothetical conflict vignettes (e.g., conflict over who will get to read a book or what TV show to watch), children rated the degree to which they endorsed each conflict resolution strategy and each social goal.

Delveaux and Daniels (2000) found that both physically and relationally aggressive strategies were positively correlated with the goals of personal control and revenge, but negatively correlated with maintaining relationships with the focal peer. Relationally aggressive strategies were also positively correlated with avoiding trouble. However, their study was methodologically flawed in that physically aggressive strategies varied widely in saliency and extremity (e.g., slap versus polite request) and relationally aggressive strategies primarily served instrumental ends (e.g., obtain possession of mutually desired puzzle pieces) and were therefore confounded with proactive aggression. Nevertheless, Delveaux and Daniels's study

does provide some evidence of a link between both forms of aggression and social goals approximating dominance, revenge, avoidance, and affiliation. Measuring forms and functions in a manner that maximizes their distinctiveness may clarify these results.

Crain, Finch and Foster (2005) examined whether social information processing variables were predictive of relational aggression in fourth- through sixth-grade girls. In response to hypothetical vignettes involving ambiguous relational provocation (e.g., overhearing that they have not been invited to a party), children rated the degree to which they endorsed relationally aggressive responses and each of four social goals (i.e., relationship exclusivity, social instrumental, friendship continuation, revenge). Also, children were identified as relationally aggressive through the use of a peer-nomination instrument amended from prior research (Crick & Grotpeter, 1995).

However, for Crain and colleagues (Crain et al., 2005), overt and relational aggression were highly correlated ($r = .87$), so the contribution of peer-nominated overt aggression could not be controlled. Also, Crain and colleagues failed to differentiate proactive and reactive versions of relationally aggressive behavioral responses (i.e., proactive-relational and reactive-relational aggression items were correlated in the .90s; S. L. Foster, personal communication, March 2003). Therefore, the two relational behavioral response items were combined into a single index of relationally aggressive behavioral response. Not surprisingly, social goals failed to predict peer nominations of relational aggression. Had Crain and colleagues

(Crain et al., 2005) been successful in differentiating aggression forms and functions, they may have shed considerable light on the possibly unique associations of aggression forms, aggression functions, and social goals.

Research broadly suggests that overt aggression is associated with the social goals of dominance and revenge when aggression function is not specified. More specifically, aggression research has traditionally measured aggression in a manner which emphasized overtly aggressive behaviors, such as hitting, shoving, and even "fighting" (see Björkqvist, 1994, and Crick et al., 1999, for reviews). Research on aggression and social goals is largely consistent with that tradition (see Erdley & Asher, 1999, for review) and has consistently demonstrated positive associations between aggressive children and dominance and revenge goals (e.g., Erdley & Asher, 1996; Lochman et al., 1993).

In particular, Erdley and Asher (1996) found that fourth- and fifth-grade children were more likely to endorse dominance or revenge goals and less likely to endorse affiliation or avoidance goals if they were aggressive than if they were either prosocial or withdrawn. Erdley and Asher's (1996) results roughly parallel earlier findings by Lochman and colleagues (Lochman et al., 1993) discussed above. However, Erdley and Asher (1996) assessed aggression using individual items that were proactive (e.g., Who starts fights?) and items that were reactive (e.g., Who gets mad easily?). Therefore, overt aggression appears associated with both dominance and revenge goals when aggression function is unspecified. Measuring aggression in

a manner that avoids confounding aggression forms and functions may be essential in understanding the relationship between overt aggression and social goal preferences.

Indirect evidence, however, suggests that overt aggression may be specifically associated with dominance goals. As noted above, Pellegrini and Long (2002) investigated bullying in fifth through seventh graders and found that bullying mediated dominance status. Bullying is defined in that study in a manner consistent with proactive aggression (see above) and with overt aggression. When Erdley and Asher (1996) and Pellegrini and Long (2002) are viewed in combination, those studies suggest that overt aggression may be more closely tied to dominance goals than to revenge goals.

Additional indirect evidence points to a tentative link between relational aggression and revenge goals. A number of studies on relational aggression and intent attributions (Crick, 1995; Crick et al., 2002; Sumrall et al., 2000) have demonstrated a hostile attribution bias for ambiguous relational provocation in third- through sixth-grade relationally aggressive children, relative to their peers. Hostile attribution biases are also associated with aggression in general (see Crick & Dodge, 1994, for review) and with reactive aggression in particular (e.g., Dodge et al., 1997). This raises the possibility that what we know of social information processing deficits in relationally aggressive children may be confounded, in part, by a disproportionate influence of possible reactive aggression within relational aggression. Reactive aggression is theoretically associated with revenge goals (e.g.,

Dodge & Coie, 1987), which is therefore suggestive of a possible link between relational aggression and the social goal of revenge through reactive aggression.

In sum, studies in which aggression form is specified, but not function, are suggestive that overt aggression may be more closely associated with dominance goals and that relational aggression may be more closely associated with revenge goals. However, confounded assessment of aggression functions and aggression forms limits our confidence in the demonstrated associations to dominance and revenge goals. Therefore, relatively unconfounded measures of aggression forms and functions will be needed to clarify associations with social goals. Let us then turn our attention to questions of measurement and methodological issues.

Methodological Issues

In this section, some important methodological concerns related to assessing aggression and social goals will be discussed. Important methodological issues concerning aggression include rater type (e.g., peer, teacher, self), simultaneously assessing forms and functions, and gender differences. Important methodological issues concerning social goals include methods of eliciting social goals (e.g., hypothetical situations/vignettes), situation types to elicit social goals, how many and which social goals to assess, rating versus ranking social goal preferences, and possible gender differences.

Aggression

Operationalization of aggression to include nonphysically aggressive acts has recently been debated. More specifically, Underwood (2003) has critiqued some recent childhood aggression research for including a "somewhat dizzying and difficult to sort through" (p. 376) number of aggression subtypes. While she praised recent research for its specificity, she implied that it is inappropriate to move the operationalization of aggression away from purely physical aggression, such as "starting fights and hitting" (p. 375). However, recent research on relational forms of aggression and social-psychological adjustment (see Crick et al., 1999, for review) make it plainly evident that nontraditionally researched forms of aggression, such as relational aggression, are significantly related to maladjustment for both the perpetrator and the victim. Moreover, different forms of aggression are associated with divergent patterns of psychosocial adjustment as well as social information processing (see Crick et al., 1999, for review). Simply put, the research noted earlier has compellingly demonstrated the importance of assessing both overt and relational forms of aggression. Therefore, in the proposed investigation, both overt (traditional) and relational (nontraditional) forms of aggression will be examined.

Rater effects reflect another methodological concern for aggression research. Raters differ widely in their assessments of which children are aggressive. Various rater types have historically been used to assess childhood aggression (e.g., teacher, peer, self, parent, friend, direct observation, etc.). Generally speaking, however, the

majority of research on childhood aggression has employed peer-, teacher-, or self-reports to identify aggressive children (see Crick et al., 1999, for review), with self-reports generally de-emphasized as being less valid than other-reports (Underwood, 2003; cf. Little, Jones, et al., 2003). This general pattern of rater types has been demonstrated for both overt and relational forms of aggression (see Crick et al., 1999, for review). Several researchers have demonstrated across multiple ages that various rater types (e.g., peer, teacher, self, friend, parent) only moderately agree in their classifications of aggressive students (Crick, 1996; Little, Brauner, et al., 2003; McEvoy, Estrem, Rodriguez, & Olsen, 2003; Österman, Björkqvist, Lagerspetz, Kaukiainen, Huesmann, & Fraczek, 1994; Pakaslahti & Keltikangas-Järvinen, 2000; Tomada & Schneider, 1997). Nevertheless, some general inferences may be made about interrater agreement.

Several general guidelines regarding interrater agreement about childhood aggression have been demonstrated, particularly for aggression forms. (1) Self- and other-reports of aggression forms tend to be only moderately to marginally correlated to each other (e.g., Pakaslahti & Keltikangas-Järvinen, 2000). (2) Self-other agreement tends to be higher for overt aggression than for relational aggression (e.g., Little, Brauner, et al., 2003). (3) Peer-reports reflect a more valid measure of peer exclusion associated with relational/indirect aggression (e.g., Henington et al, 1998; see Crick et al., 1999, for review). (4) Internal consistencies tend to be higher for other-rated than self-rated aggression scales (e.g., Österman et al., 1994). (5) Various other-reporters (e.g., peer, teacher, friend, parent) tend to demonstrate higher

interrater agreement with each other than with self-reports (e.g., Little, Brauner, et al., 2003). Also, (6) self-reports minimize and peer-reports maximize identification of one's own aggressiveness (e.g., Österman et al., 1994). Last, (7) interrater agreement tends to be highest between peer- and teacher-reports (e.g., Pakaslahti & Keltikangas-Järvinen, 2000). Given the above rules of thumb, the proposed investigation will employ a peer-report of aggression (Appendix A) in the evaluation of hypotheses.

Rater type guidelines are generally absent for assessing aggression functions. In contrast to overt and relational aggression forms, proactive and reactive aggression functions have been typically measured with teacher-reports (e.g., Brown et al., 1996; Day et al., 1993; Dodge & Coie, 1987), and cross-rater comparisons of aggression function are generally lacking. More specifically, most aggression function research has employed either Dodge and Coie's (1987) measure or some variation on their measure (e.g., Brown et al., 1996). One exception to this rule is a study by Little and colleagues (Little, Brauner, et al., 2003).

Little and colleagues (Little, Brauner, et al., 2003) measured aggression functions using multiple informants (i.e., peer, self, friend, teacher, and parent) and in a manner which allowed for statistical control of the effects of aggression forms and aggression functions. They demonstrated that informant type is significant when determining correlations with various indices of psycho-social adjustment (i.e., intrinsic/extrinsic social motivation, social competence, shyness, hostility, frustration intolerance, academic performance, and problem-solving ability). While complex,

the results of the Little and colleagues' study strongly support the assertion that rater type also is important when assessing aggression functions.

Underwood (2003), however, has critiqued Little and colleagues (Little, Brauner, et al., 2003) for their use of "phantom constructs" (p. 378) in measuring aggression functions. That is, Little and colleagues never actually measure "pure" and unconfounded (by aggression form) aggression function items. Instead, the measure used by Little and colleagues (Little, Brauner, et al., 2003; Little, Jones, et al., 2003) contains "pure" overt items, "pure" relational items, proactive-overt items, reactive-overt items, proactive-relational items, and reactive-relational items. Little and colleagues then statistically separate the relative contributions of the aggression forms from the form-functions combination items and are therefore able to discuss the unconfounded contribution of aggression function.

Underwood's critique is an important one. The various raters in the Little and colleagues' study (Little, Brauner, et al., 2003) never actually completed an unconfounded aggression function item (i.e., there was no direct assessment of aggression function without additional aggression form information being present). Underwood's critique of Little and colleagues appears to be directed toward the omission of actual unconfounded aggression function items, rather than challenging the conclusion that rater type matters for aggression functions. Indeed, Underwood (2003) argued against self-reported aggression and for peer- or other-rated aggression.

Overall, use of a peer-nomination measure of aggression appears most appropriate in the present study (Appendix A). Interrater agreement for identifying aggressiveness is highest for peer- and teacher-rated measures (e.g., Pakaslahti & Keltikangas-Järvinen, 2000). However, evaluating dimensions of aggression across rater types introduces error due to rater type in forms and functions of aggression already known to demonstrate at least moderate levels of correlation with one another (e.g., Dodge & Coie, 1987; see Crick et al., 1999, for review). Also, peer-ratings appear to be the most valid index of relational aggression information (see Crick et al., 1999, for review).

Gender differences in childhood aggression are moderately complex. Boys consistently demonstrate a higher rate of overt aggression than do girls (see Björkqvist, 1994; Coie & Dodge, 1998; and Crick et al., 1999, for reviews). Also, initial research was strongly suggestive that girls demonstrate rates of relational aggression higher than those found for boys (see Björkqvist, 1994, and Crick et al., 1999, for reviews). More recent research, in contrast, has evidenced equivalent or even higher rates of relational aggression in boys, relative to girls (e.g., Crick et al., 1997; Little, Brauner, et al., 2003; Little, Jones, et al., 2003; Tomada & Schneider, 1997). With respect to aggression functions, there is less consistent evidence of clear gender differences (Day et al., 1993; Dodge & Coie, 1987; Dodge et al., 1997; Waschbusch et al., 1998). Therefore, gender differences in both aggression forms and functions are possible and appear particularly likely for overt aggression. However, anticipated gender differences are not always demonstrated (e.g., Crick et

al., 1997; Little, Brauner, et al., 2003; Little, Jones, et al., 2003; Tomada &

Schneider, 1997). Moreover, it remains largely unclear how gender differences are

associated with social goal differences (see below).

Social Goals

Methodological issues concerning social goals, as noted above, include

methods of eliciting social goals (e.g., hypothetical situations/vignettes), situation

types to elicit social goals, how many and which social goals to assess, rating versus

ranking social goal preferences, and possible gender differences. Social goals

research on children's aggression has most commonly assessed social goals through

the use of hypothetical situations and occasionally through behavior observations

coded for likely goals (see Crick & Dodge, 1994, and Erdley & Asher, 1999, for

reviews). The principal advantages to the behavior observation approach are

increased salience of the social situation for participants and increased

generalizability. The principal limitations, however, include a lack of control over

specific aspects of the social situation, increased variation in the social stimulus

presented to participants, and greater inferences about the explicit goals of

participants (as opposed to asking them directly).

Much more commonly (see Erdley & Asher, 1999, for review), children are

presented with hypothetical vignettes describing some imagined social

situation/context. In response to those hypothetical situations, children are then

asked either to describe or select social goals. This frequently used approach (e.g.,

Crick & Dodge, 1996; Erdley & Asher, 1996; Lochman et al., 1993; Rabiner & Gordon, 1992; Renshaw & Asher, 1983) "enables researchers to make controlled comparisons between children, inasmuch as each child encounters the same social situations" (Rose & Asher, 1999, p. 70). Control over provocation type, in particular, will be important for the proposed investigation. Provocation types (e.g., instrumental, relational) have been demonstrated to be of importance in differentiating aggressive children in terms of their social information processing (e.g., Crick, 1995; Crick et al., 2002) and will need to be controlled. Therefore, the proposed investigation will employ hypothetical situations to elicit social goals.

There is no generally agreed upon typology for hypothetical situations when assessing social goals, particularly with respect to childhood aggression. However, Erdley and Asher (1999), in their review of research on social goals and social competence, note that "three [hypothetical] tasks have been studied most intensively with regard to children's goals and behavioral strategies: ambiguous provocation, interpersonal conflict, and social failure" (p. 158). Erdley and Asher go on to describe ambiguous situations as ones in which "harm is caused to the child, but it is not clear whether the peer caused the harm on purpose or by accident" (p. 158). Two groups of researchers have specifically investigated aggressive children's social goal differences in ambiguous situations (Erdley & Asher, 1996; Lochman et al., 1993).

In contrast, Erdley and Asher (1999) describe conflict situations as involving clear and intentional differences, stating that "[c]onflicts may involve issues such as the possession and use of objects; social intrusiveness; or disagreements over ideas,

facts, or beliefs" (p.159). Social goal differences in aggressive children in conflict situations have been studied by multiple authors (Chung & Asher, 1996; Crick & Dodge, 1996; Rose & Asher, 1999).

Last, Erdley and Asher (1999) describe social failure situations as reflecting "[f]ailed attempts at initiating interactions…[including] being either rejected or ignored" (p. 160). Social goal differences in social failure situations have been repeatedly studied by Erdley and colleagues (e.g., Erdley, Cain, Loomis, Dumas-Hines, & Dweck, 1997; Erdley & Pietrucha, 1995; see Erdley & Asher, 1999, for review). However, no researchers, to date, have investigated more than one of these three situation types in a single study. Each of these three situation types (i.e., ambiguous, conflict, social failure) appears important for assessing goals across various forms and functions of aggression.

As noted above, associations of aggression group status with various social goals requires clarification for both ambiguous situations (e.g., Lochman et al., 2003) and conflict situations (e.g., Crick & Dodge, 1996). In addition, relational aggression is frequently defined in terms of social failure (see Crick et al., 1999, for review). For example, relational aggression may include excluding others from joining one's group (cf. Crick & Grotpeter, 1995), which appears to be consistent with Erdley and Asher's (1999) meaning of social failure. This overlap or similarity is suggestive that relational aggression may be particularly evident in social failure situations. Therefore, the proposed investigation will include each of Erdley and Asher's (1999) three social situation types: ambiguous, conflict, social failure. In addition, both

overt and relational contexts have differentiated the social information processing

(i.e., intent attributions, emotional distress) of overtly and relationally aggressive

children from their nonaggressive peers (e.g., Crick, 1995; Crick et al., 2002).

Therefore, both overt and relational examples of each of Erdley and Asher's (1999)

three contexts will be included in the proposed investigation.

With respect to measuring social goals, particularly as they relate to

childhood aggression, there is no clear consensus on which or how many social goals

should be used. However, researchers have demonstrated that multiple social goals

may be in effect simultaneously for individuals in various social contexts (e.g.,

Chulef, Read, & Walsh, 2001; Ohbuchi & Tedeschi, 1997; Renshaw & Asher, 1983).

Therefore, it appears that there is a need to assess more than one social goal in any

situation and that rating social goals is preferable to ranking them in terms of being

able to evaluate simultaneous preferences for multiple social goals.

Consideration of multiple social goals appears warranted, but which

particular goals? As noted earlier, Erdley and Asher (1999) observed in their review

that the social goals of dominance (Lochman et al., 1993; Renshaw & Asher, 1983;

Rose & Asher, 1999; Slaby & Guerra, 1988), revenge (Erdley & Asher, 1996;

Lochman et al., 1993; Renshaw & Asher, 1983; Rose & Asher, 1999; Slaby &

Guerra, 1988), affiliation (Lochman et al., 1993; Renshaw & Asher, 1983), and

avoidance (Lochman et al., 1993; Renshaw & Asher, 1983) each appear significantly

related to indices of social competence, including aggression. Moreover, those four

social goals roughly reflect Renshaw and Asher's (1983) theoretical and two-

dimensional approach to social goals (i.e., friendliness and assertiveness). Renshaw and Asher's two-dimensional model was further amplified by Lochman and colleagues (1993) in their investigation of dominance, revenge, affiliation, and avoidance. Therefore, the proposed investigation will include each of the four noted social goals: dominance, revenge, affiliation, and avoidance.

Children will rate each goal on a Likert-type scale, rather than rank available goals, as more than one social goal may be operating simultaneously (e.g., Chulef et al., 2001; Ohbuchi & Tedeschi, 1997; Renshaw & Asher, 1983). Likert-type rating of social goals is generally used by social goals researchers (e.g., Erdley & Asher, 1996; Lochman et al., 1993; Rose & Asher, 1999). In contrast to rating, ranking social goals may force an artificial ordering of social goals. However, this may not be cause for serious concern. Lochman and colleagues (1993) found parallel patterns of social goal preference differences between aggressive and nonaggressive participants for both preference rating and preference ranking, suggesting that concerns over rating/ranking may be more theoretical than empirical. Nevertheless, social goal preference ratings will be used in the proposed investigation. Social goal preference ranking data (i.e., "most important goal"; cf., Lochman et al., 1993) will additionally be collected in the proposed investigation (Appendix B), though ranking data will only be analyzed if rating data fails to demonstrate sufficient variability for hypothesis testing.

Gender differences in the social goals of dominance, revenge, affiliation, and avoidance have been initially, but inconsistently, demonstrated (Chung & Asher,

1996; Rose & Asher, 1999). More specifically, Chung and Asher (1996) found in fourth through sixth graders that boys in general endorsed more control (dominance) goals and fewer avoidance goals than did girls. No gender differences in relationship-maintenance (affiliation) goals were found by Chung and Asher (1996). However, Rose and Asher (1999) demonstrated a somewhat different pattern of gender differences in social goal preference than was found in Chung and Asher (1996). More specifically, Rose and Asher (1999) found higher ratings for retaliation (revenge) and instrumental/control (dominance) goals and lower ratings for relationship-maintenance (affiliation) goals by fourth- and fifth-grade boys than by their female peers. Avoidance goals were not examined by Rose and Asher (1999). Taken together, a relative male preference for dominance goals is suggested.

There are, however, limits to generalizing the gender differences found in Chung and Asher (1996) and Rose and Asher (1999). Aggression status was not specifically investigated in either study. Instead, coercive control strategies (e.g., "I would grab the puzzle piece back"; Chung & Asher, 1996, p. 131) and poor psychosocial adjustment (e.g., lacking friends, poor friendship quality; Rose & Asher, 1999) were examined. Therefore, it remains to be seen if dominance-goal gender differences (i.e., endorsed more by boys than by girls) will be observed within the context of assessing aggression. In addition, both studies involved only conflict situations, and it remains to be seen if gender differences will emerge for broad social goal preferences across multiple contexts (i.e., ambiguous, conflict, and social failure).

Research Questions, Design, and Hypotheses

In summary, the present investigation was concerned with how aggression and social goals are related. Preliminary research suggests that differentiating aggression in terms of form and function dimensions may clarify demonstrated associations between aggression and social goals (e.g., Crick & Dodge, 1996; Delveaux & Daniels, 2000; Demby, 2001; Little, Brauner, et al., 2003). The primary purpose of the proposed investigation was to examine associations between social goals and aggression dimensions by distinguishing aggression in terms of form and function dimensions, but in a manner that minimizes confounding the form and function dimensions. The secondary purpose of the proposed investigation was to examine the prediction of social goals on the basis of specific aggression forms, functions, and form-function interactions.

Two broad research questions were addressed. First, what associations exist between gender, specific forms and functions of aggression, and social goal preferences? Second, to what extent do gender, specific forms of aggression, and specific functions of aggression add to the prediction of select social goals?

The proposed investigation used a correlational design to answer the two central research questions. Associations between gender, aggression forms, aggression functions, and social goals were evaluated with Pearson correlations. Differential predictions of social goals were evaluated using hierarchical regressions,

with gender, aggression forms, and aggression functions as predictor variables and with social goals as criterion variables.

Hypotheses

1. *Aggression Forms and Social Goal Preferences.* It was hypothesized that specific aggression forms would be significantly associated with specific social goal preferences and that aggression forms would differ from one another in the degree to which they were uniquely predictive of specific social goal preferences. More specifically, the following were hypothesized:

   a) *Overt Aggression and Dominance Goal Preference.* It was hypothesized that overt aggression would be positively and significantly associated with dominance goal preference.

   b) *Relational Aggression and Revenge Goal Preference.* It was hypothesized that relational aggression would be positively and significantly associated with revenge goal preference.

   c) *Unique Overt Prediction of Dominance Goal Preference.* It was hypothesized that overt aggression would significantly add to the prediction of dominance above and beyond the contributions of both gender and relational aggression. A hierarchical regression was planned to test this hypothesis.

   d) *Unique Relational Prediction of Revenge Goal Preference.* It was hypothesized that relational aggression would significantly add to the

prediction of revenge above and beyond the contributions of both gender and overt aggression. A hierarchical regression was planned to test this hypothesis.

2. *Aggression Functions and Social Goal Preferences.* It was hypothesized that specific aggression functions would be significantly associated with specific social goal preferences and that aggression functions would differ from one another in the degree to which they were uniquely predictive of specific social goal preferences. More specifically, the following were hypothesized:

a) *Proactive Aggression and Dominance Goal Preference.* It was hypothesized that proactive aggression would be positively and significantly associated with dominance goal preference.

b) *Reactive Aggression and Revenge Goal Preference.* It was hypothesized that reactive aggression would be positively and significantly associated with revenge goal preference.

c) *Unique Proactive Prediction of Dominance Goal Preference.* It was hypothesized that proactive aggression would significantly add to the prediction of dominance above and beyond the contributions of both gender and reactive aggression. A hierarchical regression was planned to test this hypothesis.

d) *Unique Reactive Prediction of Revenge Goal Preference.* It was hypothesized that reactive aggression would significantly add to the prediction of revenge above and beyond the contributions of both

gender and proactive aggression. A hierarchical regression was planned to test this hypothesis.

3. *Aggression Form-Function Combinations and Social Goal Preferences.* It was hypothesized that specific and significant aggression form-function interaction effects would be demonstrated with respect to prediction of social goal preferences. More specifically, the following were hypothesized:

a) *Unique Overt-Proactive Prediction of Dominance.* It was hypothesized that the interaction of overt and proactive aggression would significantly add to the prediction of dominance above and beyond the contributions of gender, overt aggression, and proactive aggression. A hierarchical regression was planned to test this hypothesis.

b) *Unique Relational-Reactive Prediction of Revenge.* It was hypothesized that the interaction of relational and reactive aggression would significantly add to the prediction of revenge above and beyond the contributions of gender, relational aggression, and reactive aggression. A hierarchical regression was planned to test this hypothesis.

CHAPTER 2

METHODOLOGY

Participants

Participants were fifth-grade students from three different northern Illinois elementary schools, one of which participated two consecutive years. Two hundred six participants had parental consent and assented to participate in the study; the overall consent rate was 76%. Attrition came from two sources: classrooms with participation rates below 60% (i.e., excluded classrooms, $n = 5$ classrooms; $n = 39$ students) and children terminating participation ($n = 11$). Data were drawn from 11 classrooms with participation rates above 60% (i.e., included classrooms; average 14.18 participants per class).

Data were analyzed from 156 participants, whose mean age was 131.05 months ($sd = 3.63$ months; range = 124 to 136 months); 55.1% were male ($n = 86$) and 44.9% were female ($n = 70$). Participants were overwhelmingly Caucasian (85.9%, $n = 134$) in ethnicity, with limited Asian (4.5%, $n = 7$), Hispanic (2.6%, $n = 4$), African American (1.3%, $n = 2$), Native American (0.6%, $n = 1$), combined races (3.2%, $n = 5$), or other (1.9%, $n = 3$) participation. Participants' racial distribution was roughly reflective of the racial distributions of participating schools.

The ratio of male to female participants was higher in excluded classrooms (i.e., participation rates below 60%; 26 male, 13 female) relative to included classrooms (i.e., participation rates above 60%; 86 male, 70 female). No additional demographic differences were demonstrated between participants in excluded classrooms relative to their peers in included classrooms.

Materials

Peer-Nomination Measure: Prosocial and Aggressive Behaviors

The peer-nomination measure of prosocial and aggressive behaviors (Appendix A) is a 20-item measure with five subscales (i.e., Prosocial, Overt, Relational, Proactive, Reactive), each of which contains four items. Participants rated each participating classmate within their classroom (i.e., "[S]he is the kind of person who..."; self-ratings were excluded from analyses) on a five-point Likert-type scale on how much each item was true for that classmate. Ratings for each participant were summed, averaged, and standardized by classroom.

Prosocial items were presented in a fixed order (i.e., items 1, 6, 11, 16; Appendix A) to guard against the development of a purely negative mental set on the part of participants. The remaining 16 aggression-content items were presented in one of two randomized orders. Roughly equivalent numbers of participants were administered each randomized order (i.e., 50.6% and 49.4%).

Aggression items (Appendix A) consisted of eight aggression form items (i.e., Overt, Relational; four items each) and eight aggression function items (i.e., Proactive, Reactive; four items each). Examples of each subscale are as follows: Prosocial (e.g., "...has a good sense of humor"), Overt (e.g., "...hits, kicks, or punches others"), Relational (e.g., "...keeps others from being in her/his group of friends"), Proactive (e.g., "...threatens and bullies others"), and Reactive (e.g., "...when teased, strikes back"). Aggression form items were drawn from previously validated measures of overt and relational aggression (i.e., Crick, 1995, 1996; Crick & Grotpeter, 1995; Little, Jones, et al., 2003). Similarly, aggression function items were drawn from previously validated measures of proactive and reactive aggression (i.e., Brown et al., 1996; Dodge & Coie, 1987; Little, Jones, et al., 2003).

Individual aggression items with the highest factor loading on their respective aggression subscales were selected for inclusion in the present subscales, with one exception. Specifically, the Dodge and Coie (1987) proactive aggression item, "uses physical force to dominate," was simply omitted from the present scale because it specified a specific social goal (i.e., dominance). Several items in the present subscales were minimally modified to guard against providing "function" information in "form" items, and vice versa. For example, the item, "children who, when they are mad at a person, get even by keeping that person from being in their group of friends" (Crick, 1995, p. 316), was changed to, "(S)he is the kind of person who... keeps others from being in her/his group of friends." The removal of the

reference to anger was intended to minimized reference to reactive aggression (i.e., function). Other items were similarly modified.

<div align="center">Self-Report Measure: Social Goal Preferences</div>

Social goals were assessed through responses to six hypothetical vignettes, including two ambiguous, two conflict, and two social failure situations (Appendix B). Categories of vignettes (i.e., ambiguous, conflict, and social failure) were derived from prior research (see Erdley & Asher, 1999, for review). One overt and one relational example of each vignette category were included (Sumrall et al., 2000).

Two vignettes (ambiguous-overt, conflict-overt) have been used in prior research (cf., Lochman et al., 1993; Renshaw & Asher, 1983, respectively). Two other vignettes (ambiguous-relational, social failure-relational) reflected minor modifications of previously used vignettes (e.g., making one's exclusion from a party less explicitly conflictual; cf., Crick, 1995; Sumrall et al., 2000, respectively). One vignette (social failure-overt) reflected a previously researched overt provocation item modified to emphasize social failure rather than either ambiguity or conflict (i.e., no one helps you pick up the books knocked down; cf., Lochman et al., 1993).

Last, one original vignette (conflict-relational) was generated specifically for the proposed investigation, though it combines conflict elements from previous research (e.g., last piece of playground equipment, excluded from party; cf., Crick, 1995; Renshaw & Asher, 1983). The need for an original vignette was demonstrated

in pilot research in which previously reported relational conflict situations (e.g.,

Crick, 1995; Sumrall et al., 2000) were found to reflect social failure rather than

conflict.

In response to each of the six hypothetical vignettes, participants indicated

how important they found each of the four provided social goals (Appendix B),

including dominance ("let that classmate know you're much more important than

s/he thinks"), revenge ("get back at that classmate"), affiliation ("work things out and

get to know that classmate better"), and avoidance ("get away from what you don't

like as soon as possible"). As with the hypothetical situations, the wording for each

of the social goals either was used in prior research (e.g., revenge; cf. Lochman et al.,

1993) or was modified to apply to the variety of social situations being investigated

in the proposed study (i.e., they apply across ambiguous, conflict, and social failure

situations; see Erdley & Asher, 1999, for review). All vignettes and social goals

were piloted with a small group of expert graduate student raters ($n = 10$), as well as

with a small group of fourth- through sixth-grade children ($n = 10$), for

appropriateness (i.e., do the hypothetical situations reflect ambiguous, conflict, or

social failure situations for fifth graders; were the situations and social goals realistic

and possible for fifth graders?).

Participants rated the importance of each goal on a four-point Likert-type

scale, ranging from "not at all" to "extremely" (Appendix B). After assigning all

social goal ratings for each social goal in each situation, participants reviewed the six

hypothetical situations and indicated which of the four social goals was the "most

important" goal in each situation (Appendix B). Ratings for each social goal type (e.g., affiliation) across all six hypothetical situations were summed and divided by six to create an average preference rating score for each social goal (e.g., affiliation). Each of the four social goal preference scores (i.e., one average preference score each for dominance, revenge, affiliation, and avoidance) were determined in this manner. The presentation order of the hypothetical situations was randomized.

Procedure

Participants were recruited through public elementary schools in northern Illinois. First, school principals were contacted and the study was explained to them by the primary researcher. Following principal approval, fifth-grade teachers were provided a description of the study. Participating teachers were provided a brief overview of the purpose, method, and anticipated benefits of the proposed study, along with a parental consent form (Appendix C) to be sent home with students and returned after completion. Students who obtained parental consent were provided the opportunity to participate following the completion of a child assent form (Appendix D). Students who did not assent to participate engaged in an alternate educational activity outside of the classroom (e.g., media center).

Participating students were provided with the study measures and oral instructions for their completion. The primary researcher and graduate students in psychology were available for answering questions. The primary researcher and graduate student assistants also checked completed measures to ensure that one

response was provided to each item. Participants were instructed to correct

omissions or errors. When all measures were completed, the primary researcher

discussed how to appropriately handle socially aggressive situations and engaged

students in distraction tasks (Appendix E).

CHAPTER 3

RESULTS

Overview of Analytic Strategy

The present results included preliminary and primary analyses. During

preliminary analyses, each of the primary measures (Appendices A and B) was

evaluated for its underlying factor structure through principal components analysis

(PCAs). Multiple PCAs were performed on the peer-nominated measure of prosocial

and aggressive behaviors to clarify the factor structure of aggression items. Internal

consistencies of subscales of the primary measures were evaluated with Cronbach's

alphas (α) and with interitem Pearson correlations within subscales. Pearson

correlations among subscales were also evaluated.

Primary analyses included both Pearson correlations and multiple hierarchical

regressions. Pearson correlations among gender and subscales of primary measures

were evaluated. Four hierarchical regressions were conducted, each with gender as a

predictor (entered at the first step) and revenge goal preference as the criterion, to

evaluate the unique contribution of variables in the prediction of revenge goals. The

predictor entered at the second and third steps varied for each hierarchical regression.

In the first regression, Overt aggression was entered in the second step and Relational

aggression in the third step. In the second regression, Relational aggression was

entered in the second step and Overt aggression in the third step. In the third

regression, Proactive aggression was entered in the second step and Reactive

aggression in the third step. In the last regression, Reactive aggression was entered

in the second step and Proactive aggression in the third step. The second and fourth

regressions were exploratory.

Preliminary Analyses

Peer-Nomination Measure: Prosocial and Aggressive Behaviors

Six principal component analyses (PCAs) were performed on the peer-

nomination measure of prosocial and aggressive behaviors (Appendix A) to

determine its factor structure. First, a PCA with two set factors and oblique rotation

was performed on the entire measure. A two-factor overall structure (i.e., prosocial

and aggressive factors) was obtained (see Table 1).

Second, a PCA on only the aggressive-content items (excluding all prosocial

items) with four set factors and oblique rotation was performed. A four-factor

structure (i.e., Overt, Relational, Proactive, Reactive) was generally not confirmed

(see pattern matrix; Table 2). Specifically, all Proactive-content items and three

Overt-content items loaded on a single factor (factor 1). The remaining Overt-

content item loaded equivalently on the first and fourth factors. Relational-content

items loaded on the two remaining factors (factors 2 and 3). Reactive-content items

loaded across all four factors. Notably, the fourth factor contained only a single item

Table 1

Principal Components Analysis of Peer-Nomination Measure (Two Set Factors)

Item	Component	
	1	2
Prosocial Subscale		
Gets along well with others	-.471	.543
Has a good sense of humor	-.248	.742
You like to spend a lot of time with	-.210	.753
Is well liked by other kids	-.324	.669
Overt Subscale		
Hits, kicks, or pushes others	.828	.195
Gets into physical fights with others	.832	.181
Insults others to their face	.760	.046
Pushes and shoves others around	.843	.138
Relational Subscale		
Ignores others or stops talking to them	.681	.043
Tells her/his friends to stop liking someone	.730	.029
Tells others (s)he won't be their friend anymore	.703	-.100
Keeps others from being in her/his group of friends	.748	-.050

Table 1 (continued)

Item	Component	
	1	2
Proactive Subscale		
Threatens and bullies others	.792	.122
Gets others to gang up on a peer	.780	.108
Plays mean tricks	.860	.126
Picks on smaller kids	.799	.141
Reactive Subscale		
When teased, strikes back	.730	.135
Blames others in conflicts	.783	-.058
Overreacts angrily to accidents	.773	-.004
Who is a poor loser	.722	-.064

Table 2

Principal Components Analysis of Aggression Items (Four Set Factors; Pattern

Matrix)

Item	Component			
	1	2	3	4

Overt Subscale

Hits, kicks, or pushes others	.876	-.116	.090	.090
Gets into physical fights with others	.923	-.062	-.005	.044
Insults others to their face	.448	.198	.050	.459
Pushes and shoves others around	.802	.220	-.122	.005

Relational Subscale

Ignores others or stops talking to them	-.019	.086	.852	.082
Tells her/his friends to stop liking someone	.308	.156	.555	-.267
Tells others (s)he won't be their friend anymore	-.054	.801	.205	-.059
Keeps others from being in their group of friends	.254	.546	.215	-.239

Proactive Subscale

Threatens and bullies others	.808	-.112	.100	.125
Gets others to gang up on a peer	.675	.142	.118	-.171
Plays mean tricks	.759	.135	.068	-.044

(continued on following page)

Table 2 (continued)

Item	Component			
	1	2	3	4
Picks on smaller kids	.805	.174	-.090	-.105
Reactive Subscale				
When teased, strikes back	.502	-.078	.364	.178
Blames others in conflicts	.275	.389	.182	.270
Overreacts angrily to accidents	.138	.345	.329	.425
Who is a poor loser	.159	.725	-.097	.236

whose interpretability was at least fair (i.e., factor loading > .45; Tabachnick &

Fidell, 1996). Therefore, a three-factor solution was examined.

A second PCA on only the aggressive-content items (excluding all prosocial

items), with three set factors and oblique rotation, was performed to evaluate the fit

of a three-factor solution. The resulting three-factor solution revealed (see pattern

matrix; Table 3) that while the first factor was well established (i.e., all Overt-content

items, three Proactive-content items, and one Reactive-content item), the two

additional factors remained problematic. Specifically, the second and third factors

each contained only two items with factor loadings higher than .48. However, two-

item factors are problematic for reasons of reliability and internal consistency

(Tabachnick & Fidell, 1996). Consequently, a three-factor solution also appeared to

inadequately represent the present data.

A third PCA on only the aggressive items with two set factors and oblique

rotation was performed to clarify the factor structure of the present data. A two-

factor solution was obtained (see pattern matrix; Table 4). Specifically, all Overt-

content items, three Proactive-content items, and one Reactive-content item loaded

on the first factor, roughly reflective of "general aggression." All Relational-content

items loaded on the second factor (i.e., was identical to the anticipated Relational

aggression scale). The remaining Proactive-content item and Reactive-content items

all loaded roughly equivalently on both factors.

Overall, when evaluating all aggression items simultaneously, the present

data failed to demonstrate either the anticipated four-factor aggression solution (i.e.,

Table 3

Principal Components Analysis of Aggression Items (Three Set Factors; Pattern Matrix)

Item	Component		
	1	2	3

Overt Subscale

Hits, kicks, or pushes others	.920	-.138	.056
Gets into physical fights with others	.928	-.080	-.001
Insults others to their face	.824	.117	-.149
Pushes and shoves others around	.800	.183	-.055

Relational Subscale

Ignores others or stops talking to them	.102	-.043	.792
Tells her/his friends to stop liking someone	.132	.105	.715
Tells others (s)he won't be their friend anymore	-.010	.688	.351
Keeps others from being in their group of friends	.121	.473	.430

Proactive Subscale

Threatens and bullies others	.882	-.137	.045
Gets others to gang up on a peer	.542	.113	.254
Plays mean tricks	.721	.098	.140

(continued on following page)

Table 3 (continued)

Item	Component		
	1	2	3
Picks on smaller kids	.712	.149	.028
Reactive Subscale			
When teased, strikes back	.644	-.127	.265
Blames others in conflicts	.531	.294	.103
Overreacts angrily to accidents	.526	.232	.149
Who is a poor loser	.408	.617	-.102

Table 4

Principal Components Analysis of Aggression Items (Two Set Factors; Pattern

Matrix)

	Component	
Item	1	2

Overt Subscale

Hits, kicks, or pushes others[a]	.957	-.099
Gets into physical fights with others[a]	.952	-.090
Insults others to their face[a]	.805	-.022
Pushes and shoves others around[a]	.772	.117

Relational Subscale

Ignores others or stops talking to them[b]	.133	.639
Tells her/his friends to stop liking someone[b]	.141	.679
Tells others (s)he won't be their friend anymore[b]	-.125	.937
Keeps others from being in her/his group of friends[b]	.050	-.796

Proactive Subscale

Threatens and bullies others[a]	.919	-.106
Gets others to gang up on a peer[c]	.536	.305
Plays mean tricks[a]	.715	.196

(continued on following page)

Table 4 (continued)

Item	Component	
	1	2
Picks on smaller kids[a]	.693	.153
Reactive Subscale		
When teased, strikes back[a]	.684	.086
Blames others in conflicts[c]	.486	.354
Overreacts angrily to accidents[c]	.493	.333
Who is a poor loser[c]	.293	.495

[a]Factor 1 ("General aggression"). [b]Factor 2 ("Relational aggression"). [c]Item excluded from both factor 1 and factor 2.

Overt, Relational, Proactive, Reactive) or a two-factor aggression solution consistent

with the broad form/function distinction (i.e., Overt and Relational versus Proactive

and Reactive). In contrast, prior research has consistently demonstrated two-factor

solutions to both forms and functions of aggression, though typically when form and

function items are evaluated separately (e.g., Day et al., 1993; Dodge & Coie, 1987;

Dodge et al., 1997; Waschbusch et al., 1998; see Crick, 1999, for review).

Simultaneously evaluating all aggression items may have facilitated the failure to

replicate prior research findings.

Two additional PCAs, each with two set factors and oblique rotations, were

conducted to examine the possibility that distinct types of forms and functions of

aggression would be demonstrated when analyzed within the dimensions of form and

function separately. One PCA was performed on the eight aggression form items

(i.e., Overt, Relational; Table 5) and a second on the eight aggression function items

(i.e., Proactive, Reactive; Table 6). The anticipated two-factor structure for

aggression forms (i.e., Overt, Relational) was clearly demonstrated (Table 5). That

is, all Overt-content items demonstrated excellent factor loadings on the first factor

(i.e., Overt aggression), whereas all Relational-content items demonstrated very good

to excellent loadings on the second factor (i.e., Relational aggression).

With respect to aggression function, the anticipated two-factor structure for

aggression functions (i.e., Proactive, Reactive) was generally demonstrated. That is,

all Proactive-content items demonstrated excellent factor loadings on the first factor

(i.e., Proactive aggression; Table 6). Moreover, three of four Reactive-content items

Table 5

Principal Components Analysis of Aggression Form Items (Two Set

Factors; Pattern Matrix)

Item	Component	
	1	2
Overt subscale		
Hits, kicks, or pushes others	.927	-.024
Gets into physical fights with others	.917	-.021
Insults others to their face	.826	.017
Pushes and shoves others around	.776	.144
Relational subscale		
Ignores others or stops talking to them	.085	.689
Tells her/his friends to stop liking someone	.064	.775
Tells others (s)he won't be their friend anymore	-.092	.897
Keeps others from being in her/his group of friends	.015	.830

Table 6

Principal Components Analysis of Aggression Function Items (Two Set

Factors; Pattern Matrix)

Item	Component	
	1	2
Proactive subscale		
Threatens and bullies others	.832	.009
Gets others to gang up on a peer	.888	-.056
Plays mean tricks	.836	.081
Picks on smaller kids	.818	.038
Reactive subscale		
When teased, strikes back	.435	.363
Blames others in conflicts	.320	.557
Overreacts angrily to accidents	.166	.712
Who is a poor loser	-.106	.966

Note: "When teased, strikes back" was removed from Reactive subscale.

demonstrated either good or excellent factor loadings on the second factor (i.e.,

Reactive aggression; Table 6). The Reactive-content item, "when teased, strikes

back," loaded roughly equivalently on the two factors. Consequently, the item was

removed from the Reactive subscale in subsequent analyses.

In short, when analyzed separately by form and by function, aggression items

generally demonstrated the anticipated factor structures. That is, Overt and

Relational aggression factors emerged when looking only at "form" items, and

Proactive and Reactive factors emerged when only "function" items were used in the

PCA.

The peer-nomination measure of prosocial and aggressive behaviors

demonstrated adequate internal consistency across both anticipated and empirically

derived subscales. Cronbach's alpha (α) for each aggression subscale ranged from

.799 to .936 (Table 7). Within each subscale, all interitem correlations were

moderate and significant, $p < .01$ (Table 7).

Bivariate correlations between subscales were significant, $p < .01$, and in

expected directions (Table 8). The Prosocial subscale was negatively correlated with

the four aggression subscales; all four aggression subscales were positively correlated

with one another. Given the pervasive item duplication with both Overt and

Proactive aggression, correlations for General aggression were not evaluated. The

item-level correlations matrix is presented in Appendix F.

Overall, the peer-nomination measure of prosocial and aggressive behaviors

demonstrated adequate internal consistency but inconsistent subscale differentiation.

Table 7

Internal Consistencies and Interitem Correlations of Peer-

Nominated Subscales

Subscales	Cronbach's alpha	Interitem correlation range (average)
Prosocial	.732[a]	.381 - .450 (.413)
Overt	.898[a]	.612 - .781 (.691)
Relational	.826[a]	.472 - .608 (.545)
Proactive	.882[a]	.600 - .711 (.651)
Reactive	.799[b]	.548 - .608 (.571)
General	.936[c]	.523 - .788 (.661)

Note: For Overt and General subscales, removal of one item (Overt, "insults others to their face"; General, "when teased, strikes back") would have marginally improved internal consistency (Overt, $\alpha = .901$; General, $\alpha = .937$). However, the items were retained in both subscales. For the Reactive subscale, the item, "when teased, strikes back," was omitted. [a]$n = 4$. [b]$n = 3$. [c]$n = 8$.

Table 8

Intercorrelations Among Peer-Nominated Subscales

Subscale	1	2	3	4	5
1. Prosocial	--	-.483	-.581	-.422	-.487
2. Overt		--	.748	.929	.791
3. Relational			--	.754	.696
4. Proactive				--	.773
5. Reactive					--

Note: For all correlations, $p < .01$ and $n = 156$. Reactive subscale omitted the item, "when teased, strikes back."

Specifically, differentiation was evidenced for broad prosocial and aggressive factors. However, within the broad aggression factor, the anticipated four-factor structure of aggression (i.e., Overt, Relational, Proactive, Reactive) was not demonstrated when items were evaluated simultaneously. Instead, a two-factor solution of aggression (i.e., General, Relational) best represented the structure of the present data and approximated the aggression form distinction of Overt and Relational aggression. Differentiation of subscales within forms (i.e., Overt, Relational) and within functions (i.e., Proactive, Reactive) was evidenced when form

and function subscales were evaluated separately, in a manner consistent with prior

research on aggression forms and functions.

Self-Report Measure: Social Goal Preferences

A principal component analysis (PCA), with four set factors and oblique

rotation, was performed on the self-report measure of social goal preferences

(Appendix B) to determine its factor structure. The anticipated four-factor structure

was demonstrated (i.e., affiliation, avoidance, dominance, revenge; Table 9).

The self-report measure of social goal preferences demonstrated good internal

consistency across anticipated subscales (i.e., social goals). Cronbach's alpha (α) for

each social goal across the six hypothetical situations ranged from .824 to .904

(Table 10). Within each social goal, all interitem correlations were moderate and

significant ($p < .01$, Table 10), as would be anticipated for potentially divergent

social contexts reflected in the hypothetical situations.

Bivariate correlations of average (across six hypothetical situations)

standardized (z-transformed) social goal preferences are presented in Table 11. In

sum, Dominance was positively and significantly correlated with Affiliation,

Avoidance, and Revenge. Affiliation was negatively and significantly associated

with Revenge, while the positive association between Avoidance and Revenge

merely approached significance. Affiliation and Avoidance were not significantly

correlated (Table 11).

Table 9

Principal Components Analysis of Social Goal Preferences

Item	Component			
	1	2	3	4

Affiliation subscale

Water fountain, overhear whisper, laugh	-.118	.774	-.088	.000
Playground equipment, party no invite	.038	.741	-.086	-.019
Bathroom, party, not invited	.118	.737	.141	.093
Watch cartoon, changes channel	.036	.624	.016	-.104
Bumps bag, books fall, no one helps	.084	.781	-.022	.001
Bumps shoulder, knocks books to floor	-.027	.599	.053	-.190

Avoidance subscale

Water fountain, overhear whisper, laugh	-.054	-.001	.778	-.105
Playground equipment, party no invite	.036	-.062	.780	-.010
Bathroom, party, not invited	-.003	.083	.777	.015
Watch cartoon, changes channel	-.049	.091	.786	.148
Bumps bag, books fall, no one helps	-.012	-.051	.749	.039
Bumps shoulder, knocks books to floor	.125	-.076	.737	-.041

(continued on following page)

Table 9 (continued)

Item	Component			
	1	2	3	4

<u>Dominance subscale</u>

Item	1	2	3	4
Water fountain, overhear whisper, laugh	.805	-.056	-.046	.010
Playground equipment, party no invite	.900	-.087	.034	-.099
Bathroom, party, not invited	.791	.164	-.014	.134
Watch cartoon, changes channel	.755	.077	.087	.067
Bumps bag, books fall, no one helps	.834	-.045	.038	-.038
Bumps shoulder, knocks books to floor	.805	.099	-.046	-.033

<u>Revenge subscale</u>

Item	1	2	3	4
Water fountain, overhear whisper, laugh	.099	-.235	-.050	.632
Playground equipment, party no invite	-.001	-.092	-.029	.728
Bathroom, party, not invited	-.006	-.001	-.052	.833
Watch cartoon, changes channel	-.065	.101	.119	.813
Bumps bag, books fall, no one helps	.131	-.180	.012	.648
Bumps shoulder, knocks books to floor	-.035	.061	.011	.763

Table 10

Internal Consistencies and Interitem Correlations of Self-

Reported Social Goals

Social Goal	Cronbach's alpha (α)	Inter-item correlations range (average)
Affiliation	.824	.363 - .509 (.439)
Avoidance	.864	.423 - .611 (.516)
Dominance	.904	.496 - .681 (.613)
Revenge	.852	.353 - .580 (.497)

Note: For all social goals, retention of all items resulted in the highest internal consistency. For all correlations, $p < .01$.

Table 11

Intercorrelations Among Social Goals

Social Goal	1	2	3	4
1. Affiliation	--	.046[c]	.174[a]*	-.464[b]**
2. Avoidance		--	.248[a]**	.152[b]†
3. Dominance			--	.161[a]*
4. Revenge				--

[a]$n = 154$. [b]$n = 155$. [c]$n = 156$.

†$p < .10$. *$p < .05$. **$p < .01$.

Overall, the self-report measure of social goal preferences demonstrated a four-factor structure and good internal consistency, as assessed through Cronbach's alphas and intercorrelations. Finally, means and standard deviations, both nonstandardized and standardized, for all social goals and the four aggression subscales are summarized in Table 12. Though moderately skewed, the present sample size plus adequate variation among the variables of interest, in combination, suggest that the present data do not require transformation beyond standardization (i.e., z-transformation; Tabachnick & Fidell, 1996).

Table 12

Summary of Variable Means and Standard Deviations

Variable	*n*	Nonstandardized Mean (SD)	Standardized Mean (SD)
Affiliation	156	2.78 (.78)	.00 (1.00)
Avoidance	156	2.04 (.79)	.00 (1.00)
Dominance	154	2.09 (.92)	.00 (1.00)
Revenge	155	1.48 (.63)	.00 (1.00)
Overt	156	1.57 (.58)	.00 (.96)
Relational	156	1.62 (.39)	.00 (.96)
Proactive	156	1.46 (.45)	.00 (.96)
Reactive	156	1.80 (.54)	.00 (.96)

Note: For the Reactive subscale, the item, "when teased, strikes back," was omitted.

Primary Analyses

Pearson correlations and multiple hierarchical regressions were conducted to evaluate relationships between gender, aggression forms, aggression functions, and social goals. Correlations between gender, aggression subscales, and social goals are summarized in Table 13. Revenge was positively and significantly associated with all aggression dimensions, including, as hypothesized, both Relational and Reactive aggression. Revenge approached significance in its positive correlation with Gender (i.e., boys more likely than girls to prefer revenge). Contrary to hypotheses, Dominance was not significantly associated with any aggression dimension, including either Overt or Proactive aggression. Dominance was, however, positively and significantly associated with Gender (i.e., boys more likely than girls to prefer dominance). Neither Affiliation nor Avoidance was significantly correlated with any aggression dimension. Gender was positively and significantly associated with Overt, Proactive, and Reactive aggression. Notably, Gender was not significantly associated with Relational aggression. Last, all aggression dimensions were positively and significantly associated with one another.

Four planned hierarchical regressions could not be conducted. The aggression measure failed to demonstrate the anticipated four-factor solution (i.e., Overt, Relational, Proactive, Reactive) when all items were evaluated simultaneously. Also, aggression function subscales demonstrated a differentiated factor structure only when evaluating aggression function items without the addition

Table 13

Intercorrelations Among Gender and Subscales

Variable	1	2	3	4	5	6	7	8	9
1. Gender	--	.009	-.019	.199*[a]	.154[tb]	.451**	.094	.439**	.379**
2. Affiliation		--	.046	.174*[a]	-.464**[b]	.002	-.043	-.037	-.006
3. Avoidance			--	.248**[a]	.152[tb]	.042	.063	.013	-.043
4. Dominance				--	.161*[a]	.089[a]	.023[a]	.106[a]	.067[a]
5. Revenge					--	.252**[b]	.245**[b]	.224**[b]	.184*[b]
6. Overt						--	.748**	.929**	.791**
7. Relational							--	.754**	.696**
8. Proactive								--	.773**
9. Reactive									--

Note: Unless otherwise noted, $n = 156$. Reactive subscale omitted the item, "when teased, strikes back."

[a]$n = 154$. [b]$n = 155$.

[t]$p < .06$. *$p < .05$. **$p < .01$.

of aggression form items. Last, the correlation between Overt and Proactive ($r = $

.929, $p < .01$; Table 13) was multicollinear. Therefore, unique prediction of social

goals (i.e., Revenge, Dominance) on the basis of form-function interactions (i.e.,

Relational by Reactive, Overt by Proactive) could not be evaluated. Also,

Dominance was not significantly correlated with planned regression predictors (i.e.,

Overt, Proactive; Table 13). Consequently, evaluation of unique Overt or Proactive

prediction of Dominance, even within form or function, was precluded.

In contrast, Revenge was positively and significantly correlated with Overt,

Relational, Proactive, and Reactive aggression and approached significance with

Gender (Table 13). The correlation between Overt and Relational was high ($r = $

.748, $p < .01$; Table 13) but was also reflective of the upper end of the correlations

previously demonstrated between Overt and Relational aggression (see Crick et al.,

1999, for review). Also, when only aggression form items were evaluated, as is

generally the case in prior research, Overt and Relational aggression demonstrated a

clear two-factor solution (Table 5). Similarly, though the correlation between

Proactive and Reactive was also high ($r = .773$, $p < .01$; Table 13), a two-factor

solution roughly consistent with prior research was demonstrated for Proactive and

Reactive aggression when only aggression function items were evaluated (Table 6).

Therefore, despite high correlations, regressions for aggression forms and functions

were evaluated, though only within form (Overt and Relational) and within function

(Proactive and Reactive). Also, subsequent evaluation of indices of multicollinearity

(e.g., Tolerance, Condition Index) demonstrated the appropriateness of reporting the select regression results.

Four hierarchical regressions were computed to evaluate whether individual aggression subtypes (within form, within function) provided additional information to the prediction of Revenge beyond the information afforded by Gender and by the remaining aggression form or function subtype (e.g., Relational for Overt, Proactive for Reactive). Two hierarchical regressions were planned and two were exploratory, to evaluate nonhypothesized results. Tables 14, 15, 16, and 17 display the unstandardized coefficients (B), their standard errors (SE), intercepts, and the standardized regression coefficients (β) after entry of the predictors at each step. In the first step, for each of the four hierarchical equations, the model including Gender approached significance in its prediction of Revenge, F $(1,153)$ = 3.73, p < .06, Adj. R^2 = .02. For all regressions, effect sizes were small (i.e., all Adj. R^2 and ΔR^2 < .08).

Two hierarchical regressions investigated the types of aggression forms in the prediction of the revenge goal. In the first of four hierarchical regressions (Table 14), Overt aggression was entered into the model before Relational aggression. It was hypothesized that Relational aggression would significantly add to the prediction of Revenge, above and beyond the contributions of Gender and Overt aggression. In the second step of the first regression, Gender and Overt aggression significantly predicted Revenge, F (2, 152) = 5.34, p < .01, Adj. R^2 = .05; however, only Overt aggression made a significant contribution to the equation, t (152) = 2.61. The addition of Overt aggression to the model resulted in a significant R square change

Table 14

Summary of Hierarchical Regression for Form Variables Predicting

Revenge

Variable	B	SE B	β	R
Step 1	--	--	--	.154
Gender	.309	.160	.154†	--
Step 2	--	--	--	.256
Gender	.100	.176	.050	--
Overt	.238	.091	.230*	--
Step 3	--	--	--	.280
Gender	.216	.193	.108	--
Overt	.065	.159	.063	--
Relational	.194	.134	.188	--

Note: $R^2 = .02$ for Step 1 ($p < .06$); $\Delta R^2 = .04$ for Step 2 ($p = .01$); $\Delta R^2 = .01$ for Step 3 ($p > .10$). For all analyses, $n = 154$.

†$p < .06$. *$p < .05$.

Table 15

Summary of Hierarchical Regression for Form Variables Predicting

Revenge

Variable	B	SE B	β	R
Step 1	--	--	--	.154
Gender	.309	.160	.154*	--
Step 2	--	--	--	.278
Gender	.265	.157	.132†	--
Relational	.214	.081	.233**	--
Step 3	--	--	--	.280
Gender	.216	.193	.108	--
Relational	.194	.134	.188	--
Overt	.065	.149	.063	--

Note: $R^2 = .02$ for Step 1 ($p < .06$); $\Delta R^2 = .05$ for Step 2 ($p < .01$); $\Delta R^2 = .00$ for Step 3 ($p > .10$). For all analyses, $n = 154$.

†$p < .10$. *$p < .06$. **$p < .01$.

Table 16

Summary of Hierarchical Regression for Function Variables Predicting

Revenge

Variable	B	SE B	β	R
Step 1	--	--	--	.154
Gender	.309	.160	.154†	--
Step 2	--	--	--	.232
Gender	.138	.176	.069	--
Proactive	.200	.091	.194*	--
Step 3	--	--	--	.233
Gender	.136	.177	.068	--
Proactive	.185	.133	.179	--
Reactive	.019	.125	.019	--

Note: $R^2 = .02$ for Step 1 ($p < .06$); $\Delta R^2 = .03$ for Step 2 ($p < .05$); $\Delta R^2 = .00$ for Step 3 ($p > .10$). For all analyses, $n = 154$.

†$p < .06$. *$p < .05$.

Table 17

Summary of Hierarchical Regression for Function Variables Predicting

Revenge

Variable	B	SE B	β	R
Step 1	--	--	--	.154
Gender	.309	.160	.154*	--
Step 2	--	--	--	.205
Gender	.197	.172	.098	--
Reactive	.146	.086	.146†	--
Step 3	--	--	--	.233
Gender	.136	.177	.068	--
Reactive	.019	.125	.019	--
Proactive	.185	.133	.179	--

Note: $R^2 = .02$ for Step 1 $(p < .06)$; $\Delta R^2 = .02$ for Step 2 $(p < .10)$; $\Delta R^2 = .01$ for Step 3 $(p > .10)$. For all analyses, $n = 154$.

†$p < .10$. *$p < .06$.

(.04), F (1, 152) = 6.81, p = .01. In the third step of the first regression, the model

including Gender, Overt aggression, and Relational aggression significantly predicted

Revenge, F (3, 151) = 4.29, p < .01, Adj. R^2 = .06. However, contrary to hypotheses,

the addition of Relational aggression to the model did not result in a significant R

square change. Moreover, no predictor made a significant contribution to the

equation, including, contrary to hypotheses, Relational aggression. The sequence of

the second and third steps were reversed (i.e., reversed order of Relational and Overt)

in the following regression for exploratory purposes.

In the second of four hierarchical regressions (Table 15), for exploratory

purposes, Relational aggression was entered into the model before Overt aggression.

In the second step of the second regression, Gender and Relational aggression

significantly predicted Revenge, F (2, 152) = 6.37, p < .01, Adj. R^2 = .07; however,

only Relational aggression made a significant contribution to the equation, t (152) =

2.97. The addition of Relational aggression to the model resulted in a significant R

square change (.05), F (1, 152) = 8.83, p < .01. In the third step of the second

regression, the model including Gender, Relational aggression, and Overt aggression

significantly predicted Revenge, F (3, 151) = 4.29, p < .01, Adj. R^2 = .06. However,

the addition of Overt aggression to the model did not result in a significant R square

change. Moreover, no predictor made a significant contribution to the equation.

Two hierarchical regressions then investigated the types of aggression

functions in the prediction of the revenge goal. In the third hierarchical regression

(Table 16), Proactive aggression was entered into the model before Reactive

aggression. It was hypothesized that Reactive aggression would significantly add to the prediction of Revenge, above and beyond the contributions of Gender and Proactive aggression. In the second step of the third regression, Gender and Proactive aggression significantly predicted Revenge, $F(2, 152) = 4.34$, $p < .05$, Adj. $R^2 = .04$; however, only Proactive aggression made a significant contribution to the equation, $t(152) = 2.20$. The addition of Proactive aggression to the model resulted in a significant R square change (.03), $F(1, 152) = 4.85$, $p < .05$. In the third step of the third regression, the model including Gender, Proactive aggression, and Reactive aggression significantly predicted Revenge, $F(3, 151) = 2.88$, $p < .05$, Adj. $R^2 = .04$. However, contrary to hypotheses, the addition of Reactive aggression to the model did not result in a significant R square change. Moreover, no predictor made a significant contribution to the equation, including, contrary to hypotheses, Reactive aggression. The sequence of the second and third steps were reversed (i.e., reversed order of Reactive and Proactive) in the final regression for exploratory purposes.

In the fourth hierarchical regression (Table 17), for exploratory purposes, Reactive aggression was entered into the model before Proactive aggression. In the second step of the fourth regression, Gender and Reactive aggression significantly predicted Revenge, $F(2, 152) = 3.33$, $p < .05$, Adj. $R^2 = .03$; however, the contribution of Reactive aggression to the equation merely approached significance, $t(152) = 1.70$. The addition of Reactive aggression to the model resulted in an R square change (.02) that approached significance, $F(1, 152) = 2.89$, $p < .10$. In the third step of the fourth regression, the model including Gender, Reactive aggression,

and Proactive aggression significantly predicted Revenge, $F(3, 151) = 2.88$, $p < .05$, Adj. $R^2 = .04$; however, no predictor made a significant contribution to the equation. Moreover, the addition of Proactive aggression to the model did not result in a significant R square change.

In summary, the present results provided support for two hypotheses but failed to support four additional hypotheses. Specifically, Relational and Reactive aggression were each positively and significantly associated with Revenge, as hypothesized. Contrary to hypotheses, neither Overt aggression nor Proactive aggression was significantly associated with Dominance. Also contrary to hypotheses, neither Relational aggression nor Reactive aggression significantly added to the prediction of Revenge above and beyond the contributions of Gender and Overt aggression or Proactive aggression (respectively).

Four hypotheses could not be tested. Specifically, Overt aggression and Proactive aggression were each hypothesized to add to the prediction of Dominance above and beyond the contribution of Gender and Relational aggression or Reactive aggression, respectively. Last, specific aggression form-function interaction terms (i.e., Relational by Reactive, Overt by Proactive) were each hypothesized to add to the prediction of social goals (i.e., Revenge, Dominance) above and beyond the contribution of gender and other aggression dimensions (i.e., Relational and Reactive, Overt and Proactive, respectively).

CHAPTER 4

DISCUSSION

The aim of the present study was to clarify the relationships between peer-nominated aggressiveness and self-reported social goals. Aggression forms (i.e., Overt, Relational) and functions (i.e., Proactive, Reactive) were hypothesized to be differentially predictive of specific social goals (i.e., Dominance, Revenge) in fifth-grade students. Overt and Proactive aggression, and especially their interaction term, were hypothesized to uniquely predict Dominance goals. Relational and Reactive aggression, and especially their interaction term, were hypothesized to uniquely predict Revenge goals. As hypothesized, both Relational aggression and Reactive aggression were significantly and positively associated with Revenge goal preferences. In contrast, additional hypothesized relationships between aggression forms, aggression functions, and social goals generally were either not supported or could not be evaluated.

The self-report measure of social goals demonstrated anticipated scales (i.e., Affiliation, Avoidance, Dominance, Revenge). However, the peer-nomination measure of aggression, when all aggression items were evaluated simultaneously, failed to adequately demonstrate the anticipated scales (i.e., Overt, Relational, Proactive, Reactive). For example, all Overt- and most Proactive-content items

loaded together on a single factor. Failure to adequately differentiate aggression scales precluded analyses across aggression forms and functions (e.g., simultaneously evaluating Relational and Reactive aggression on Revenge). In addition, Dominance was not significantly correlated with aggression scales (e.g., Overt, Proactive), further limiting analyses.

The present data demonstrated a two-factor structure of aggression, when all aggression items were evaluated simultaneously, though not the two anticipated broad factors of form and function. The first factor reflected a general aggressiveness, including all Overt-content items, three Proactive-content items, and one Reactive-content item. The second factor included all Relational-content items. In other words, when all aggression items were evaluated simultaneously, the present data roughly demonstrated a combined Overt/Proactive factor (i.e., General aggression) and a Relational factor (i.e., Relational aggression).

Importantly, the anticipated differentiation of types of aggression forms (i.e., Overt versus Relational) and types of functions (i.e., Proactive versus Reactive) was demonstrated, though only when items within form or within function were analyzed. In other words, when the present data were analyzed in a manner consistent with prior research (i.e., evaluating only Overt- and Relational-content items or only Proactive- and Reactive-content items), the anticipated aggression forms and functions were demonstrated. Therefore, the present data are inconsistent with the broad theoretical/empirical distinction of aggression forms and functions (e.g., Little, Brauner, et al., 2003; Little, Jones, et al., 2003), but roughly consistent with prior

aggression research with peer- or teacher-rated aggression (e.g., Day et al., 1993; Dodge & Coie, 1987; Dodge et al., 1990; Poulin & Boivin, 2000; see Crick, 1999, for review).

A series of hierarchical regressions were conducted to explore the relationships between the variables, with Gender, aggression forms (i.e., Overt, Relational), and aggression functions (i.e., Proactive, Reactive) as predictors and the social goal of Revenge as the criterion. In the present study, the addition of any aggression subtype (i.e., within form or within function) to a model already containing Gender significantly improved prediction of Revenge. However, the subsequent addition of yet another aggression subtype (i.e., within form or within function) did not significantly improve prediction of Revenge. In contrast, aggression factors that significantly improved prediction of Revenge in the second step of the hierarchical regression no longer contributed significantly to prediction of Revenge in the third step. This appears likely due to the result of the high inter-correlations between aggression scales (Tabachnick & Fidell, 1996). If so, using measures of aggression with established discriminant validity for subtypes may yet clarify the general association between aggression and revenge goals (see Erdley & Asher, 1999, for review). Also, the present measure of aggression could be modified to better differentiate between aggression subscales (e.g., include form-function combination items; cf. Little, Brauner, et al., 2003). Alternately, the association between aggression and Revenge goals may simply be general. That is, in the end, differentiating aggression subtypes may not add to our prediction of Revenge goals.

Nondifferentiation of Aggression Dimensions

The present study is limited by its unsuccessful differentiation of aggression

subscales (i.e., Overt, Relational, Proactive, Reactive) when all aggression-content

items were evaluated simultaneously. At least three plausible explanations for this

result are evident. First, aggression forms and functions may not reflect truly distinct

or distinguishable constructs. Alternately, aggression functions may be inadequately

assessed directly and require indirect assessment. Last, developmental limitations,

though improbable, may have limited children's ability to differentiate specific forms

and functions of aggression in the present study.

First, with respect to whether the forms and functions of aggression are

distinct dimensions, other researchers have demonstrated similar difficulty

simultaneously evaluating aggression forms and functions. Crain, Finch, and Foster

(2005) recently investigated relational aggression and social information processing

variables in fourth- through sixth-grade girls and attempted to assess both proactive-

relational and reactive-relational aggression. However, those authors reported in a

footnote "that reactive and proactive types of relational aggression could not be

distinguished using peer nominations" (p. 246). In addition, Roach and Gross (2003)

were unsuccessful in their attempt to simultaneously evaluate aggression forms and

functions in third and fourth graders. Using Dodge and Coie's (1987) teacher-

nominated measure of proactive and reactive aggression, Roach and Gross (2003)

failed to demonstrate a two-factor solution (i.e., a one-factor solution was instead obtained).

Prinstein and Cillessen (2003) successfully evaluated aggression forms (i.e., overt, relational, reputational) and functions (i.e., instrumental, reactive, bullying) in tenth graders, but their methodology was limited. Each aggression form and function was operationalized with only a single item, precluding the possibility of factor analyses. Moreover, each function item referred directly to a form item. For example, after nominating a peer as overtly aggressive, participants were asked if that peer was overtly aggressive, "'to get what they want' (instrumental), 'mostly when they have been hurt...' (reactive), or 'just to be mean...' (bullying)" (Prinstein & Cillessen, 2003, p. 318). Results of the present study (i.e., failing to differentiate Overt, Relational, Proactive, and Reactive aggression, failing to differentiate between form and function) call into question the relative distinctiveness of aggression forms and functions demonstrated by Little and colleagues (e.g., Little, Brauner, et al., 2003; Little, Jones, et al., 2003).

Directly assessing an aggression function, without reference to an aggression form may be extremely difficult, if at all possible. Little and colleagues (Little, Brauner, et al., 2003; Little, Jones, et al., 2003) demonstrated "pure" scales of overt, relational, proactive, and reactive aggression. However, they did not directly assess functions independently of forms. Instead, "pure" function scales were statistically derived from form-function combination scales. For example, overt, relational, proactive-overt, and proactive-relational scales were assessed directly. Then, a

"pure" proactive scale was derived by regressing proactive-overt and proactive-relational scales onto overt and relational scales, with the resulting residuals averaged to create a "pure" proactive scale. A "pure" reactive scale was similarly created. In other words, "pure" function scales were not directly assessed.

Underwood (2003) described the "pure" function scales of Little and colleagues (Little, Brauner, et al., 2003; Little, Jones, et al., 2003) as "phantom constructs" (p. 378). Underwood noted, "[T]hat particular forms of aggression tend to serve specific functions may be more of a fact of life than a confound....Form and function likely go together in the real world, and to attempt to separate them may be possible statistically...but may bear little relation to how children actually behave" (p. 377). In contrast, the present study attempted to directly assess aggression forms and functions but without permitting the content overlap of aggression forms and functions that Little and colleagues have criticized (Little, Brauner, et al., 2003; Little, Jones, et al., 2003).

Given the failure of the present aggression measure to differentiate aggression subscales, it may be significantly improved by the addition of explicit form-function combination items (e.g., overtly proactive items, relationally reactive items; cf. Little, Jones, et al., 2003). This would permit statistical control in the evaluation and differentiation of potential aggression forms and functions. The present failure in differentiating aggression forms and functions likely reflects, as Underwood (2003) argued, the artificiality of separating forms from functions in the real world. These measurement issues (e.g., direct/indirect assessment, including form-function

combination items) need to be addressed before alternate explanations for the present results can be meaningfully evaluated.

Last, developmental limitations of fifth-grade participants may have contributed to the failure to differentiate aggression dimensions, regardless of the relative distinctiveness of forms and functions. Separating aggression into four dimensions or subtypes requires more cognitive complexity than separating aggression into either two forms or two functions. Numerous studies (see Crick, 1999, for review) have demonstrated the relative ease with which fifth graders can differentiate two aggression forms (overt, relational) from one another. Other studies (e.g., Day et al., 1993; Dodge & Coie, 1987; Dodge et al., 1990; Poulin & Boivin, 2000) have similarly demonstrated the ease with which fifth graders can differentiate aggression functions (proactive, reactive). However, simultaneously evaluating two aggression forms and two aggression functions may be too complex for fifth graders.

Despite aggression item content specifically designed to minimize the overlap of aggression forms and functions, nearly all Overt and Proactive aggression items loaded on a single factor in the present study. This suggests that fifth graders may perceive an aggression form even when only aggression function is specified. They may automatically infer that aggression must take some form and then view the item as an aggression form with which they are already familiar. The ability to refrain from providing unasked-for information (e.g., form) may require increased cognitive complexity.

The form/function distinction may reflect more of an adult-constructed, as compared to child-constructed, understanding of childhood aggressiveness. Aggression functions, when no form is specified, are less concrete and more abstract than would be seen in the "real world" (Underwood, 2003, p. 377). Aggression functions in the absence of form reflect abstract concepts of the purpose or motivation for the aggressive behavior. Developmental research suggests that fifth graders' cognitive operations, though multidimensional, are generally less abstract and more context-bound than are those of adolescents or adults (see Bukatko & Daehler, 1995; Rice, 1995; and Rosser, 1994, for reviews). Stated differently, Rice (1995) said, "Concrete operational children can reason only about those things with which they have had direct, personal experience" (p. 199). Therefore, without specifying a concrete aggression form, fifth graders may have developmental difficulty directly evaluating the more abstract aggression functions.

The results obtained by Little and colleagues (Little, Brauner, et al., 2003; Little, Jones, et al., 2003) are consistent with this developmental/methodological consideration. Specifically, Little, Jones, et al. (2003) measured aggression functions by pairing them, on an item level, with specific aggression forms. In other words, children were never asked to evaluate an aggression function in the absence of an aggression form. Consequently, Little, Jones, et al. (2003) avoided participants' limitations with abstraction (i.e., function without form). Further evaluation of this developmental/methodological hypothesis would require both direct (e.g., present study) and indirect (e.g., Little, Jones, et al., 2003) assessment of aggression

functions in a single study as well as a design appropriate for evaluating potential

developmental differences.

Longitudinal, cross-sectional, or cross-sequential design would each allow for

the evaluation of potential developmental changes in the direct versus indirect

assessment of aggression functions. Specifically, a longitudinal (e.g., prospective)

design would contrast direct/indirect assessment over time, but within a single

cohort. A cross-sectional design would permit direct comparisons of the direct/

indirect assessment between cohorts of different ages, but at one point in time. Last,

the cross-sequential design would evaluate the direct/indirect question for multiple

cohorts of differing ages across multiple points in time.

<div align="center">Dominance and Aggression</div>

An additional limitation of the present study was the failure to significantly

correlate Dominance with aggression (i.e., Overt, Relational, Proactive, or Reactive

aggression). This was the case for participants overall and for girls and boys when

evaluated separately. Consequently, aggression could not be regressed onto

dominance in the present study. In contrast, dominance or dominance-type goals are

consistently associated with aggression in prior research (e.g., Crick & Dodge, 1996;

Erdley and Asher, 1999; Lochman et al., 1993; Renshaw & Asher, 1983; Rose &

Asher, 1999; Slaby & Guerra, 1988), regardless of any methodological limitations

(e.g., emphasizing overt over relational aggression, sampling boys more than girls).

The complete absence of significant associations between dominance and aggression

in the present study requires explanation. Specifically, hypothetical situations and the operationalization of dominance may have been inappropriate or inadequate.

The absence of significant dominance/aggression associations in the present study may be the result of hypothetical provocation situations that did not adequately elicit dominance goals in aggressive children. It may be that the presentation of a wide range of hypothetical situations (i.e., included examples of ambiguous provocation, conflict situations, and social failure situations) may have prevented the emergence of an association with dominance. Perhaps a more limited range of social contexts (e.g., conflict only) may better elicit dominance differences associated with aggressiveness (cf. Crick & Dodge, 1996).

Alternately, the hypothetical situations in the present study may have not sampled situations that aggressive children in particular respond to with dominance goals. However, in evaluating different social goals (i.e., relationship exclusivity, social instrumental, friendship continuation, revenge), Crain, Finch, and Foster (2005) similarly failed to demonstrate expected associations between relational aggression and social goal preferences in third- through sixth-grade girls. As Crain and colleagues (2005) noted, it is possible that their "hypothetical ambiguous relational provocation situations (relational vignettes)" (p. 218) were "too normative and did not elicit differential responding" (p. 228) between aggressive and nonaggressive participants. Several of the hypothetical situations used by Crain and colleagues (2005) closely mirror hypothetical situations used in the present study (e.g., birthday party vignette, whispering about you in the hall vignette).

Nonsignificant dominance/aggression associations may instead be the result of the operational definition of dominance goals in the present study. Dominance was operationalized as, "let that classmate know you're more important than s/he thinks." "Importance" may have inadequately reflected the specific potential connotations of dominance, such as hostility or social hierarchy, present in other research on aggression and social goals.

Slaby and Guerra (1988), for example, operationalized the social goal "hostility" (p. 582) as, "show the guy/girl not to mess with me" (p. 582), conveying a clear sense of hostile antagonism. Jarvinen and Nicholls (1996), capturing a wider range of connotations, operationalized "dominance" (p. 437) with the following seven items: "[I like it when...] they are afraid of me; they worry that I'll hurt them; they know I'm tougher than them; I hurt people who threaten me; I make them do what I want; and I trick them into doing things my way" (p. 437). Erdley and Asher (1996) presented fourth- and fifth-grade children with eight social goal alternatives in response to hypothetical vignettes. Dominance, per se, was not included as a goal. However, one of the eight goals (i.e., "maintaining an assertive reputation" [p. 1335]) may have better captured the social hierarchy aspects of dominance than did the operationalization of dominance in the present study.

In short, in the present study, the operationalization of dominance may have been too "watered down" to capture elements of dominance represented in other research. The need for a broad and less targeted operationalization of dominance in the present study was driven by an effort to evaluate social goal differences across a

wider range of social situations than are typically assessed in social goal research. Nevertheless, "importance" may have been too vague an operationalization to adequately demonstrate associations between dominance and aggression found in other research.

<div align="center">Gender and Future Research</div>

The effect of gender in the present study was inconsistent and complex. As summarized in Table 13, gender was significantly correlated with dominance, overt aggression, proactive aggression, and reactive aggression, such that boys demonstrated higher levels than girls on each variable. In contrast, gender was not significantly associated with relational aggression and merely approached significance for revenge goals (i.e., boys demonstrating a higher preference for revenge). However, despite being significantly correlated with dominance, overt aggression, and proactive aggression, gender generally failed to clarify hypothesized relationships among those variables.

The failure of gender to be significantly associated with relational aggression is particularly notable. The nonsignificant association between gender and relational aggression ($r = .094, p > .10$) adds to a growing body of research questioning gender differences in relational aggression (Crick et al., 1997; Henington et al., 1998; Little, Brauner, et al., 2003; Little, Jones, et al., 2003; Tomada & Schneider, 1997). In an effort to clarify the relationship between gender and relational/indirect forms of aggression, it has been argued that children's, and particularly boys', use of overt

aggression decreases with age and is supplanted with the use of relational or other indirect forms of aggression (e.g., Björkqvist, Lagerspetz, & Kaukiainen, 1992; Björkqvist, Österman, & Kaukiainen, 1992; Lindeman, Harakka, & Keltinkangas-Järvinen, 1997; see Björkqvist, 1994, for review; cf. Crick, 1999, for review).

The contrast between gender's nonsignificant association with relational aggression but significant association with overt aggression ($r = .451, p < .01$) in the present study is consistent with the argument that use of relational aggression among boys may increase before boys demonstrate a decrease in overt aggression. However, before meaningful conclusions about developmental trends and gender can be drawn, the present results would require replication within the framework of a longitudinal, cross-sectional, or cross-sequential research design. Moreover, Rose and Rudolph (2006), in their recent review of gender differences in peer relationship processes, highlighted gender differences in behavioral and social-cognitive styles, suggesting that developmental research will additionally require sensitivity to gender trends specific to particular social contexts.

Multiple lines of future research are suggested, overall, by the present results. Measurement issues associated with the simultaneous evaluation of aggression forms (overt, relational) and functions (proactive, reactive) require clarification, including evaluating the differentiation of aggression forms and functions, both broadly and specifically. At present, the use of explicit form-function combination items appears to be the most appropriate method of simultaneously evaluating aggression forms and functions. Developmental issues in the simultaneous evaluation of multiple

aggression dimensions may be studied, including the cognitive complexity associated with considering multiple and associated aggression dimensions and with direct versus indirect measurement of aggression functions. The role played by specific social context (e.g., ambiguous, conflict, social failure; see Erdley & Asher, 1999, for review) in moderating or mediating the relationships among variables requires further understanding. Last, the role of gender in elucidating the relationships among social goals, social contexts, and aggression dimensions will require more nuanced attention.

REFERENCES

Ahn, J. Y., & Park, S. Y. (1992). A social information processing approach to the study of children's aggression. *Korean Journal of Child Studies, 13,* 161-174.

Akhtar, N., & Bradley, E. J. (1991). Social information processing deficits of aggressive children: Present findings and implications for social skills training. *Clinical Psychology Review, 11,* 621-644.

Asarnow, J. R., & Callan, J. W. (1985). Boys with peer adjustment problems: Social cognitive processes. *Journal of Consulting and Clinical Psychology, 53,* 80-87.

Asher, S. R., & Wheeler, V. A. (1985). Children's loneliness: A comparison of rejected and neglected peer status. *Journal of Consulting and Clinical Psychology, 53,* 500-505.

Austin, J. T., & Vancouver, J. B. (1996). Goal constructs in psychology: Structure, process, and content. *Psychological Bulletin, 120,* 338-375.

Bandura, A. (1973). *Aggression: A social learning analysis.* Englewood Cliffs, NJ: Prentice-Hall.

Bennett, D. S., Macri, M. T., Creed, T. A., & Isom, J. A. (2001). Predictors of treatment response in a child day treatment program. *Residential Treatment for Children & Youth, 19,* 59-72.

Berkowitz, L. (1989). Frustration-aggression hypothesis: Examination and reformulation. *Psychological Bulletin, 106,* 59-73.

Bierman, K. L. (1986). The relation between social aggression and peer rejection in middle childhood. *Advances in Behavioral Assessment of Children & Families, 2,* 151-178.

Björkqvist, K. (1994). Sex differences in physical, verbal, and indirect aggression: A review of recent research. *Sex Roles, 30,* 177-188.

Björkqvist, K., Lagerspetz, K. M. J., & Kaukiainen, A. (1992). Do girls manipulate and boys fight? Developmental trends in regard to direct and indirect aggression. *Aggressive Behavior, 18,* 117-127.

Björkqvist, K., Österman, K., & Kaukiainen, A. (1992). The development of direct and indirect aggressive strategies in males and females. In K. Björkqvist & P. Niemelä (Eds.), *Of mice and women: Aspects of female aggression* (pp. 51-64). San Diego: Academic Press.

Brendgen, M., Vitaro, F., Tremblay, R. E., & Lavoie, F. (2001). Reactive and proactive aggression: Predictions to physical violence in different contexts and moderating effects of parental monitoring and caregiving behavior. *Journal of Abnormal Child Psychology, 29,* 293-304.

Brown, K., Atkins, M. S., Osborne, M. L., & Milnamow, M. (1996). A revised teacher rating scale for reactive and proactive aggression. *Journal of Abnormal Psychology, 24,* 473-480.

Bukatko, D., & Daehler, M. W. (1995). *Child development: A thematic approach* (2nd ed.). Boston: Houghton Mifflin Co.

Cairns, R. B., Cairns, B. D., Neckerman, H. J., Ferguson, L. L., & Gariepy, J. L. (1989). Growth and aggression: Childhood to early adolescence. *Developmental Psychology, 25,* 320-330.

Camodeca, M., Goossens, F. A., Meerum Terwogt, M., & Schuengel, C. (2002). Bullying and victimization among school-age children: Stability and links to proactive and reactive aggression. *Social Development, 11,* 332-345.

Chulef, A. S., Read, S. J., & Walsh, D. A. (2001). A hierarchical taxonomy of human goals. *Motivation & Emotion, 25,* 191-232.

Chung, T., & Asher, S. R. (1996). Children's goals and strategies in peer conflict situations. *Merrill-Palmer Quarterly, 42,* 125-147.

Coie, J. D., & Dodge, K. A. (1983). Continuities and changes in children's social status: A five year longitudinal study. *Merrill-Palmer Quarterly, 29,* 261-282.

Coie, J. D., & Dodge, K. A. (1998). Aggression and antisocial behavior. In W. Damon & N. Eisenberg (Eds.), *Handbook of child psychology: Social, emotional, and personality development, Vol.* 3 (5th ed., pp. 779-862). New York: Wiley.

Coie, J. D., Dodge, K. A., & Coppotelli, H. (1982). Dimensions and types of social status: A cross-age perspective. *Developmental Psychology, 18,* 557-570.

Coie, J. D., Dodge, K. A., Terry, R., & Wright, V. (1991). The role of aggression in peer relations: An analysis of aggression episodes in boys' play groups. *Child Development, 62,* 812-826.

Coie, J. D., Lochman, J. E., Terry, R., & Hyman, C. (1992). Predicting early adolescent disorder from childhood aggression and peer rejection. *Journal of Consulting & Clinical Psychology, 60,* 783-792.

Crain, M. M., Finch, C. L., Foster, S. L. (2005). The relevance of the social information processing model for understanding relational aggression in girls. *Merrill-Palmer Quarterly, 51,* 213-249.

Crick, N. R. (1995). Relational aggression: The role of intent attributions, feelings of distress, and provocation type. *Development and Psychopathology, 7,* 313-322.

Crick, N. R. (1996). The role of overt aggression, relational aggression, and prosocial behavior in the prediction of children's future social adjustment. *Child Development, 67,* 2317-2327.

Crick, N. R. (1997). Engagement in gender common versus noncommon forms of aggression: Links to social-psychological adjustment. *Developmental Psychology, 33,* 610-617.

Crick, N. R., & Bigbee, M. A. (1998). Relational and overt forms of peer victimization: A multiinformant approach. *Journal of Consulting and Clinical Psychology, 66,* 337-347.

Crick, N. R., Bigbee, A., & Howes, C. (1996). Gender differences in children's common beliefs about aggression: How do I hurt thee? Let me count the ways. *Child Development, 67,* 1003-1014.

Crick, N. R., Casas, J. F., & Mosher, M. (1997). Relational and overt aggression in preschool. *Developmental Psychology, 33,* 579-588.

Crick, N. R., & Dodge, K. A. (1994). A review and reformulation of social-information-processing mechanisms in children's social adjustment. *Psychological Bulletin, 115,* 74-101.

Crick, N. R., & Dodge, K. A. (1996). Social information-processing mechanisms in reactive and proactive aggression. *Child Development, 67,* 993-1002.

Crick, N. R., & Grotpeter, J. K. (1995). Relational aggression, gender, and social-psychological adjustment. *Child Development, 66,* 710-722.

Crick, N. R., Grotpeter, J. K., & Bigbee, A. (2002). Relationally and physically aggressive children's intent attributions and feelings of distress for relational and instrumental peer provocations. *Child Development, 73,* 1134-1142.

Crick, N. R., & Werner, N. E. (1999). Response decision processes in relational and overt aggression. *Child Development, 69,* 1630-1639.

Crick, N. R., Werner, N. E., Casas, J. F., O'Brien, K. M., Nelson, D. A., Grotpeter, J. K., & Markon, K. (1999). Childhood aggression and gender: A new look at an old problem. In D. Bernstein (Ed.), *Gender and motivation* (pp. 75-141). Nebraska Symposium on Motivation. Lincoln, NE: University of Nebraska Press.

David, C. F., & Kistner, J. A. (2000). Do positive self-perceptions have a "dark side"? Examination of the link between perceptual bias and aggression. *Journal of Abnormal Child Psychology, 28,* 327-337.

Day, D. M., Bream, L. A., & Pal, A. (1993). Proactive and reactive aggression: An analysis of subtypes based on teacher perceptions. *Journal of Clinical Child Psychology, 21,* 210-217.

Delveaux, K. D., & Daniels, T. (2000). Children's social cognitions: Physically and relationally aggressive strategies and children's goals in peer conflict situations. *Merrill-Palmer Quarterly, 46,* 672-692.

Demby, M. L. (2001). Proactive and reactive aggression among juvenile sex offenders: Subtypes of aggression as a means of classification. *Dissertation Abstracts International, 62,* 1570.

Deviney, F. P. (2002). The role of aggressive children's self-perceptions and their expectations for and reactions to social interaction. *Dissertation Abstracts International, 63,* 3040.

Dodge, K. A. (1991). The structure and function of reactive and proactive aggression. In D. J. Pepler & K. H. Rubin (Eds.), *The development and treatment of childhood aggression* (pp. 201-218). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Dodge, K. A., Asher, S. R., & Parkhurst, J. T. (1989). Social life as a goal coordination task. In C. Ames & R. Ames (Eds.), *Research on motivation in education* (Vol. 3, pp. 107-135). San Diego: Academic Press.

Dodge, K. A., & Coie, J. D. (1987). Social-information-processing factors in reactive and proactive aggression in children's peer groups. *Journal of Personality and Social Psychology, 53,* 1146-1158.

Dodge, K. A., Lochman, J. E., Harnish, J. D., Bates, J. E., & Pettit, G. S. (1997). Reactive and proactive aggression in school children and psychiatrically impaired chronically assaultive youth. *Journal of Abnormal Psychology, 106,* 37-51.

Dodge, K. A., Price, J. M., Coie, J. D., & Christopoulos, C. (1990). On the development of aggressive dyadic relationships in boys' peer groups. *Human Development, 33,* 260-270.

Dodge, K. A., & Schwartz, D. (1997). Social information processing mechanisms in aggressive behavior. In D. M. Stoff & J. Breiling (Eds.), *Handbook of Antisocial Behavior* (pp. 171-180). Hoboken, N.J.: John Wiley & Sons, Inc.

Dollard, J., Doob, L. W., Miller, N. E., Mowrer, O. H., & Sears, R. R. (1939). *Frustration and aggression.* New Haven, CT: Yale University Press.

Dowson, M., & McInerney, D. M. (2003). What do students say about their motivational goals?: Towards a more complex and dynamic perspective on student motivation. *Contemporary Educational Psychology, 28,* 91-113.

Dweck, C. (1996). Social motivation: Goals and social-cognitive processes. A comment. In J. Juvonen & K. R. Wentzel (Eds.), *Social motivation: Understanding children's school adjustment. Cambridge studies in social and emotional development* (pp. 181-195). New York: Cambridge University Press.

Erdley, C. A., & Asher, S. R. (1996). Children's social goals and self-efficacy perceptions as predictors of their responses to ambiguous provocation. *Child Development, 67,* 1329-1344.

Erdley, C. A., & Asher, S. R. (1999). A social goals perspective on children's social competence. *Journal of Emotional and Behavioral Disorders, 7,* 156-167.

Erdley, C. A., Cain, K. M., Loomis, C. C., Dumas-Hines, F., & Dweck, C. S. (1997). Relations among children's social goals, implicit personality theories, and responses to social failure. *Developmental Psychology, 33,* 263-272.

Erdley, C. A., & Pietrucha, C. A. (1995, April). *The relation of children's attributions and social goals to their responses to social failure.* Paper presented at the annual meeting of the American Educational Research Association, San Francisco.

Feshbach, N. D. (1969). Sex differences in children's modes of aggressive responses toward outsiders. *Merrill-Palmer Quarterly, 15,* 249-258.

Feshbach, N. D., & Sones, G. (1971). Sex differences in adolescents' reactions to newcomers. *Developmental Psychology, 4,* 381-386.

Ford, M. E., & Nichols, C. W. (1987). A taxonomy of human goals and some possible applications. In M. E. Ford & D. H. Ford (Eds.), *Humans as self-constructing living systems: Putting the framework to work* (pp. 289-311). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Fraser, M. W. (1996). Cognitive problem solving and aggressive behavior among children. *Families in Society, 77,* 19-32.

French, D. C. (1990). Heterogeneity of peer-rejected girls. *Child Development, 61,* 2028-2031.

French, D. C., & Waas, G. A. (1985). Behavior problems of peer-neglected and peer-rejected elementary-age children: Parent and teacher perspectives. *Child Development, 56,* 246-252.

Frick, P. J. (1998). Conduct disorders. In T. H. Ollendick & M. Hersen (Eds.), *Handbook of child psychopathology* (3rd ed., pp. 213-237). New York: Plenum.

Goins-Flanagan, J. E. (1999). Frustration and information processing in aggressive children. *Dissertation Abstracts International, 59,* 5136.

Grotpeter, J. K., & Crick, N. R. (1996). Relational aggression, overt aggression, and friendship. *Child Development, 67,* 2328-2338.

Hartman, R., & Stage, S. A. (2000). The relationship between social information processing and in-school suspension for students with behavioral disorders. *Behavioral Disorders, 25,* 183-195.

Hartup, W. W. (1974). Aggression in childhood: Developmental perspectives. *American Psychologist, 29,* 336-341.

Hawley, P. H., & Vaughn, B. E. (2003). Aggression and adaptive functioning: The bright side to bad behavior. *Merrill-Palmer Quarterly, 49,* 239-242.

Henington, C., Hughes, J. N., Cavell, T. A., & Thompson, B. (1998). The role of relational aggression in identifying aggressive boys and girls. *Journal of School Psychology, 36,* 457-477.

Holbrook, M. I. (1997). Anger management training in prison inmates. *Psychological Reports, 81,* 623-626.

Hubbard, J. A., Dodge, K. A., Cillessen, A. H. N., Coie, J. D., & Schwartz, D. (2001). The dyadic nature of social information processing in boys' reactive and proactive aggression. *Journal of Personality & Social Psychology, 80,* 268-280.

Hudley, C. A. (1994). Perceptions of intentionality, feelings of anger, and reactive aggression. In M. J. Furlong & D. C. Smith (Eds.), *Anger, hostility, and aggression: Assessment, prevention, and intervention strategies for youth* (pp. 39-56). Brandon, VT: Clinical Psychology Publishing.

Jarvinen, D. W., & Nicholls, J. G. (1996). Adolescents' social goals, beliefs about the causes of social success, and satisfaction in peer relations. *Developmental Psychology, 32,* 435-441.

Kupersmidt, J. B., & Patterson, C. J. (1991). Childhood peer rejection, aggression, withdrawal, and perceived competence as predictors of self-reported behavior problems in preadolescence. *Journal of Abnormal Child Psychology, 19,* 427-449.

Ladd, G. W., & Crick, N. R. (1989). Probing the psychological environment: Children's cognitions, perceptions, and feelings in the peer culture. In M. L. Maehr & C. Ames (Eds.), *Advances in motivation and achievement: Motivation enhancing environments* (pp. 1-44). Greenwich, CT: JAI Press.

Lagerspetz, K. M., & Björkqvist, K. (1994). Indirect aggression in boys and girls. In L. R. Huesmann (Ed.), *Aggressive behavior: Current perspectives* (pp. 131-150). New York: Plenum.

Lindeman, M., Harakka, T., & Keltinkangas-Järvinen, L. (1997). Age and gender differences in adolescents' reactions to conflict situations: Aggression, prosociality, and withdrawal. *Journal of Youth and Adolescence, 26*, 339-351.

Little, T. D., Brauner, J., Jones, S. M., Nock, M. K., & Hawley, P. H. (2003). Rethinking aggression: A typological examination of the functions of aggression. *Merrill-Palmer Quarterly, 49*, 343-369.

Little, T. D., Jones, S. M., Henrich, C. G., & Hawley, P. H. (2003). Disentangling the "whys" from the "whats" of aggressive behavior. *International Journal of Behavioral Development, 27*, 122-133.

Lochman, J. E., & Lenhart, L. A. (1993). Anger coping intervention for aggressive children: Conceptual models and outcome effects. *Clinical Psychology Review, 13*, 785-805.

Lochman, J. E., Wayland, K. K., & White, K. J. (1993). Social goals: Relationship to adolescent adjustment and to social problem solving. *Journal of Abnormal Child Psychology, 21*, 135-151.

Loeber, R. (1990). Development and risk factors of juvenile antisocial behavior and delinquency. *Clinical Psychology Review, 10*, 1-41.

Matloff, G. R. (2002). Peer rejection rates and perceived social competence among elementary-school children who display reactive and combined reactive and proactive aggressive behaviors. *Dissertation Abstracts International, 62*, 4841.

McAdams, C. R. (2002). Trends in the occurrence of reactive and proactive aggression among children and adolescents: Implications for preparation and practice in child and youth care. *Child and Youth Care Forum, 31*, 89-109.

McEvoy, M. A., Estrem, T. L., Rodriguez, M. C., & Olson, M. L. (2003). Assessing relational and physical aggression among preschool children: Intermethod agreement. *Topics in Early Childhood Special Education, 23*, 53-63.

Miczek, K. A., Fish, E. W., de Bold, J. F., & de Almeida, R. M. M. (2002). Social and neural determinants of aggressive behavior: Pharmacotherapeutic targets at serotonin, dopamine and aminobutyric acid systems. *Psychopharmacology, 163*, 434-458.

Ohbuchi, K., & Tedeschi, J. T. (1997). Multiple goals and tactical behaviors in social conflicts. *Journal of Applied Social Psychology, 27*, 2177-2199.

Olweus, D. (1979). Stability of aggressive reaction patterns in males: A review. *Psychological Bulletin, 86,* 852-875.

Österman, K., Björkqvist, K., Lagerspetz, K. M. J., Kaukiainen, A., Huesmann, R., & Fraczek, A. (1994). Peer- and self-estimated aggression and victimization in 8-year-old children from five ethnic groups. *Aggressive Behavior, 20,* 411-428.

Pakaslahti, L., & Keltikangas-Järvinen, L. (2000). Comparison of peer, teacher and self-assessments on adolescent direct and indirect aggression. *Educational Psychology, 20,* 177-190.

Parker, J. G., & Asher, S. R. (1987). Peer acceptance and later personal adjustment: Are low-accepted children "at-risk?" *Psychological Bulletin, 102,* 357-389.

Pellegrini, A. D., & Long, J. D. (2002). A longitudinal study of bullying, dominance, and victimization during the transition from primary school through secondary school. *British Journal of Developmental Psychology, 20,* 259-280.

Poulin, F., & Boivin, M. (1999). Proactive and reactive aggression and boys' friendship quality in mainstream classrooms. *Journal of Emotional & Behavioral Disorders, 7,* 168-177.

Poulin, F., & Boivin, M. (2000). Reactive and proactive aggression: Evidence of a two-factor model. *Psychological Assessment, 12,* 115-122.

Poulin, F., Cillessen, Hubbard, J. A., Coie, J. D., & Dodge, K. A. (1997). Children's friends and behavioral similarity in two social contexts. *Social Development, 6,* 224-236.

Prinstein, M. J., & Cillessen, A. H. N. (2003). Forms and functions of adolescent peer aggression associated with high levels of peer status. *Merrill-Palmer Quarterly, 49,* 310-342.

Pulkkinen, L. (1996). Proactive and reactive aggression in early adolescence as precursors to anti- and prosocial behavior in young adults. *Aggressive Behavior, 22,* 241-257.

Pulkkinen, L., & Pitkanen, T. (1993). Continuities in aggressive behavior from childhood to adulthood. *Aggressive Behavior, 19,* 249-263.

Rabiner, D. L., & Gordon, L. V. (1992). The coordination of conflicting social goals: Differences between rejected and nonrejected boys. *Child Development, 63,* 1344-1350.

Ramsden, S. R. (2001). Family expressiveness and parental emotion coaching: Their role in emotion regulation, social status, and childhood aggression. *Dissertation Abstracts International, 62,* 2497.

Renshaw, P. D., & Asher, S. R. (1983). Children's goals and strategies for social interaction. *Merrill-Palmer Quarterly, 29,* 353-374.

Rice, F. P. (1995). *Human development: A life-span approach* (2nd ed.). Upper Saddle River, NJ: Prentice-Hall.

Roach, C. N., & Gross, A. M. (2003). Assessing child aggression: A tale of two measures. *Child & Family Behavior Therapy, 25,* 19-38.

Roland, E., & Idsoe, T. (2001). Aggression and bullying. *Aggressive Behavior, 27,* 446-462.

Rose, A. J., & Asher, S. R. (1999). Children's goals and strategies in response to conflicts within a friendship. *Developmental Psychology, 35,* 69-79.

Rose, A. J., & Rudolph, K. D. (2006). A review of sex differences in peer relationship processes: Potential trade-offs for the emotional and behavioral development of girls and boys. *Psychological Bulletin, 132,* 98-131.

Rosser, R. (1994). *Cognitive development: Psychological and biological perspectives.* Boston: Allyn and Bacon.

Rys, G. S., & Bear, G. G. (1997). Relational aggression and peer relations: Gender and developmental issues. *Merrill-Palmer Quarterly, 43,* 87-106.

Scarpa, A., & Reine, A. (1997). The biology of wickedness. *Psychiatric Annals, 27,* 624-629.

Slaby, R. G., & Guerra N. G. (1988). Cognitive mediators of aggression in adolescent offenders: 1. Assessment. *Developmental Psychology, 24,* 580-588.

Stiensmeier-Pelster, J., & Gerlach, H. (1997). Aggressive behavior of children and adolescents from an attributional point of view. *Journal of Educational Psychology, 11,* 203-209.

Sumrall, S. G., Ray, G. E., & Tidwell, P. S. (2000). Evaluations of relational aggression as a function of relationship type and conflict setting. *Aggressive Behavior, 26,* 179-191.

Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics* (3rd ed.). New York: HarperCollins.

Tomada, G., & Schneider, B. H. (1997). Relational aggression, gender, and peer acceptance: Invariance across culture, stability over time, and concordance among informants. *Developmental Psychology, 33,* 601-609.

Underwood, M. K. (2003). The comity of modest manipulation, the importance of distinguishing among bad behaviors. *Merrill-Palmer Quarterly, 49,* 373-389.

Vitaro, F., Brendgen, M., & Tremblay, R. E. (2002). Reactively and proactively aggressive children: Antecedent and subsequent characteristics. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 43,* 495-506.

Vitaro, F., Gendreau, P. L., Tremblay, R. E., & Oligny, P. (1998). Reactive and proactive aggression differentially predict later conduct problems. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 39,* 377-385.

Vitielo, B., & Stoff, D. M. (1997). Subtypes of aggression and their relevance to child psychiatry. *Journal of the American Academy of Child and Adolescent Psychiatry, 36,* 307-315.

Waschbusch, D. A., Willoughby, M. T., & Pelham, W. E., Jr. (1998). Criterion validity and the utility of reactive and proactive aggression: Comparisons to attention deficit hyperactivity disorder, oppositional defiant disorder, conduct disorder, and other measures of functioning. *Journal of Clinical Child Psychology, 27,* 396-405.

Werner, N. E., & Crick, N. R. (1999). Relational aggression and social-psychological adjustment in a college sample. *Journal of Abnormal Psychology, 108,* 615-623.

APPENDIX A

PEER-REPORT MEASURE: PROSOCIAL AND AGGRESSIVE BEHAVIORS

Summary of peer nomination items. Items began, "(S)he is the kind of person who . . . ." Items were presented in the format demonstrated on the following page.

Prosocial Items:

...gets along well with others.

...has a good sense of humor.

...you like to spend a lot of time with.

...is well liked by other kids.

Overt Aggression Items:

...hits, kicks, or punches others.

...gets into physical fights with others.

...insults others to their face.

...pushes and shoves others around.

Relational Aggression Items:

...ignores others or stops talking to them.

...tells her/his friends to stop liking someone.

...tells others (s)he won't be their friend anymore.

...keeps others from being in her/his group of friends.

Proactive Aggression Items:

...threatens and bullies others.

...gets others to gang up on a peer.

...plays mean tricks.

...picks on smaller kids.

Reactive Aggression Items:

...when teased, strikes back.

...blames others in conflicts.

...overreacts angrily to accidents.

...is a poor loser.

P# _____

For each classmate listed below (including you), choose a number between one (1) and five (5) to show how much the following statement is true for her/him. Fill in only one number for each classmate on each statement.

Never	Almost Never	Sometimes Always	Frequently	Almost

① -------------------- ② -------------------- ③ -------------------- ④ -------------------- ⑤

(S)he is the kind of person who gets along well with others.

Classmate #1   ①②③④⑤

Classmate #2   ①②③④⑤

Classmate #3   ①②③④⑤

Classmate #4   ①②③④⑤

Classmate #5   ①②③④⑤

Classmate #6   ①②③④⑤

Classmate #7   ①②③④⑤

Classmate #8   ①②③④⑤

Classmate #9   ①②③④⑤

APPENDIX B

SELF-REPORT MEASURE: SOCIAL GOALS

P# _____

Imagine yourself in the following situation. A new kid at your school you don't know very well is coming down the hall from the other direction, and suddenly bumps into your shoulder hard, knocking your books to the floor.

How important would each of the following goals be to you in this situation? Please circle just one number for each of the goals.

a) Work things out and get to know that classmate better.

      Not Important   Slightly Important   Important   Very Important
         ① ----------------------- ② ----------------------- ③ ----------------------- ④

b) Get away from what you don't like as soon as possible.

      Not Important   Slightly Important   Important   Very Important
         ① ----------------------- ② ----------------------- ③ ----------------------- ④

c) Let that classmate know you're much more important than s/he thinks.

      Not Important   Slightly Important   Important   Very Important
         ① ----------------------- ② ----------------------- ③ ----------------------- ④

d) Get back at that classmate.

      Not Important   Slightly Important   Important   Very Important
         ① ----------------------- ② ----------------------- ③ ----------------------- ④

P# _____

Imagine yourself in the following situation. You are in the bathroom one day after recess. While you are in there, two of your classmates come in and start talking to each other. You overhear one of the classmates invite the other to a birthday party, and then mention all the people who are invited. Your name is not mentioned.

How important would each of the following goals be to you in this situation? Please circle just one number for each of the goals.

a) Work things out and get to know that classmate better.

Not Important   Slightly Important   Important   Very Important
① ----------------------- ② ----------------------- ③ ----------------------- ④

b) Get away from what you don't like as soon as possible.

Not Important   Slightly Important   Important   Very Important
① ----------------------- ② ----------------------- ③ ----------------------- ④

c) Let that classmate know you're much more important than s/he thinks.

Not Important   Slightly Important   Important   Very Important
① ----------------------- ② ----------------------- ③ ----------------------- ④

d) Get back at that classmate.

Not Important   Slightly Important   Important   Very Important
① ----------------------- ② ----------------------- ③ ----------------------- ④

P# _____

Imagine yourself in the following situation.   You ask a kid who is new to the neighborhood to watch cartoons one Saturday morning.   After about ten minutes, the kid changes the channel without asking.

How important would each of the following goals be to you in this situation? Please circle just one number for each of the goals.

a) Work things out and get to know that classmate better.

    Not Important   Slightly Important   Important   Very Important
      ① ------------------------ ② ------------------------ ③ ------------------------ ④

b) Get away from what you don't like as soon as possible.

    Not Important   Slightly Important   Important   Very Important
      ① ------------------------ ② ------------------------ ③ ------------------------ ④

c) Let that classmate know you're much more important than s/he thinks.

    Not Important   Slightly Important   Important   Very Important
      ① ------------------------ ② ------------------------ ③ ------------------------ ④

d) Get back at that classmate.

    Not Important   Slightly Important   Important   Very Important
      ① ------------------------ ② ------------------------ ③ ------------------------ ④

P# _____

Imagine yourself in the following situation. You and a classmate are both going for the last piece of playground equipment. But, the classmate tells you that if you don't back off, then you will not be invited to his/her party the next day.

How important would each of the following goals be to you in this situation? Please circle just one number for each of the goals.

a) Work things out and get to know that classmate better.

<div>

Not Important   Slightly Important   Important   Very Important

① ------------------------ ② ------------------------ ③ ------------------------ ④

</div>

b) Get away from what you don't like as soon as possible.

<div>

Not Important   Slightly Important   Important   Very Important

① ------------------------ ② ------------------------ ③ ------------------------ ④

</div>

c) Let that classmate know you're much more important than s/he thinks.

<div>

Not Important   Slightly Important   Important   Very Important

① ------------------------ ② ------------------------ ③ ------------------------ ④

</div>

d) Get back at that classmate.

<div>

Not Important   Slightly Important   Important   Very Important

① ------------------------ ② ------------------------ ③ ------------------------ ④

</div>

P# _____

Imagine yourself in the following situation. You are walking down the hall in school with your bag. A new classmate you don't know very well bumps into your bag. Your bag breaks and your books fall onto the floor. No one helps you pick them up.

How important would each of the following goals be to you in this situation? Please circle just one number for each of the goals.

a) Work things out and get to know that classmate better.

     Not Important   Slightly Important   Important   Very Important
       ① ----------------------- ② ----------------------- ③ ----------------------- ④

b) Get away from what you don't like as soon as possible.

     Not Important   Slightly Important   Important   Very Important
       ① ----------------------- ② ----------------------- ③ ----------------------- ④

c) Let that classmate know you're much more important than s/he thinks.

     Not Important   Slightly Important   Important   Very Important
       ① ----------------------- ② ----------------------- ③ ----------------------- ④

d) Get back at that classmate.

     Not Important   Slightly Important   Important   Very Important
       ① ----------------------- ② ----------------------- ③ ----------------------- ④

Imagine yourself in the following situation. You are getting a drink of water at the water fountain in the hallway at school. As you are standing there, a classmate walks by with a new student at school. Although they are whispering, you overhear that classmate say something mean about you to the new student. As they walk by, they both look at you and laugh and then walk down the hall.

How important would each of the following goals be to you in this situation? Please circle just one number for each of the goals.

a) Work things out and get to know that classmate better.

Not Important   Slightly Important   Important   Very Important
   ① ----------------------- ② ----------------------- ③ ----------------------- ④

b) Get away from what you don't like as soon as possible.

Not Important   Slightly Important   Important   Very Important
   ① ----------------------- ② ----------------------- ③ ----------------------- ④

c) Let that classmate know you're much more important than s/he thinks.

Not Important   Slightly Important   Important   Very Important
   ① ----------------------- ② ----------------------- ③ ----------------------- ④

d) Get back at that classmate.

Not Important   Slightly Important   Important   Very Important
   ① ----------------------- ② ----------------------- ③ ----------------------- ④

P# _____

Now, please go back over each of the six situations again and circle your most important goal (a, b, c, or d) for each situations. In other words, circle the one goal statement (a, b, c, or d) that best says what your most important goal would be in that situation. Circle only one goal statement (a, b, c, or d). Do NOT change the numbers circled for each goal. Leave those alone.

APPENDIX C

PARENTAL / GUARDIAN CONSENT FORM

Month Day, Year

Dear Parent or Guardian,

We have recently received permission to contact parents of students at your child's school. We are writing to tell you about a research project affiliated with Northern Illinois University, DeKalb, IL, and to ask for your permission to allow your son or daughter to participate in this project.

We are interested in how children's aggressive behaviors (e.g., hits others, fights others, excludes others, gossips about others) are related to the way that children think about different social situations. We will also be looking at limited number of prosocial characteristics (e.g., has a good sense of humor). We want to understand how children's goals (e.g., get to know a peer better, get away from the situation) in different social situations are related to different types of aggressiveness. In this project, we are <u>not</u> interested in the characteristics of specific children. Also, we are <u>not</u> interested in identifying specific children or groups of children for any sort of program. Rather, we are interested in how children's self-rated goals in different social situations are related to peer-rated perceptions of behavior.

Here is what your child would do if you give permission for him or her to participate. Students will be asked to complete a few forms: (#1) an "assent" form (where your son or daughter can choose to participate or not; it also asks his or her age, gender, and race), (#2) a self- and peer-rated form that describes different types of aggressive and prosocial behaviors (e.g., fights others, excludes others, gossips about others, gets along well with others), and (#3) a series of forms in which six different social situations are described (e.g., gets bumped into when the reason is unclear, overhears they have not been invited to a party), where your child is asked to rate his or her own possible goals in that situation.

All responses will be held in the strictest confidence. Responses are confidential. Information will be coded according to number, not by name. However, the names of all participating students within your child's classroom <u>will</u> appear across the top of the self- and peer-rated form of aggressive and prosocial behaviors. Students will rate how well each listed behavior (e.g., fights, gossips, humor) describes each of the participating students. No names appear on the self-rated measure of social goals.

Once we have received your permission for your child to participate in the project, we will then invite them to do so. Please note that <u>participation is entirely voluntary</u>. Students will sign an assent form stating that they understand what the project is about and that they are willing to help us with our project. Students will be assured that they don't have to participate and that they can decide to stop participating at any time. There will be no penalty of any kind if they choose not to participate or if they choose to stop participating.

A possible risk of participating in this sort of project may be that children could discuss their responses with one another after we're done and become upset by the information. However, we talk in detail with the children about respecting others' privacy. We emphasize the idea that if they want their information to be kept private, they need to do their part by not talking about their answers to any other child. During data collection, the students create a "screen" around their papers by standing up a folder on their desk. Researchers will closely monitor your child's class to ensure that everyone understands the questions and only pays attention to their own responses (not those of classmates).

After research forms are completed, we will talk with the children about developing healthy peer relationships, emphasizing kindness and respect toward everyone. Our message is that children should treat others as they would want to be treated. After our discussion, the children play some logic games or "mental puzzles" to distract them from the data collection exercise.
Most students find this type of project interesting. They enjoy being asked their opinions about a topic that is so important to them. The exact times for collecting this information in your child's class will be determined by his or her teacher. The forms will take about 45 to 60 minutes.

We would greatly appreciate it if you allowed your child to participate in this project. Our findings will help us understand how children's goals in different social situations are related to possible aggressive-ness. On the form below, please indicate whether your son or daughter has permission to participate.

Please have your child return this completed form to his or her teacher as soon as possible, even if they don't have permission to participate. Students will earn a small reward (e.g., pencil, cool erasure) for returning the consent form. Your child will receive this small reward just for returning the completed form, whether or not you allow them to participate. We simply want to know one way or the other.

We are affiliated with the Psychology Department of Northern Illinois University (NIU). If you have any questions, please call Jeff Martens (815-751-7034), or Drs. Karen White (815-753-8090) or Nina Mounts (815-753-6968) at Northern Illinois University. The mental health professional for your child's school, [name], may be reached at [number]. We would be happy to discuss the project with you. If we are unavailable at the time of your call, please leave a message and we will promptly return your call. In addition, if you have further questions about participants' rights, please feel free to contact the NIU Office of Research Compliance (815-895-8425). Lastly, your child's principal, [name] (number), has a complete copy of all materials that will be presented to your child should you want to review the forms.

Thank you for your cooperation.

Sincerely,

Jeffrey W. Martens, M.A.   Karen J. White, Ph.D.   Nina Mounts, Ph.D.
Graduate Student, NIU   Director, Psychological   Asst. Professor, NIU
     Services Center, NIU

✂ _____

Parent Permission Form

I have read the above description of the research project on the relationship between aggression and social goals in social situations. I understand that my child's participation is voluntary and may be withdrawn at any time without penalty or prejudice. I have had my questions answered regarding the nature of this study. I understand what the study is about and I have decided that (**Please circle one choice and provide signature below**):

YES   My son / daughter (circle one), _____ [print name], does have my permission to participate in the research project conducted by Jeff Martens, M.A., Karen White, Ph.D., and Nina Mounts, Ph.D.

(YES) _____
Parent / Guardian signature   **date**

- or -

NO   My son / daughter (circle one), _____ [print name], does not have my permission to participate in the research project conducted by Jeff Martens, M.A., Karen White, Ph.D., and Nina Mounts, Ph.D.

(NO) _____
Parent / Guardian signature   **date**

Thank you for making sure that your child returns this form to his or her teacher!

APPENDIX D

PARTICIPANT ASSENT FORM

P# _____

ASSENT FORM

      I have been told about the study being done by Mr. Martens, Dr. White, and Dr. Mounts from NIU. I understand that I will fill out forms that describe many different behaviors. I will fill out a form that describes my own behaviors and those of other kids. Some behaviors might describe me and other students, but other behaviors might not. Also, I will fill out forms that describe what my goals would be in several different situations. I understand that all of this information will be kept private. No one at school will know how I answered the questions.

      I understand that I can choose to stop at any time if I want. I can choose not to participate in this study. There will be no penalty if I choose to stop or if I choose not to participate. I can ask questions at any time, even now.

My choice is (circle one):

YES   I want to participate in the project.

NO   I do not want to participate in the project.

_____

Name   date

STOP – WAIT FOR INSTRUCTIONS

_____   My birthday is: _____

Teacher   Month – Day – Year

I am a (circle one): GIRL BOY   Race: (CIRCLE ANY THAT APPLY)
                                        AFRICAN AMERICAN
                                        ASIAN
                                        CAUCASIAN
                                        HISPANIC
                                        NATIVE AMERICAN
                                        OTHER: _____

APPENDIX E

CLASSROOM SCRIPT AND DISTRACTION "MENTAL LOGIC GAME"

[After teacher divides class up...]

Hi, everybody. My name is Mr. Martens and this is [name all assistants]. **We're here doing a research project with Dr. White and Dr. Mounts from NIU. Your parents gave us permission to ask you to participate in our project. Our project is about behaviors that some kids do. Some of the behaviors might describe you, but others might not. We'll ask you to fill in circles showing how much each behavior describes you and how much it describes each of your classmates. Also, our project is about what your goals would be in different situations. We'll ask you to read six possible situations or stories and decide how much you would want each of four possible goals by filling in circles. So, all together, if you choose to help us with our project, you would fill out a few paper and pencil forms describing behaviors and goals. BUT, on those forms we only want to know what YOU think.**

[Write "confidential" on the board]

In order to keep what you think private, we will all treat everyone's answers as "confidential." Confidential means that what you say is private. We won't tell anyone what you wrote; not your teachers, not your parents, and not your friends. No one. We also want you to treat each others answers as "confidential." Don't tell others what you wrote and don't ask others what they wrote. Keep your answers to yourselves. Of course, YOU can still tell your parents if you want to. The point is, only you can decide to tell your parents, because we won't tell anyone what you wrote. So, by helping us with our project you agree that all of us will keep everyone's answers "confidential." Does anyone have any questions so far? Okay. Each of you needs to get a folder out that you can stand up on your desk like a screen. We'll use our screens to keep answers private.

[Answer questions; distribute assent forms]

Okay, the first form you're getting says, "I have been...[read assent form verbatim to students]...**even now."**

Do any of you have any questions?"

[Answer questions, complete assent forms, collect assent forms] REMOVE THE NAME OF ANY STUDENT CHOOSING NOT TO PARTICIPATE FROM ALL PEER NOMS! [Also, do this immediately if someone decides to stop after we've started, regardless of prior consent and assent]

[After an assent form is collected & is marked "YES," give that student his/her packet with the EXACT SAME PARTICIPANT NUMBER...DOUBLE CHECK]

[While packets are being handed out say...] **Don't start your packets yet. We'll all start together.**

[After all assent forms have been collected and packets distributed...]

Okay, the next forms have a behavior across the top and kids' names down the side. Each page has a different question across the top. [researchers ensure correct form]. **It says,...** [read instructions to peer nom verbatim]**... Does anyone have questions? Go ahead and fill it out. Turn it upside down when you're done. If you have any questions, raise your hand, and one of us will help you. Do not ask your neighbor questions; ask one of us from NIU.**

[Circulate & answer questions. After everyone is done with peer nom...]

The next forms describe six different situations. On each page, read the situation. Answer how important each goal underneath would be to you. Circle one number for each goal, like you did on the last form. Go ahead. Also, raise you hand when you reach number seven.

[Students will work at different rates. Circulate and answer questions. When students reach the last question (#7), make sure they understand that they are to go back over the situations and circle only one of the four goals (a, b, c, or d). After everyone is finished...]

Thanks for you help everyone. You've been great. In the forms you just read, there were a lot of behaviors people should not do, like hitting, fighting, gossiping, and excluding others. What other kinds of behaviors could kids do instead to help everyone **feel comfortable and welcome at school?** [discuss prosocial alternatives; e.g., sharing, talking out problems, getting help from others, asking questions, showing respect, calm voices, deep breaths, count to 10, etc.; make a list of prosocial answers given by students] **In the end, it's very important that we all do our best to treat one another with kindness and respect. Remember, try to talk problems out or else ask someone for help.**

[Distraction activity: "Mental Logic Game," formerly known as the "memory game"]

The last thing we'll do today is solve some mental or logic problems. [Present class with mental/logic problems such as...]
- 1, 2, 2, 3, 3, ___   What comes next? [3]
- 1, 11, 21, 1211, _____   What comes next? [111221]
- Who is the child of the child of the child of your great grandmother?
- What is this...
    o   Neighbor Door Neighbor   [next door neighbors]
- There is a man looking at someone's picture and says, "Brothers and sisters, I have none, but this man's father is my father's son." Whose picture is the man looking at?   [His own]
- At a party, the guest of honor said, "The day before yesterday I was only 11, next year, I will be 14." How is this possible?   [Party = Jan 1st; Birthday = Dec 31st]

Thanks again for your help.

APPENDIX F

INTERITEM CORRELATIONS FOR PEER-NOMINATION INSTRUMENT

Appendix F

Intercorrelations of Peer-Nomination Items

Item	1	2	3	4	5	6	7
1. Gets along well with others	--	.397	.381	.421	-.276	-.291	-.373
2. Has a good sense of humor		--	.450	.414	-.112	-.119	-.131
3. You like to spend a lot of time with			--	.416	-.065	-.075	-.138
4. Is well liked by other kids				--	-.176	-.169	-.255
5. Hits, kicks, or pushes others					--	.781	.633
6. Gets into physical fights with others						--	.612
7. Insults others to their face							--
8. Pushes and shoves others around							
9. Ignores others or stops talking to them							
10. Tells her/his friends to stop liking someone							
11. Tells others (s)he won't be their friend anymore							
12. Keeps others from being in her/his group of friends							
13. Threatens and bullies others							
14. Gets others to gang up on a peer							
15. Plays mean tricks							
16. Picks on smaller kids							
17. When teased, strikes back							
18. Blames others in conflicts							
19. Overreacts angrily to accidents							
20. Is a poor loser							

Appendix F (continued)

Intercorrelations of Peer-Nomination Items

Item	8	9	10	11	12	13	14
1. Gets along well with others	-.346	-.269	-.272	-.332	-.386	-.346	-.350
2. Has a good sense of humor	-.112	-.125	-.186	-.195	-.199	-.147	-.139
3. You like to spend a lot of time with	-.114	-.133	-.110	-.186	-.180	-.099	-.065
4. Is well liked by other kids	-.179	-.189	-.221	-.236	-.228	-.215	-.186
5. Hits, kicks, or pushes others	.745	.504	.567	.484	.511	.680	.607
6. Gets into physical fights with others	.735	.503	.547	.474	.523	.701	.637
7. Insults others to their face	.635	.468	.454	.479	.480	.652	.545
8. Pushes and shoves others around	--	.486	.551	.547	.614	.665	.616
9. Ignores others or stops talking to them		--	.546	.472	.505	.506	.470
10. Tells her/his friends to stop liking someone			--	.556	.580	.521	.565
11. Tells others (s)he won't be their friend anymore				--	.608	.416	.517
12. Keeps others from being in her/his group of friends					--	.525	.612
13. Threatens and bullies others						--	.600
14. Gets others to gang up on a peer							--
15. Plays mean tricks							
16. Picks on smaller kids							
17. When teased, strikes back							
18. Blames others in conflicts							
19. Overreacts angrily to accidents							
20. Is a poor loser							

Appendix F (continued)

Intercorrelations of Peer-Nomination Items

Item	15	16	17	18	19	20
1. Gets along well with others	-.348	-.296	-.310	-.345	-.347	-.373
2. Has a good sense of humor	-.139	-.122	-.099	-.215	-.184	-.162
3. You like to spend a lot of time with	-.118	-.116	-.047*	-.196	-.155	-.185
4. Is well liked by other kids	-.203	-.157	-.188	-.318	-.276	-.269
5. Hits, kicks, or pushes others	.730	.665	.633	.603	.608	.528
6. Gets into physical fights with others	.702	.687	.613	.615	.584	.525
7. Insults others to their face	.624	.593	.523	.622	.615	.518
8. Pushes and shoves others around	.737	.721	.584	.605	.609	.608
9. Ignores others or stops talking to them	.547	.485	.504	.501	.517	.436
10. Tells her/his friends to stop liking someone	.581	.557	.496	.533	.511	.473
11. Tells others (s)he won't be their friend anymore	.580	.522	.423	.549	.526	.546
12. Keeps others from being in her/his group of friends	.603	.556	.485	.538	.535	.558
13. Threatens and bullies others	.699	.603	.573	.545	.577	.524
14. Gets others to gang up on a peer	.672	.614	.534	.577	.560	.507
15. Plays mean tricks	--	.711	.602	.639	.604	.582
16. Picks on smaller kids		--	.519	.600	.551	.541
17. When teased, strikes back			--	.530	.553	.489
18. Blames others in conflicts				--	.608	.548
19. Overreacts angrily to accidents					--	.558
20. Is a poor loser						--

Note: For all correlations, $p < .01$ and $n = 2063$.

*$p < .05$.