

Proactive and Reactive Aggression and Cognitive and Affective Empathy among Students in Middle Childhood

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Abstract

Youth who engage in proactive and reactive aggression are more likely to be rejected by peers than those not involved in bully-victim conflicts. With poor social information processing skills, children engaging in bullying behaviors do not possess the appropriate levels of affective and cognitive empathy to defuse aggressive situations. Youth with low levels of cognitive empathy may understand the emotions of others but choose not to react to these feelings. This research study examines the relationship between proactive and reactive aggression and cognitive and affective empathy in typically-developing children, age nine to eleven. The research findings show that cognitive and affective empathy are not significant predictors of proactive aggression; however, they are significant predictors of reactive aggression.

Keywords: Affective Empathy; Cognitive Empathy; Reactive Aggression; Proactive Aggression

Introduction

One of the strongest predictors of peer rejection among youth is the use of aggression [1]. Dodge et al. [2] presented a social-information processing model to explain aggression in youth. These researchers found that attributional biases and deficits were positively associated with children who used reactive aggression, which involves a hostile response to perceived aggression from others. In contrast, attributional biases and deficits were not found to be elevated in children who use proactive aggression, which involves a more purposeful intent to harm in comparison to reactive aggression. The relationship between empathy and aggression in youth has been comprehensively researched, and has yielded mixed results [3].

One potential explanation for the mixed results is the historic use of a general measurement of empathy, whereas some more recent studies have differentiated between cognitive empathy, which involves the cognitive ability to understand the likely thoughts and feelings of others, versus affective empathy, which has been defined as the ability to share another's emotions [4,5]. Some studies have found that proactive aggression is negatively associated with affective empathy [3], but positively associated with cognitive empathy [6,7]. The purpose of this study is to examine the relationship between proactive and reactive aggression and cognitive and affective empathy in a late childhood sample, which has not heretofore been widely investigated.

Aggression

Proactive aggression

Dodge et al. [2] theorized that a primary distinction between aggressive and non-aggressive children is the purpose for engaging in aggression. Proactive aggression is "motivated by the desire to reach a specific goal" [8] and is systematically planned and unprovoked [9, 10]. It can be used to gain power, dominate, or intimidate [9-11] for the aggressor's personal satisfaction [12]. Children who use proactive aggression are also known as "offensive aggressors" and "cold-blooded" aggressors [11].

Proactive aggressors exhibit methodical and intentionally-driven behaviors, which are related to delinquency, criminality, and social withdrawal [13]. However, proactively aggressive children are often viewed as leaders with a sense of humor [14]. Raine et al. [15] found that male adolescents who use proactive aggression were described as being "psychopathy-prone, seriously violent, and emanating from a poor social background". Proactive aggression may be supported through operant conditioning when aggressive children see positive outcomes associated with their behaviors [14, 16].

Reactive aggression

Reactive aggression [17] is committed in "anger or frustration or in response to provocation" [8]. It is derived from anger, fear, or impulsivity as reactions to perceived or threatening stimuli [16]. Dodge and Coie [14] discovered that reactive aggression is connected with attention difficulties and adjustment concerns with peer relationships. Children use reactive aggression to alleviate their own anger, frustration, or stress in a social situation and typically demonstrate remorse after they have behaved in this manner [12].

Vitaro et al. [11] described children who use reactive aggression as “defensive,” “hot-blooded,” “impulsive,” and “retaliatory”. Reactive aggression has been connected with peer rejection and the likelihood to perceive hostility in social situations [13]. Male adolescents who use reactive aggression are “more impulsive, anxious, and have schizophrenia-spectrum characteristics hallmarked by reality distortion and information-processing abnormalities” [15].

Social information processing

Social information processing errors, such as the perception of a threat that does not exist, can cause aggressive youths to retaliate aggressively [14]. Errors and biases in understanding perceived threats leads to reactive aggression to protect oneself. The social information processing model of social competence [18] posits that socially competent individuals will understand clues related to provocation, interpret the clues accurately, assess appropriate behavioral responses, evaluate probable outcomes of the responses, and select a competent response [14]. Youths who inefficiently or inaccurately process social information may respond aggressively or inappropriately when provoked. The child with poor social information processing skills will not understand why the behavior is inappropriate because he or she will see it as an acceptable response to the provocation.

Empathy

There is evidence to suggest that cognitive empathy is distinct from affective empathy. Cognitive empathy is the ability of one person to understand another’s emotions [7], whereas affective empathy is the ability for a person to share the emotions of others [5].

Cognitive empathy

Cognitive empathy refers to the skills of recognizing others’ emotions and understanding others’ perspectives [4,7,19]. Cognitive empathy allows the ability to apprehend, appreciate, and tolerate the viewpoints of others while engaging in non-aggressive behaviors [20]. Cognitive empathy also evolves with age [21]. Children with lower levels of cognitive empathy are less able to interpret the feelings of others [6]. If children have low cognitive empathy, they may create inaccurate attributions about other children’s behaviors and engage in forms of reactive aggression [6,7,20,22].

Cognitive empathy and aggression

The relationship between cognitive empathy and aggression is not clear. Some research has found that cognitive empathy lessened or eased aggressive acts [20, 23]. Other research has found a weak relationship or no relationship between these constructs [24], suggesting that cognitive empathy may not inhibit aggression at all. For some childhood perpetrators of bullying, however, the individuals have good theory of mind skills and are aware of the emotions of others, which they use to bully and manipulate peers [25,26].

While children who possess cognitive empathy typically display prosocial behaviors, not all studies found this clear relationship [26]. Generic prosocial behaviors may be motivated by self-gain rather than benefitting another [27]. Altruistic children however, display a high motivation to help others and their actions appear to be promoted by cognitive empathy [28]. Individuals with low cognitive empathy are not able to accurately understand or interpret the clues related to provocation [14]. This may lead to inaccurate responses to

provocation and aggressive responses. With a lower ability to understand social clues and another person’s intentions, youth with low cognitive empathy typically respond to provocation with aggression.

Affective empathy

Affective empathy is the ability to understand and share the emotions of others [5,19]. Individuals with affective empathy experience an appropriate emotional response when confronted with the mental state of another person [29]. Those high in affective empathy are able to share the pain of a victim and experience the emotional state and discomfort of the victim. It has been suggested that children high in affective empathy avoid aggression for causing distress in others and thus themselves [30].

Affective empathy and aggression

Several studies have shown that affective empathy is more closely linked to aggression than cognitive empathy [6,7]. Other studies found that aggressive males have lower affective empathy, but did not differ from nonaggressive males in their cognitive empathy [31]. Shechtman [31] also found that aggressive males showed lower levels of affective empathy and felt more support for their aggression than non-aggressive youth.

A lack of affective empathy can be exhibited through callous and unemotional traits that allow a person to coldly prey upon others [32-34]. Such characteristics are associated with serious conduct problems that interfere with the development of stable and supportive relationships [35]. Males typically display lower affective empathy and the ability to identify others’ emotions [36]. This finding has been supported by other studies that found callous and unemotional youth to have fewer social information processing systems [32]. With fewer social information processing systems relating to these lower levels of affective empathy, callous and unemotional youth tend to engage in higher rates of proactive aggression [37], expect positive outcomes from this aggression, and anticipate fewer consequences for their behaviors [38,39].

Significance and Purpose

Because there are few available studies that focus on children age nine to eleven in regard to the understanding of the relationship between proactive and reactive aggression and cognitive and affective empathy, the following study was conducted. In addition, other studies have not examined aggression in typically-developing populations of children. The research hypotheses are that proactive aggression will be positively related to cognitive empathy, whereas reactive aggression will be negatively related to both proactive and reactive aggression.

Methodology

Participants

The sample consisted of 251 children in grades 4 and 5, ages 9-11, from a small, rural school district in western Pennsylvania. Approximately 50% of the children who participated were male. Fourth-grade children comprised about 51% of the sample, while fifth-grade children comprised about 49% of the sample. The sample consisted of 39% of nine-year-old children, 53% of ten-year-old children, and 8% 11-year-old children, with the mean age being 9.69.

Approximately 32% of the children in the 560 students in the school from which the sample was gathered, which was comprised of grades 3-5, live at or below the poverty level, as indicated by the free and reduced-price lunch program. Ninety-six percent of the students within the school were Caucasian, non-Hispanic, while the remaining 4% include multi-racial, African American, and Asian American students. Approximately 13% of the students in this elementary school received special education services.

Instrumentation

The Basic Empathy Scale (BES) [40] and Reactive-Proactive Aggression Questionnaire-Child (RPQ-C) [15] were used in this study. Modifications were made to increase the utility of these instruments with middle-elementary aged children. Specifically, all statements on both instruments were read aloud to students to ensure their understanding and to maintain their attention. Furthermore, one word in the directions and five statements on the BES were slightly altered to ensure developmentally and culturally-appropriate language.

The BES [40] is 20-item, 5-point Likert scale, self-report questionnaire, which is designed to measure affective and cognitive empathy. The BES was grounded in the definition of empathy generated by Cohen and Strayer [36] “as the understanding and sharing in another’s emotional state or context”. In the BES, affective empathy is defined as the ability to feel an appropriate emotional response when one is confronted with the mental state attributed to another person [15], and cognitive empathy is defined as the understanding of another person’s affective state [4]. An example of a statement on the BES is “I can usually work out when my friends are scared.” Nine of the 20 statements are coded *cognitive*, and 11 of the 20 statements are coded *affective*. The BES requires both positive and negative scoring. Twelve of the 20 statements are positively scored, and among these 12 statements, six are coded cognitive, whereas the remaining six are coded affective. Eight of the 20 statements are negatively scored; among these eight statements, three are coded cognitive, and five are coded affective.

The BES has strong psychometric properties. Albiero et al. [40] found the BES to have “satisfactory internal consistency for both the scale and its subscales”. The BES has an overall reliability of .87, with Cronbach alpha values of .74 for affective empathy, .75 for cognitive empathy, and .81 for total empathy [6]. A confirmatory factor analysis yielded a two-dimensional model that contains the distinct yet interrelated factors of cognitive and affective empathy [6]. Although the BES has not been used in many published studies, it has been used and validated both nationally and internationally [6,40].

The RPQ-C [15] is designed to measure proactive and reactive aggression in children. It is comprised of 23 statements on a Likert-type measure of 0 (never), 1 (sometimes), and 2 (always). An example of a statement on the RPQ-C is “How often have you yelled at others when they have annoyed you?” Twelve of the items are categorized as *Proactive Aggression*, whereas the remaining 11 are categorized as *Reactive Aggression*.

The psychometric properties have not yet been determined for the RPQ-C; however, the administration manual of the RPQ reports high internal consistency, with .86 for proactive regression, .84 for reactive aggression, and .90 for total aggression [41]. The proactive-reactive scales on the RPQ yielded coefficient alphas of .74 and .78, respectively [8]. In this study, the RPQ-C yielded a Cronbach’s alpha of .82 for reactive aggression, .63 for proactive aggression, and .84 for total

aggression. In the original validity study of the RPQ conducted by Raine et al. [15], a confirmatory factor analysis demonstrated that all item-total correlations were .40 or greater.

Procedure

Parental permission and student assent was obtained for 251 students. Students for whom parental permission had been obtained were presented with a request for assent during the fall of 2012. A school counseling intern not associated with the study read aloud to the children the child assent form (as children followed along silently) to ensure their understanding. The school counselor intern provided a definition of confidentiality to the students by explaining it as “keeping information private” and assuring them that their responses would not be recorded along with their name or any other identifying information so that no one would know how they responded.

For the research protocol, the first author read aloud all statements and questions, while students completed an online questionnaire to ensure understanding. She reviewed the meanings of “strongly agree” versus “strongly disagree.” Although modifications were made to some of the statements and a child version of the questionnaire was used, some children still had difficulty understanding the meanings of several of the words and phrases. For example, on the BES, two statements required an additional explanation: Statement #1, “My friend’s feelings don’t affect me much,” and Statement #13, “Seeing a person who has been angered has no effect on my feelings.” Likewise, on the RPQ-C, two questions required an additional explanation: Question # 25: “How often have you had fights with others to show who was on top?” and Question #35, “How often have you used physical force to get others to do what you want?”

Results

The means and standard deviations for the sample and by gender for affective and cognitive empathy and proactive and reactive aggression are listed in Table 1.

Gender		Affective Empathy	Cognitive Empathy	Proactive Aggression	Reactive Aggression
Female	M	3.51	4.00	.12	.62
	SD	.63	.54	.16	.37
Male	M	3.12	3.73	.18	.77
	SD	.59	.59	.19	.39
Total	M	3.31	3.87	.15	.69
	SD	.64	.58	.17	.39

Table 1: Descriptive Statistics.

There were gender differences on proactive aggression; $F(1, 247) = 7.24, p < .01$, and reactive aggression, $F(1, 247) = 8.61, p < .01$ (Table 2).

Gender was found to be predictive of reactive aggression; $R = .18, R^2 = .03, F(1, 247) = 8.61, p < .05$. Therefore, to exclude the effects of gender on reactive aggression, we used gender as the control variable. After controlling for gender, affective empathy and cognitive empathy

were not significant predictors of reactive aggression; $R = .04$, $R^2 = .01$, $F(2, 245) = 1.51$, $p = .222$.

Source	Variable	SS	df	MS	F	Sig.
Gender	Proactive Aggression	.22	1	.22	7.24	.008
	Reactive Aggression	1.25	1	1.25	8.61	.004
Error	Proactive Aggression	7.34	247	.05		
	Reactive Aggression	35.71	247	.15		
Total	Proactive Aggression	13.31	249			
	Reactive Aggression	157.03	249			

Table 2: Gender Differences in Reactive and Proactive Aggression.

Gender was also found to significantly predict proactive aggression; $R = .17$, $R^2 = .03$, $F(1, 247) = 7.24$, $p < .05$. After controlling for gender, affective empathy and cognitive empathy were not significant predictors of proactive aggression; $R = .03$, $R^2 = .01$, $F(2, 245) = 1.26$, $p = .286$. There were gender differences on affective empathy: $F(1/247) = 25.51$, $p < .01$, and cognitive empathy: $F(1/247) = 13.67$, $p < .01$ (Table 3).

Source	Variable	SS	df	MS	F	Sig.
Gender	Affective Empathy	9.45	1	9.45	25.51	.000
	Cognitive Empathy	4.35	1	4.35	13.67	.000
Error	Affective Empathy	91.49	247	.37		
	Cognitive Empathy	78.59	247	.32		
Total	Affective Empathy	2834.98	249			
	Cognitive Empathy	3802.16	249			

Table 3: Gender differences in affective and cognitive empathy.

Discussion

The failure to identify a relationship between cognitive empathy and proactive aggression is somewhat surprising. Some studies have found [42] that those with high levels of cognitive empathy are more easily able to manipulate others and to be calculating [42]. Caravita et al. [26] discovered that both females and males with higher levels of cognitive empathy engaged in traditional bullying more than those who did not have high levels of cognitive empathy. Similarly, Sutton et al. [7] revealed a positive relationship between cognitive empathy and bullying, thereby implying that those who bully have a superior “theory of mind skills” and are able to understand others’ emotions [43].

One interpretation for this apparent contradiction between the literature and the findings of this study is that cognitive empathy may be predictive of bullying, but not necessarily proactive aggression. The types of aggression defined as proactive by the instrument involved primarily overt and physical forms of aggression, including damaging property, yelling, threatening use of a weapon, etc. Bullying is considered to be a form of proactive aggression, but the term, proactive aggression, also includes behaviors that are not considered to be bullying. Although definitions of bullying vary, most researchers

have been able to come to agreement about the three common elements of bullying behavior, known as the tripartite definition of bullying. These three components include the recognition that: 1) bullying is a form of instrumental aggression, meaning that it is proactive and frequently not a response to aggressive behavior demonstrated by a victim [44]; 2) a power differential exists between perpetrator and victim that results in the victim being unable to defend himself or herself from the bully’s aggression [44] and; 3) bullying behavior tends to be repeated over time, although in some cases, a single incident can also be seen as an instance of this type of aggression [44].

It is possible that cognitive empathy is predictive of more indirect forms of aggression. Indeed, there is research to suggest that bullying and aggression are not highly correlated [45]. Relational aggression is considered an indirect form of aggression with the specific goal of damaging a friendship. It involves using the power of that relationship to manipulate another person, and can entail threatening to end a relationship, gaining leverage within a friendship, or insulting the person based on having an understanding what would be particularly to that individual, etc. [46]. Social aggression involves damaging another’s reputation or status through manipulating how others perceive the respective individual. Social aggression uses the social group to inflict harm through such behaviors as gossiping, spreading rumors, and social isolation. The damage of social aggression occurs through a diminishment in an individual’s social standing [47] among peers, subsequently negatively altering adolescents’ social self-perceptions.

Relational and social bullying may require cognitive empathy in contrast to the skills necessary to perpetrate overt, physical aggression. Because the use of relational and social aggression assumes the knowledge of social dynamics, it is likely that perpetrators of these forms of bullying require the ability to recognize others’ emotions and understand others’ perspectives to determine what would be the most emotionally painful for the victim. The perpetration of direct forms of bullying, such as physical bullying, only requires the knowledge that a physical assault is likely to hurt another’s body. Less cognitive sophistication is required to use direct forms of bullying.

The finding that male children report use or more proactive and reactive aggression is consistent with the research literature [48]. The finding that girls had higher levels of cognitive and affective empathy contributed to the mixed results in the research literature. Some studies such as Mestre et al. [49] have found that early adolescent girls have higher levels of both affective and cognitive empathy than early adolescent boys, whereas have revealed no differences [36]. Caravita et al. [26] suggested that studies examining genders using self-report measures, such as the one used in this study, are likely to reveal that females have elevated empathy levels in comparison because females perceive themselves to be more empathic, but that performance based assessments of empathy are less likely to reveal such gender differences.

Limitations of the Study

A major limitation of this study was the lack of variance for the variables of proactive and reactive aggression, as the children reported very low levels of proactive and reactive aggression that are unlikely to be true reflections of their behavior, based upon previous estimates of children’s aggressive behavior. Future studies should use methods other than self-report with children between the ages of 9-11.

Teachers' observations and evaluations, parent or caregivers' observations, as well as peer reports would be useful data to include [50]. Including children's self-reports with their caregivers', educators' and peers' perspectives would present a more comprehensive and rich examination of children's behaviors.

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