CrossMark

Preschool Children's Beliefs About the Acceptability of Relational and Physical Aggression

Cara S. Swit[1] · Anne McMaugh[1] · Wayne A. Warburton[2]

Abstract   This research examined differences in beliefs about the acceptability of aggression and behavioral responses to aggression of preschool-aged children. Two groups, identified from teacher ratings, participated in the research. One group of children exhibited relationally aggressive behaviors, and a comparison group was identified with non-aggressive behaviors. Children's social skills were assessed through observations. Beliefs about the acceptability of aggression and behavioral responses to aggression were assessed using four vignettes presented with toy figures. Children were encouraged to use the figurines to verbalize or enact responses. Children's responses were analyzed and could be categorized as problem-solving or aggressive responses. There were no significant differences between groups on beliefs about the acceptability of aggression. However, younger children held more accepting beliefs about aggression. The methodological technique identified that relationally aggressive children used more problem-solving and conflict resolution strategies compared to children in the comparison group. These findings have important implications for educators in recognizing that not all forms of aggression are associated with fewer prosocial problem-solving skills. Methodological techniques employed in this study are recommended for use in the delivery of intervention programs aimed at reducing aggressive behaviors of preschool children.

✉ Cara S. Swit
cara.swit@mq.edu.au

Anne McMaugh
anne.mcmaugh@mq.edu.au

Wayne A. Warburton
wayne.warburton@mq.edu.au

[1]   School of Education, Macquarie University, Sydney, NSW 2109, Australia

[2]   Department of Psychology, Macquarie University, Sydney, NSW 2109, Australia

🖄 Springer

Résumé   Cette recherche a examiné les différences de croyances chez les enfants d'âge préscolaire en ce qui concerne l'acceptabilité de l'agression et des comportements en réponse à l'agression. Deux groupes, constitués à partir des évaluations de l'enseignant, ont participé à la recherche. Les enfants d'un groupe montraient des comportements relationnels agressifs, tandis que ceux du groupe de comparaison avaient des comportements non agressifs. Les compétences sociales des enfants étaient évaluées par observation. Les croyances relatives à l'acceptabilité des réponses d'agression et de comportement à l'agression étaient évaluées à l'aide de courts scénarios mettant en scène des figurines. Les enfants étaient invités à utiliser les figurines pour verbaliser ou jouer leurs réponses. Les réponses des enfants ont été analysées et ont pu être réparties en deux catégories: réponses de résolution de problème ou agressives. Il n'y avait pas de différence significative entre les croyances des groupes relativement à l'acceptabilité de l'agression. Cependant, les enfants plus jeunes montraient une plus grande acceptation de l'agression dans leurs croyances. La méthodologie utilisée a permis de relever que les enfants ayant des relations agressives utilisaient plus souvent des stratégies de résolution de problèmes et de conflits que les enfants du groupe de comparaison. Ces résultats pourraient avoir des implications importantes pour les éducateurs en reconnaissant que toutes les formes d'agression ne sont pas forcément associées à moins d'habiletés sociales de résolution de problème. Il est recommandé que les techniques méthodologiques utilisées dans cette étude le soient aussi dans l'offre de programmes d'interventions visant à réduire les comportements agressifs d'enfants d'âge préscolaire

Resumen   Esta investigación examina las diferencias en las creencias acerca de cómo la agresión en niños de edad preescolar es aceptada y abordada. Dos grupos, identificados a partir de las categorizaciones de los maestros, participaron en la investigación. El primer grupo es el que fue identificado por mostrar conductas agresivas relacionales. El segundo es el de comparación. Las habilidades sociales de los niños fueron evaluadas a través de observaciones. Las creencias acerca de la aceptación de la agresión y las respuestas al comportamiento agresivo se evaluaron con cuatro viñetas presentadas con figuras de juguete. Los niños fueron animados a utilizar las figurillas para verbalizar o representar las respuestas. Las respuestas de los niños se catalogaron como respuestas para resolver problemas o respuestas agresivas. No hubo diferencias significativas entre los grupos en cuanto a las creencias acerca de la aceptabilidad de la agresión. Sin embargo, los niños más pequeños mostraron más aceptación acerca de la agresión. La técnica metodológica también sugirió que los niños que muestran relaciones agresivas utilizan más estrategias para la resolución de conflictos en comparación con los niños en el grupo de comparación. Estos resultados tienen importantes implicancias para los educadores ya que sugieren que no todas las formas de agresión se asocian con menos habilidades prosociales para resolver problemas. Las técnicas metodológicas

empleadas en este estudio se podrían utilizar en programas de intervención para reducir conductas agresivas en niños de edad preescolar

Introduction

Early childhood is a critical period for identifying and intervening in children's aggression. This aggression can take a number of forms, all of which meet the key definition of aggression which is widely understood to be an act of intentional harm directed toward another person who is motivated to avoid that harm (Anderson and Bushman 2002; Warburton and Anderson 2015). *Relational aggression* is defined as aggressive behavior that inflicts harm through the intentional harming or manipulation of social relationships (Crick and Grotpeter 1995). *Physical aggression*, on the other hand, is defined as the intent to hurt, harm, or injure another person using physical force (Ostrov 2006). While physical aggression in early childhood is well researched (Côté et al. 2007), it is also known that children as young as 3 years engage in relational aggression (Ostrov et al. 2013; Swit and McMaugh 2012) and that the use of relational aggression increases with age (Vaillancourt et al. 2007). However, research about the emergence of these behaviors in early childhood is still understudied.

In recent years, researchers have paid increasing attention to the way individual beliefs impact on observed aggression in children. For example, children's beliefs about aggression (also referred to in the psychological literature as normative beliefs about aggression) have been found to guide their behavior and also influence the way children process social information (Crick and Dodge 1994; Huesmann and Guerra 1997). Beliefs that are approving of the use of aggression have been shown to be robust predictors of aggressive behavior in adolescents and adults (Averdijk et al. 2011; Werner and Hill 2010; Werner and Nixon 2005). However, there is a need to explore young children's beliefs about the acceptability of aggression and whether these beliefs influence their behavioral responses or are related to their engagement in relationally aggressive behaviors in early childhood. This information will support the early identification of a child's likelihood of using an aggressive response, allowing for earlier intervention. Current interventions to address relational aggression in early childhood focus on teaching prosocial problem-solving skills (see Leff et al. 2010 for a review). This review of extant literature suggests that there may also be merit in considering children's beliefs about the acceptability of aggression because these beliefs may influence the expression of aggressive behaviors.

Beliefs About the Acceptability of Aggression

Social cognitive theories suggest that people from a young age internalize standards for social behaviors, including aggressive behavior (Crick and Dodge 1994; Huesmann 1988). A key component of social cognition is the development of attitudes about the acceptability or unacceptability of different forms of aggressive behaviors (Huesmann and Guerra 1997). Children's beliefs about the acceptability

of aggression have been shown to play a key role in predicting children's actual aggressive behavior (Huesmann and Guerra 1997; Werner and Nixon 2005). Children with such beliefs appear to have preferential access to aggressive responses when resolving conflict and are typically more likely to engage in higher levels of aggressive behavior than a child who believes that it is inappropriate to engage in aggression (Huesmann and Guerra 1997; Werner and Nixon 2005). Numerous studies have found that children and adolescents who approve of aggression are more likely to be perceived as aggressive individuals by their parents (Zelli et al. 1999), their teachers (Henry et al. 2000), and their peers (Murray-Close et al. 2006). Research on relational aggression has also found that children and adolescents who hold beliefs accepting of relational aggression are more likely to engage in relationally aggressive behaviors (Werner and Hill 2010; Werner and Nixon 2005). Although previous research suggests that beliefs about the acceptability of aggression are predictive of aggressive behaviors, the findings have been limited to child and adolescent populations and little is known about this association in early childhood populations.

Social Information Processing and Aggression

Aggressive behavior is also frequently explained in terms of biases or deficits in the way people process social information. According to the Social Information Processing Model (SIP; Crick and Dodge 1994) and the Unified Information Processing Model (UIP; Huesmann 1998), children's beliefs influence their interpretations of social events and, in turn, influence their behavioral responses to different social situations. Each model describes a "database" or knowledge about social behavior that includes attitudes and beliefs such as beliefs about the acceptability of aggression that are stored and recalled by the child to enact certain behaviors. The models propose a series of steps theoretically explaining the processes of interpreting and responding to social information. In the early stages of processing or understanding a social event, these theories suggest people encode and interpret social cues from the environment and generate potential behavioral responses. People then evaluate these response options and select a response for behavioral enactment. These steps provide a framework for identifying potential differences in the ways aggressive and non-aggressive children process social information. According to both these models, children who have a bias or deficit at one or more steps in the informational processing sequence are more likely to use aggressive behaviors (Crick and Dodge 1994; Huesmann 1998).

The focus of the present study is on children's theorized processes of evaluating response options and selecting responses for behavioral enactment. These are processes by which a child makes their response choices in different social situations. Research has shown that such choices are influenced by the child's acceptability beliefs (Crick and Dodge 1994; Huesmann and Guerra 1997; Werner and Nixon 2005), whereby the behaviors children consider more acceptable are likely to be reflected in their behavioral response (Bellmore et al. 2005). Furthermore, according to both models, behavioral response selection immediately precedes behavioral enactment. Therefore, children's behavioral response selection

should be a good indicator of their likelihood of using aggressive or non-aggressive behavior (Bellmore et al. 2005). It is expected that this information will contribute to early childhood educators' understanding about why some children engage in aggression, allowing for interventions to more effectively prevent the early onset of aggressive behaviors by targeting beliefs about the acceptability of aggression rather than just behavioral enactment.

Children who use high levels of aggression have typically been considered as having deficits or biases at one or more of the steps of processing social information, particularly in the assessment of social cues and in accessing responses to social situations (Crick and Dodge 1994). Contrary to these findings, several studies assessing relational aggression during early childhood through to adolescence have found that relationally aggressive children may have more sophisticated social cognition than non-aggressive children (e.g., Crick and Rose 2000; Nelson et al. 2005, 2010). In particular, Nelson et al. (2010) found that preschool-aged children who use a combination of relational aggression and prosocial behaviors experience greater social impact. That is, they are prominent among their peers and may even be popular, buffering them from peer rejection. As such, some children who use relational aggression may be more social cognitively advanced as they are able to understand and use social information to either help or more effectively harm others. While this is a significant departure from the traditional view that aggression is linked to biases and deficits in processing of social information (Cillessen and Mayeux 2004), the social cognitive differences and social skills of relationally aggressive and non-aggressive children need to be explored further in early childhood, where there are little empirical data.

The lack of empirical research on aggression-related social information processing in early childhood populations may be due to (a) the inherent challenges of assessing very young children's social cognitive processes, and (b) limitations related to young children's ability to understand instructions and express their views. Previous studies of young children's social cognitive processes (e.g., Goldstein et al. 2002) have primarily relied on the verbal delivery of hypothetical vignettes with basic cartoon-style pictorial representations of a provocation followed by a verbal questioning procedure. Methods such as this may be considered challenging for some preschool-aged children due to the heavy verbal processing demands required of the procedure. Alternatively, methods that allow children to engage with tangible, meaningful objects to express their thoughts and beliefs might reduce the limitations often associated with use of verbal protocols with very young children (Stalker and Connors 2003).

The Present Study

The present study employed a purpose-built "preschooler-friendly" measure of children's beliefs about the acceptability of relational and physical aggression and behavioral responses to aggressive provocations. Duplo toy figurines were used to enact the aggression scenarios, and children were given simple verbal prompts to use the figurines to enact their response to the questions about the scenarios. This

procedure aimed to reduce the verbal demands of the research protocol and deliver a clear understanding of the child's intent.

The first goal of the study was to examine relationally aggressive and non-aggressive children's beliefs about the acceptability of relational and physical aggression. Based on previous research conducted by Goldstein et al. (2002), it was expected that children would rate relational forms of aggression as more acceptable than physical forms of aggression. It was also predicted that children rated as highly relationally aggressive, compared to the non-aggressive comparison group, would hold beliefs more accepting of relational aggression. It was expected that younger children would view both relational and physical forms of aggression as more acceptable than older children due to having less understanding about the consequences of aggression (Huesmann and Guerra 1997; Werner and Hill 2010). Based on gender differences found in previous studies (Goldstein et al. 2002; Werner and Hill 2010), it was expected that girls would be more accepting of relational aggression and boys more accepting of physical aggression.

The second goal of the study was to compare relationally aggressive and non-aggressive children's behavioral response choices when faced with relational and physical provocation scenarios in the Duplo figurine task. Given the lack of previous research on young children's behavioral responses to aggressive provocation, predictions about responses and use of the new toy-based measure were considered exploratory. However, based on research with child and adolescent populations, it is expected that highly relationally aggressive children would choose more aggressive behavioral responses (Bellmore et al. 2005), while non-aggressive children would choose more prosocial problem-solving responses to solve social conflict (Boxer et al. 2004).

Methods

Participants

The directors of 11 early childhood settings in northwestern Sydney were approached and asked if they would participate in the study, with seven (64 %) agreeing to participate. Parent information packs were distributed to all families that had a child between the ages of 3 and 5 years. Parents (27 %) returned these packs to the early childhood setting on completion.

Children ($N = 68$) were rated by teachers for levels of relational and physical aggression. Of these children, nine (13 %) were identified by teachers as engaging in high levels of relational aggression (ratings greater than 1 standard deviation above the mean) and comprised the high relational aggression group for this study. Previous studies have used this standard deviation procedure to identify higher-than-normal levels of aggression in young children (e.g., Crick et al. 1997). A further nine children with average levels of aggression (at the mean) were age-matched with the relational aggression group; however, two children were lost to attrition between the phases of collecting teacher ratings of aggression and assessing children's cognitive processing, leaving seven children in the comparison group. A

small sample ($n = 3$) of children were identified as high on both relational and physical aggression; however, due to the low co-occurrence of the behaviors, these children were screened out of the sample. Children identified as relationally aggressive by their teachers ($n = 6$ girls, $n = 3$ boys) ranged in age from 46 to 64 months ($M = 54$ months; $SD = 5.7$ months) and non-aggressive children ($n = 5$ girls, $n = 2$ boys) ranged in age from 40 to 60 months ($M = 52$ months; $SD = 5.7$ months).

Measures

Teacher Report of Child Aggressive and Prosocial Behavior

The Preschool Social Behavior Scale—Teacher Form (PSBS-TF; Crick et al. 1997) was used to screen all children's aggressive and prosocial behaviors. This widely used teacher measure consists of 16 items, six of which assessed relational aggression (e.g., "This child tries to get others to dislike a peer"), six that assessed physical aggression (e.g., "This child kicks or hits others"), and four that assessed prosocial behavior (e.g., "This child is helpful to peers"). Teachers rated each child's aggressive and prosocial behaviors on a scale from 1 (*never or almost never true of this child*) to 5 (*always or almost always true of this child*). Children's individual scores were obtained by summing the ratings of items on each subscale and calculating the mean. Children were considered to be highly relationally aggressive if their scores were one standard deviation above the sample mean on the relational aggression subscale. The PSBS-TF has previously been found to have acceptable reliability ($\alpha > 0.70$; Crick and Grotpeter 1995; Ostrov and Keating 2004). High reliability was found in this study for relational aggression ($\alpha = 0.91$), physical aggression ($\alpha = 0.86$), and prosocial behavior ($\alpha = 0.82$).

Personal-Social Skills

Children's social skills were assessed with the Personal-Social Domain of the Battelle Developmental Inventory (2nd edn; Newborg 2005). The Personal-Social Domain consists of three subdomains: adult interaction, peer interaction, and self-concept and social role. Assessment of children's interactions with other children and adults was conducted during observation of naturalistic playground and classroom interactions, which allowed for an unbiased assessment of each of the children's behavior. Children's scores were summed on each subdomain, and a total score was obtained for the Personal-Social Domain.

Acceptability Beliefs and Behavioral Responses to Aggression

An interview measure was developed for the purpose of this study to assess children's beliefs about the acceptability of relational and physical aggression and to assess their behavioral responses to provocation scenarios. The interview consisted of two vignettes portraying scenarios that involved a provoking situation where another child had been relationally aggressive and two that involved physical

aggression. These vignettes were enacted using Duplo toy figurines as they provide a tangible, developmentally and socially appropriate prompt to stimulate children's understanding of the verbal protocol, and a means by which the child could respond to the vignette scenarios. Cartoon-like drawings were also used to illustrate contextual features of each story, such as a sand pit or play equipment. The interview was conducted by the primary researcher who had previous experience using similar toy-based measures to assess young children's cognitive processes (e.g., theory of mind tasks).

The protocol first described the aggressive scenario, for example, *this child is building a block tower. Another child comes over and knocks over the block tower.* The accompanying drawings featured a large Duplo block tower to provide the context of the vignette and the researcher enacting the scenario using Duplo toy figurines (see Fig. 1).

The vignette scenarios were enacted and explained so that there was no question that the aggressor's actions were intentional. Story characters were always the same gender as the participant (i.e., each vignette always featured either two girls or two boys). Vignettes were filmed for later coding. A list of the vignettes is presented in Table 1.

After the researcher enacted each vignette, children were asked a series of questions designed to assess (1) their beliefs about the acceptability of different types of aggressive provocation (relational and physical) and (2) the behavioral responses they thought the victim would use to solve the conflict. These questions were adapted from previous research by Huesmann and Guerra (1997).

Beliefs about acceptability of aggression. Children were asked, *"Is it okay to knock someone else's block tower over?"* with response options of *"yes"* or *"no."* According to the response, children then received a follow-up question. If the response was "yes," the child was asked, if it was "a little bit okay" or "very okay." If the response was "no," the child was asked, if it was "a little bit wrong" or "very wrong." Responses to the second question were scored on a scale that assessed the wrongness of each behavior as an indication of the child's level of acceptability beliefs for aggression. Beliefs were coded numerically (1 = *Aggression is very okay,* 2 = *Aggression is a little bit okay,* 3 = *Aggression is a little bit wrong,* 4 = *Aggression is very wrong*). Scales on levels of wrongness have been used previously as a measure of acceptability beliefs (e.g., Huesmann and Guerra 1997). However, no studies have employed an assessment of children's acceptability beliefs that did not require moderate levels of expressive and receptive language skills to indicate the level of wrongness they perceived in the incident. In this study, higher scores indicated beliefs for less acceptance of aggression, while lower scores indicated beliefs for greater acceptance of aggression. A total score (ranging from 1 to 8) was obtained by summing the ratings for the two relational aggression scenarios and a total score (ranging from 1 to 8) for the two physical aggression scenarios. A mean score was then derived for the level of acceptability for each type of aggression.

Behavioral response selection. In response to each of the enacted aggression scenarios, children were asked, *"What do you think the child [victim] will do now?"* and their responses were video-recorded. Two raters coded the responses using open

Fig. 1 Duplo figurine and contextual illustration

Table 1 Relational and physical aggression provocation vignettes used in the social cognitive interview

Scenario 1: *Physical Aggression*

A child is playing with some toys. Another child throws a toy at the child

Scenario 2: *Relational Aggression*

Two children are playing with the train set on the floor. Another child comes over and starts playing with the trains too. The children playing say to the other child, "You can't play with us. GO AWAY!"

Scenario 3: *Physical Aggression*

This child is building a block tower. Another child comes over and knocks over the block tower.

Scenario 4: *Relational Aggression*

A child is building a sandcastle. Another child comes over and asks to play. The child in the sandpit says "NO! You're not my friend!"

thematic coding, guided by Social Information Processing Theory. Where themes overlapped based on the coding analysis used by the coders, categories were collapsed to create the main themes. Inter-rater reliability was acceptable (ICC's > .82). Children's behavioral responses were analyzed as frequency counts and included in the quantitative analyses. Two key behavioral responses were identified: (a) problem-solving responses (e.g., "Go play with some other toys") and (b) aggressive responses (e.g., "Throw a block back at him"). Examples of prosocial problem-solving and aggressive responses provided by relationally aggressive and non-aggressive children can be found in Table 2. These responses were also coded according to provocation type (i.e., relationally aggressive provocation; physically aggressive provocation). Only three responses of "I don't know" were given during this procedure. One response was from a child who could not think of a response, and the two other responses were from children distracted by other events occurring in the early childhood setting.

Procedure

Approval from the University Human Ethics Review Committee was attained prior to the commencement of the study (HREC Ref: 5201200783). Data collection began four months after the beginning of the preschool year so that the children would

Table 2 Examples of qualitative problem-solving and aggressive solution responses to relational and physical aggression scenarios

Relational and physical aggression scenarios	Problem-solving responses	Aggressive solution responses
What would the child (victim) do after the other child said "You can't play with us. Go away!"	"Tell a grown up" "Go play with someone else"	"Say I'm not your friend" "Throw a toy at her and smack her"
What would the child (victim) do after the other child said "No you can't play with me! You are not my friend!"?	"Go do a painting" "He's going to find other friends to play with"	"Throw sand in his eyes" "Throw the bucket and shovel"
What would the child (victim) do after the block tower had been knocked over?	"Walk away" "Put the blocks away" "Build the tower back up"	"Knock her block tower over" "Punch him in the belly" "Throw the blocks at her"
What would the child (victim) do after the other child threw a toy at them?	"Go play with some different toys" "She's going to go away from her (perpetrator) and do a drawing"	"Throw the toy back at her" "Throw another toy back at him and step on him"

know each other and teachers would be good informants of their behavior. Teacher ratings were completed first and used for the selection of the highly relationally aggressive and non-aggressive subgroups. Each child in the relationally aggressive and non-aggressive subgroups was invited to participate in an interview, and child verbal consent was obtained before the interview was conducted. Each of the interviews was conducted in a quiet area of the early childhood setting, where a video camera was set up. First, the researcher introduced the child to the Duplo toy figurines that would be used throughout the interview. The researcher explained that *"these toys will be used to tell you some stories about children playing."* The researcher then explained that after each story there would be some questions about the story. The researcher presented each of the scenarios to the child, and all scenarios were presented in the same sequence for each child (i.e., relational aggression, physical aggression, relational aggression, physical aggression). Children were able to engage with the Duplo toy figurines throughout the interview.

Results

Analyses were conducted to: (1) investigate aggressive and non-aggressive children's acceptability beliefs about relational and physical aggression; (2) examine associations between aggressiveness and children's personal-social skills

with peers and adults; (3) explore aggressive and non-aggressive children's behavioral response selection to the two different forms of aggressive provocation portrayed in vignettes; and (4) evaluate age and gender differences in children's acceptability beliefs and behavioral response selection to the relational and physical aggression scenarios. Parametric statistical methods of analyses of variance (ANOVAs) and t tests were used in the analyses. Norman (2010) noted that the use of parametric statistics is not restricted by small sample size, Likert-type scales, or non-normal distributions. Pearson correlations for Likert-type scales are also robust and acceptable against violations of the normality assumption (Norman 2010).

Descriptive Statistics

The means, standard deviations, and range for relationally aggressive and non-aggressive children's scores on each of the measures are reported in Table 3.

Independent t tests indicated that there were no significant differences between the two subgroups' beliefs about the acceptability of relational aggression, $t(15) = -1.08$, $p = .30$, *partial* $\eta^2 = .07$, or physical aggression, $t(15) = 0.59$, $p = .51$, *partial* $\eta^2 = .02$.

An independent t test was also conducted to examine whether acceptability beliefs about the two forms of aggression differed according to gender. Results indicated that gender differences in the relationally aggressive children's acceptability beliefs about relational forms of aggression, $t(7) = 0.54$, $p = .61$, *partial* $\eta^2 = .04$, and physical forms of aggression, $t(7) = -1.87$, $p = .10$, *partial* $\eta^2 = .33$, were not significant. Results also indicated that gender differences in non-aggressive children's acceptability beliefs about relational forms of aggression, $t(6) = 0.13$, $p = .90$, *partial* $\eta^2 = .00$, and physical forms of aggression, $t(6) = -1.50$, $p = .18$, *partial* $\eta^2 = .27$, were not significant.

Table 3 Descriptive statistics for each measure separated by sample populations

Measures	Relationally aggressive group (n = 9)			Non-aggressive group (n = 7)		
	Mean	SD	Range	Mean	SD	Range
Preschool social behavior scale						
Relational aggression	19.22	3.42	14–24	11.87	1.81	9–13
Physical aggression	10.78	3.87	6–17	9.63	4.14	6–16
Personal-social domain scores	75.33	7.35	61–85	63.00	10.55	45–76
Acceptability beliefs						
Relational provocation	3.61	0.42	3–4	3.63	0.44	2–4
Physical provocation	3.50	0.43	3–4	3.31	0.70	3–4
Behavior response selection						
Problem-solving responses	2.56	1.51	0–4	0.75	1.04	0–3
Aggressive responses	1.33	1.58	0–4	2.88	1.36	1–4

Bivariate Pearson correlations between children's general acceptability beliefs about aggression (i.e., the combined score for beliefs about relational and physical aggression) and age were computed. Consistent with previous research, a statistically significant negative correlation ($r = -.49$) was found between children's acceptability beliefs about aggression and age, indicating that overall, younger children were more likely to hold more accepting beliefs about aggression than older children ($p < .05$). However, when data were separated by aggression type, no age differences were observed in children's beliefs about the acceptability of relational and physical aggression.

Associations Between Aggressiveness and Personal-Social Skills

A one-way ANOVA examined the associations between children's aggressiveness and their personal-social skills. Results indicated a statistically significant difference between highly relationally aggressive children and non-aggressive children and their scores on the Battelle Developmental Inventory—Personal-Social Domain ($F(1,14) = 7.62$, $p = .02$, partial $\eta^2 = .30$). Examination of the cell means indicated that children rated by their teachers as highly relationally aggressive were more likely to have better-quality social interactions with peers and adults. The large effect size indicated a substantial group difference (Cohen 1992).

Children's Behavioral Response Selection

To assess whether relationally aggressive children differed from non-aggressive children in terms of their response to the vignettes (i.e., aggressive vs. problem solving), independent t tests were performed (see Fig. 2 for frequency counts).

Results indicated that children identified as highly relationally aggressive were more likely to use prosocial problem-solving approaches across all aggressive
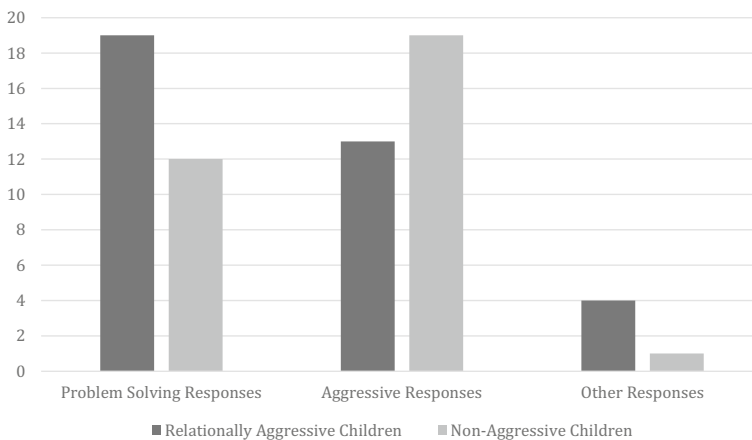

Fig. 2 Frequency counts of problem-solving and aggressive responses

vignettes, $t(15) = -2.84$, $p = .01$, *partial* $\eta^2 = .35$, while non-aggressive children were more likely to use typical aggressive responses across all aggressive vignettes, $t(15) = 2.14$, $p = .04$, *partial* $\eta^2 = .23$. The effect sizes indicated substantial differences between the groups and the types of responses children suggested to provocation scenarios.

Discussion

This research study extends knowledge about young children's aggressive beliefs by demonstrating a developmentally appropriate measure to assess acceptability of, and behavioral responses to relationally and physically aggressive provocation scenarios. The findings show that both relationally aggressive and non-aggressive children tended to identify relational and physical forms of aggression as wrong behaviors. These results differ from previous research (e.g., Goldstein et al. 2002) that found preschool-aged children were more likely to hold more approving beliefs of relational aggression. This is possibly because this form of aggression may be perceived as more acceptable and teachers and parents may be less likely to intervene in relational forms of aggression during early childhood (Goldstein and Boxer 2013; Werner et al. 2006). An explanation for the divergent findings in this study may relate to the increased attention given to relational aggression over the last decade (Leff et al. 2014) and a possible change over time in teacher and parent attitudes and practices toward relationally aggressive behaviors. Early childhood is a critical period for learning about acceptable and unacceptable social behaviors. As children's beliefs about the acceptability of aggression may not yet be entrenched, educators and intervention programs should consider the malleability of beliefs about aggression, especially in contexts where children may learn to view aggression as acceptable.

Consistent with previous research (Huesmann and Guerra 1997), younger children were found to hold beliefs more accepting of relational and physical aggression when compared to older children. This may suggest that as children get older they become more aware of the consequences associated with different forms of aggression and this influences their view of aggression. Research has shown that adults often view young children's aggressive behaviors as part of typical development such as rough and tumble play (Atlas and Pepler 1998). These views may contribute to young children's beliefs about the acceptability of aggressive behaviors. It is possible that during the preschool years, children's acceptability beliefs about different forms of aggression are less stable as they are still developing cognitive understanding and awareness of appropriate social behaviors to use within different contexts. As such, it would be valuable for future research to employ a longitudinal design to explore the development of young children's beliefs about the acceptability of different forms of aggression to determine when these beliefs become a robust predictor of aggressive behavior and when these beliefs change to indicate less acceptance of aggressive behaviors. Likewise, current intervention programs focus on behavioral change; however, these results suggest that there may

be value in initially assessing young children's acceptability beliefs which may be facilitating their aggressive behavior.

No gender differences in aggressive and non-aggressive children's beliefs about the acceptability of different forms of aggression were found in this study. This finding contrasts with previous studies identifying gender differences in young children's beliefs and use of relational and physical forms of aggression during early childhood (Goldstein et al. 2002; Putallaz et al. 2007), but accords with more recent research with Australian children that has identified no differences in boys' and girls' use of different forms of aggression (Hayward and Fletcher 2003; Owens 1996; Swit and McMaugh 2012). Thus, it is important for educators to recognize that relational aggression may not be associated with the robust gender differences that are evident for physical aggression. However, the lack of gender differences found in this study may be due to the small sample size. Scrutiny of effect sizes suggests that with a larger sample, gender differences may be significant in boys' and girls' acceptability beliefs about relational aggression, in line with the findings of previous research (Goldstein et al. 2002; Putallaz et al. 2007). It is recommended that future research explore these associations with a larger sample.

Importantly, this study provides further evidence that aggressive children process and understand social information differently to non-aggressive children (Nelson et al. 2010). A key finding was that children who engaged in high levels of relational aggression were more likely to employ prosocial problem-solving behavioral responses when faced with relational and physical provocations, whereas non-aggressive children were more likely to recommend more aggressive behavioral responses to solve social conflict. This may at first appear counterintuitive as it suggests that children who engage in relational aggression do not always lack social skills or have negative biases in processing social information. This is supported in the current study by the finding that relationally aggressive children did in fact have higher scores on the Personal-Social Domain of the Battelle Developmental Inventory. As suggested by previous research (Crick and Rose 2000; Nelson et al. 2010), relationally aggressive children may be more skilled in processing social information to achieve specific social goals and may actually employ relationally aggressive behaviors to gain social prominence. The findings of this study would appear to support this proposition; relationally aggressive children in this study were not only socially skilled enough to use prosocial behavior in response to provocation but also enjoyed positive relations with their teachers and peers as indicated by their scores on the Battelle Developmental Inventory.

Indeed, it is interesting that non-aggressive children recommended more aggressive behavioral responses to provocation. An explanation for these findings may relate to social learning perspectives. For instance, teachers and parents report using direct discipline strategies when responding to aggression (Goldstein and Boxer 2013; Hurd and Gettinger 2011) and children may internalize these behaviors as appropriate ways to respond to provocation. Thus, educators need to be aware of the types of behaviors they use when responding to aggression as these may provide modelling for young children. These findings also demonstrate that educators and parents should not dismiss aggressive behavior in children who are socially skilled

or advanced because these skills may be used to more effectively engage in manipulative behaviors such as relational aggression.

Taken together, these results suggest that relationally aggressive children are more likely to have higher-quality social interactions and relationships with their peers and adults. Further, it is also possible they may be accessing and processing social information not only to resolve social conflicts but also to more effectively harm others when they seek to achieve other social goals, although this would need to be tested specifically in further studies. These findings provide further evidence that relationally aggressive children may not have deficits or biases in processing social information, as some have previously suggested, but rather be more socially skilled. The robust group differences identified in relationally aggressive versus non-aggressive children also highlight the sophisticated social cognitive abilities necessary for children to engage in social manipulation and aggression. A number of implications for intervention are relevant to these findings. Current intervention programs promote prosocial problem-solving skills; however, research has shown that some children use these skills in combination with aggressive behaviors. Hawley (2003) identified these children as bistrategic controllers who are often well liked by their peers, a fact that can mask their aggressiveness, particularly from educators. Therefore, educators need to be aware that some children use a combination of aggressive and prosocial behaviors within their peer relationships.

One limitation of the present study is the small sample size although this sample reflects the naturally occurring prevalence rate for high levels of relational aggression in this population. Nonetheless, the differences should be considered exploratory. The focus of the present study was to employ a new measure to examine preschoolers' beliefs about the acceptability of, and behavioral responses to different forms of aggression, and to assess the appropriateness of this measure. Future research should explore the associations between acceptability beliefs and behavioral responses to relational and physical provocation in a larger sample of relationally aggressive and non-aggressive children using similar measures.

This study provides evidence that the use of an interactive interview technique using Duplo toy figurines provided a developmentally appropriate technique and a valid measure for exploring young children's beliefs about the acceptability of, and behavioral responses to aggressive provocation. Children in this study were very responsive to the interactive interview technique and used the Duplo toy figurines to explain their behavioral responses to provocation that may not have otherwise been obtained if the measure relied on verbal responses. Similar methodological procedures may be useful in intervention programs as a recent review by Leff et al. (2010) recommended the use of more "concrete and visual activities to help address the direct manifestations of relational aggression" (p. 13). A key finding was that relationally aggressive children may be more socially skilled and may have more advanced social cognitive understanding compared to non-aggressive children than has been previously thought. This has implications for the many intervention programs that target aggressive behavior in young children through the development and promotion of relevant social skills. In children who already possess these skills, it may be appropriate to focus on training in the appropriate regulation and use of

these skills in different provocation situations where the child appears likely to misuse these skills to suit their own goals.

References

Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology, 53*, 27–51. doi:10.1146/annurev.psych.53.100901.135231.

Atlas, R. S., & Pepler, D. J. (1998). Observations of bullying in the classroom. *Journal of Educational Research, 92*, 86–97.

Averdijk, M., Malti, T., Ribeaud, D., & Eisner, M. (2011). Trajectories of aggressive behavior and children's social-cognitive development. *International Journal of Developmental Science, 5*, 103–111. doi:10.3233/DEV-2011-10067.

Bellmore, A. D., Witkow, M. R., Graham, S., & Juvonen, J. (2005). From beliefs to behavior: The mediating role of hostile response selection in predicting aggression. *Aggressive Behavior, 31*, 1–20. doi:10.1002/ab.20094.

Boxer, P., Tisak, M., & Goldstein, S. (2004). Is it bad to be good? An exploration of aggressive and prosocial behavior subtypes in Adolescence. *Journal of Youth and Adolescence, 33*, 91–100.

Cillessen, A., & Mayeux, L. (2004). From censure to reinforcement: Developmental changes in the association between aggression and social status. *Child Development, 75*, 147–163. doi:10.1111/j.1467-8624.2004.00660.x.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155–159.

Côté, S., Vaillancourt, T., Barker, E., Nagin, N., & Tremblay, R. (2007). The joint development of physical and indirect aggression: Predictors of continuity and change during childhood. *Developmental Psychopathology, 19*, 37–53. doi:10.1017/S0954579407070034.

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

Crick, N. R., & Rose, A. J. (2000). Toward a gender-balanced approach to the study of social-emotional development. In P. H. Miller & E. Scholnick (Eds.), *Towards a feminist developmental psychology* (pp. 153–168). London: Routledge Press.

Goldstein, S., & Boxer, P. (2013). Parenting practices and the early socialisation of relational aggression among pre-schoolers. *Early Child Development and Care, 183*, 1559–1575. doi:10.1080/03004430.2012.738200.

Goldstein, S., Tisak, M., & Boxer, P. (2002). Preschoolers' normative and prescriptive judgments about relational and overt aggression. *Early Education and Development, 13*, 23–40. doi:10.1207/s15566935eed1301_2.

Hawley, P. (2003). Strategies of control, aggression, and morality in preschoolers: An evolutionary perspective. *Journal of Experimental Child Psychology, 85*, 213–235. doi:10.1016/S0022-0965(03)00073-0.

Hayward, S., & Fletcher, J. (2003). Relational aggression in an Australian sample: Gender and age differences. *Australian Journal of Psychology, 55*, 129–134. doi:10.1080/0004953042000298572.

Henry, D., Guerra, N., Huesmann, R., Tolan, O., VanAcker, R., & Eron, L. (2000). Normative influences on aggression in urban elementary school classrooms. *American Journal of Community Psychology, 28*, 59–81. doi:10.1023/A:1005142429725.

Huesmann, L. R. (1988). An information processing model for the development of aggression. *Aggressive Behavior, 14*, 13–24.

Huesmann, L. R. (1998). The role of social information processing and cognitive schema in the acquisition and maintenance of habitual aggressive behavior. In R. G. Geen & E. Donnerstein (Eds.), *Human aggression: Theories, research, and implications for social policy* (pp. 73–109). San Diego, CA: Academic Press.

Huesmann, L. R., & Guerra, N. G. (1997). Children's normative beliefs about aggression and aggressive behavior. *Journal of Personality and Social Psychology, 72*, 408–419.

Hurd, H. D., & Gettinger, M. (2011). Mothers' and teachers' perceptions of relational and physical aggression in pre-school children. *Early Child Development and Care, 181*, 1343–1359. doi:10.1080/03004430.2010.527336.

Leff, S., Waasdorp, T., & Crick, N. (2010). A review of existing relational aggression programs: Strengths, limitations, and future directions. *School Psychology Review, 39*, 508–535.

Leff, S., Waasdorp, T., Waanders, C., & Paskewich, B. (2014). Better understanding and intervening to prevent relational aggression. In M. D. Weist, N. A. Lever, C. P. Bradshaw, & J. S. Owens (Eds.), *Handbook of school mental health: Research, training, practice, and policy* (2nd ed., pp. 171–184). New York: Springer.

Murray-Close, D., Crick, N., & Galotti, K. (2006). Children's moral reasoning regarding physical and relational aggression. *Social Development, 15*, 345–372. doi:10.1111/j.1467-9507.2006.00346.x.

Nelson, D., Robinson, C., & Hart, C. (2005). Relational and physical aggression of preschool-age children: Peer status linkages across informants. *Early Education and Development, 16*, 115–140. doi:10.1207/s15566935eed1602_2.

Nelson, D., Robinson, C., Hart, C., Albano, A., & Marshall, S. (2010). Italian preschoolers' peer-status linkages with sociability and subtypes of aggression and victimisation. *Social Development, 19*, 698–720. doi:10.1111/j.1467-9507.2009.00551.x.

Newborg, J. (2005). *Battelle developmental inventory second edition examiner's manual*. Itasca, IL: Riverside.

Norman, G. (2010). Likert scales, levels of measurement and the "laws" of statistics. *Advances in Health Sciences Education, 15*, 625–632. doi:10.1007/s10459-010-9222-y.

Ostrov, J. M. (2006). Deception and subtypes of aggression in early childhood. *Journal of Experimental Child Psychology, 93*, 322–336. doi:10.1016/j.jecp.2005.10.004.

Ostrov, J. M., & Keating, C. F. (2004). Gender differences in preschool aggression during free play and structures interactions: An observational study. *Social Development, 13*, 255–277. doi:10.1111/j.1467-9507.2004.000266.x.

Ostrov, J. M., Murray-Close, D., Godleski, S. A., & Hart, E. J. (2013). Prospective associations between forms and functions of aggression and social and affective processes during early childhood. *Journal of Experimental Child Psychology, 116*, 19–36. doi:10.1016/j.jecp.2012.12.009.

Owens, L. D. (1996). Sticks and stones and sugar and spice: Girls' and boys' aggression in schools. *Australian Journal of Guidance and Counselling, 6*, 45–55.

Putallaz, M., Grimes, C., Foster, K., Kupersmidt, J., Coie, J., & Dearing, K. (2007). Overt and relational aggression and victimisation: Multiple perspectives within the school setting. *Journal of School Psychology, 45*, 523–547. doi:10.1016/j.jsp.2007.05.003.

Stalker, K., & Connors, C. (2003). Communicating with disabled children. *Adoption and Fostering, 27*, 26–35. doi:10.1177/030857590302700105.

Swit, C., & McMaugh, A. (2012). Relational aggression and pro-social behaviors in Australian preschool children. *Australasian Journal of Early Childhood, 37*, 30–34.

Vaillancourt, T., Miller, J., Fagbemi, J., Cote, S., & Tremblay, R. (2007). Trajectories and predictors of indirect aggression: Results from a nationally representative sample of Canadian children aged 2–10. *Aggressive Behavior, 33*, 314–326. doi:10.1002/ab.20202.

Warburton, W. A., & Anderson, C. A. (2015). Social psychological study of aggression. In J. Wright (Ed.), *International encyclopaedia of social and behavioral sciences* (2nd ed.). Oxford: Elsevier.

Werner, N. E., & Hill, L. H. (2010). Individual and peer group normative beliefs about relational aggression: Developmental changes and impact on relationally aggressive behavior. *Child Development, 81*, 826–836.

Werner, N. E., & Nixon, C. L. (2005). Normative beliefs and relational aggression: An investigation of the cognitive bases of adolescent aggressive behavior. *Journal of Youth and Adolescence, 34*, 229–243. doi:10.1007/s10964-005-4306-3.

Werner, N. E., Senich, S., & Przepyszny, K. A. (2006). Mothers' responses to preschoolers' relational and physical aggression. *Applied Developmental Psychology, 27*, 193–208. doi:10.1016/j.appdev.2006.02.002.

Zelli, A., Dodge, K., Lochman, J., & Laird, R. (1999). The distinction between beliefs legitimizing aggression and deviant processing of social cues: Testing measurement validity and hypothesis that biased processing mediates the effects of beliefs on aggression. *Journal of Personality and Social Psychology, 77*, 150–166.