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Children's Responses to Hypothetical Provocation by Peers: Coordination of Assertive and Aggressive Strategies

Melanie A. Dirks · Jennifer H. Suor · Dana Rusch · Stacy L. Frazier

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Abstract Children often respond to aggression by peers with assertive bids or aggressive retaliation. Little is known, however, about whether and how children coordinate these strategies across different types of provocation. The present study examined endorsement of aggressive and assertive responses to hypothetical physical, relational, and verbal provocation in a sample of lower-income children ($N=402$, M age=10.21, $SD=1.46$). Latent-profile analysis revealed 3-class models for both aggression and assertion, each reflecting low, moderate, and high levels of endorsement. There was no association between children's reported use of aggression and assertion. For example, children who endorsed high levels of aggression were equally likely to be classified as low, moderate, or high on assertive responding. For both assertion and aggression, parental ratings of children's externalizing behavior and social skills differed across the low and high groups. No such differences were found between the low and moderate groups, despite the latter groups endorsing markedly higher levels of assertive and aggressive responses. This pattern of findings may be due, in part, to the situation specificity of children's responding. Our findings hint at the complexity of children's behavioral repertoires and contribute to a growing literature

that suggests the need for intervention models that consider both social skills and social situations.

Keywords Social skills · Aggression · Assertion

There is increasing recognition of the value of studying children's interpersonal behaviors in the context of specific, challenging social situations (Dirks et al. 2012b). In this study, we sought to advance understanding of how children manage a particularly critical interpersonal challenge – responding to provocation by peers – by examining children's endorsement of different types of aggression and assertion across a set of hypothetical situations involving physical, relational, and verbal provocation. We sampled lower-income children, an under-studied population among whom rates of provocation and aggression are especially high (Guerra et al. 2003).

How Do Youth Respond to Peer Provocation?

Traditional understanding of children's interpersonal behaviors relates them to stable personality dispositions that manifest consistently across situations (see Wright et al. 1999). Mounting evidence indicates, however, that children's behavior shows marked situational specificity, suggesting that there will be clinical benefit from developing interventions reflecting more contextualized models of children's interpersonal functioning (Dirks et al. 2012b). Toward this end, it is necessary to assess children's behavior with respect to its antecedent social situations, as measures that assess global behavioral tendencies may obscure important functional differences in children's behavior (Dirks et al. 2007a).

If children's behavior is measured in response to specific situations, it is critical to choose the right ones. Peer provocation is an important interpersonal context, because many

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children (a) experience aggression by peers (Card and Hodges 2008), and (b) respond in ways that could exacerbate harassment and distress (e.g., Mahady Wilton et al. 2000; Visconti and Troop-Gordon 2010). Accordingly, researchers have used multiple methodologies, including naturalistic observations (e.g., Mahady Wilton et al. 2000; Tapper and Boulton 2005), analogue provocation situations (e.g., Underwood et al. 1999; Waschbusch et al. 2002; see Frick and Loney 2000), and hypothetical vignettes (e.g., Dirks et al. 2007b; Dodge et al. 2002; Hughes et al. 2004) to examine how children respond to peer aggression. This work has revealed that children use, generate, or endorse many strategies, with the most frequent including physical, verbal, or relationally *aggressive* retaliation, *avoidant* behaviors such as ignoring the aggressor, *assertive* bids like telling the aggressor to stop or seeking an explanation, and seeking help from an adult.

In this study, we focused on children's endorsement of aggressive and assertive responses. Peer-provocation situations are particularly likely to elicit aggressive responding (Tapper and Boulton 2005; Wright et al. 1999). Such behavior may escalate the incident (Mahady Wilton et al. 2000), cause harm to self or others, and lead to additional negative consequences (e.g., school suspensions; Ramirez et al. 2012), making developing skills for managing provocation effectively an important target for intervention (e.g., Lochman et al. 2012). In general, assertive responses are likely to be more adaptive: They are perceived as effective by both youth and their teachers (Craig et al. 2007; Dirks et al. 2010), and observational work indicates assertion de-escalates the current incident (Mahady Wilton et al. 2000).

Children's Coordination of Aggressive and Assertive Responses

In addition to being clinically important, examining children's endorsement of aggressive and assertive responses to provocation may inform our understanding of the contextualized nature of children's interpersonal functioning. Observational research indicates that there is significant variability in children's behaviors across different types of aversive events with peers (Wright et al. 1999). As such, these situations offer a window into individual differences in children's coordination of interpersonal strategies. Both aggression and assertion can take multiple forms, but little is known about when children use different types of these behaviors. Past research has demonstrated that children who engage in one type of aggressive behavior are likely to be using others. Notably, a meta-analysis revealed a strong association between children's use of direct (i.e., physical and overt verbal aggression) and indirect (i.e., attacks on relationships and social position) aggression for both boys and girls (Card et al. 2008). Moreover, studies have suggested that, in general, children "match" aggression to the corresponding provocation (e.g., physical

aggression is more likely in response to physical provocation; see Dirks et al. 2007b). These findings suggest that, rather than relying on only one type of aggressive strategy, children may fit their aggression to the specific interpersonal context. Children's use of assertive behavior has received less empirical attention. One study found a correlation of 0.79 between children's endorsement of two assertive strategies – seeking an explanation and stating that the provocation crossed limits – in response to peer-provocation scenarios (Dirks et al. 2011), suggesting that children likely use multiple types of assertive behaviors as well, with the specific choice perhaps depending upon the situation (Dirks et al. 2007b).

It is also important to examine children's use of assertion and aggression simultaneously. Researchers often treat these behaviors discretely, by using analogue provocation situations that are designed to elicit specific types of aggressive responding (see Frick and Loney 2000); focusing on aggressive strategies in their analyses (e.g., Dodge et al. 2002; Hughes et al. 2004); or examining assertion and aggression as separate dependent variables (e.g., Quiggle et al. 1992). Assertion and aggression do not represent opposite ends of a continuum, however, and knowing about one behavior does not necessarily confer information about the other (see Veenstra et al. 2008). Some children will use both strategies and the outcomes of children who engage in assertion and aggression will likely differ from those who rely exclusively on one of these responses (see Hawley et al. 2002).

Responding to Peer Provocation in Lower-Income Communities

It may be especially valuable to conduct this more fine-grained analysis of interpersonal behavior among youth living in communities characterized by economic disadvantage, where rates of peer aggression are high (Guerra et al. 2003). Moreover, some youth in lower-income environments believe that aggressive responding to provocation is acceptable (Huesmann and Guerra 1997) and effective (Dirks et al. 2010), suggesting that in some cases, use of these strategies may reflect a deliberate choice, rather than a skill deficit. For this reason, understanding youths' coordination of aggressive and assertive strategies has implications for prevention and intervention with this vulnerable group. Problem-solving training, which focuses on helping youth develop adaptive ways to manage interpersonal problems, is the most widely used technique in prevention programs targeting youth's socio-emotional functioning (Boustani et al. 2014) and is a core component of interventions targeting children's aggression (e.g., Lochman et al. 2012). Children demonstrating different profiles of assertive and aggressive behavior may benefit from different treatment foci within this framework. For children endorsing high levels of aggression and low levels of assertion, it may be important to focus on generating

and role-playing assertive solutions. For children who already endorse both types of strategies, it may be more useful to help them evaluate the costs, benefits, and possible outcomes associated with each one.

Goals and Hypotheses of the Current Study

The current study had two goals. First, we examined the contextualized nature of children's endorsement of interpersonal strategies by assessing their selection of assertive and aggressive responses across situations involving physical, relational, and verbal provocation by peers. We used hypothetical vignettes to address this objective because this methodology allowed us to measure children's reported responses to a number of standardized provocation scenarios, including situations that may be difficult to observe (Pellegrini and Bartini 2000). These advantages have made hypothetical vignettes a widely used approach for the assessment of children's responses to key interpersonal scenarios. Importantly, research suggests that youths' report of how they would respond to social situations corresponds with others' perceptions of their actual behavior (e.g., Chung and Asher 1996; Hughes et al. 2004), and is linked to important social outcomes, such as friendship quality (e.g., Rose and Asher 1999, 2004).

We conducted latent-profile analyses to classify children based on their patterns of responding. Given the demonstrated overlap in children's use of different forms of aggression (Card et al. 2008), we expected to find at least two profiles defined by level (e.g., low versus high), rather than type of aggression (e.g., children who endorsed physical aggression versus those who endorsed relational aggression). Previous work also has demonstrated high correlations between children's reported use of different assertive behaviors (Dirks et al. 2011), leading us to anticipate that a similar pattern would characterize profiles of assertive responding. Additionally, based on research demonstrating the situation specificity of aggressive behavior, we expected that profiles marked by higher levels of aggression would be characterized by greater endorsement of a particular type of aggression in response to the corresponding provocation (e.g., higher levels of physical aggression in response to physical provocation).

To assess the convergent validity of our profiles, we examined associations between children's classification and parents' report of externalizing behavior and social skills. We hypothesized that profiles marked by greater aggression would be associated with more externalizing behavior and fewer social skills, whereas profiles characterized by higher assertion would be associated with fewer externalizing behaviors and more social skills. We also examined whether gender was associated with classification based on assertive and aggressive responding. Previous work has shown that girls endorse higher levels of assertive responding to challenging peer situations than do boys (Rose and Rudolph 2006); thus,

we expected that more girls than boys would be classified in the high-assertion group. There is robust evidence that boys engage in higher levels of direct aggression than do girls, but compelling gender differences in use of indirect aggression have not emerged (Card et al. 2008). Thus, we did not anticipate that gender would be associated with classification into aggressive profiles.

Second, we examined the association between children's endorsement of assertive and aggressive responses, by assessing the joint classification of children into assertive and aggressive profiles. Given that assertive behavior is generally perceived to be more competent (e.g., Dirks et al. 2010), we hypothesized that for children endorsing high rates of aggressive behavior, simultaneous report of higher rates of assertion would serve a protective function and would be associated with more social skills and fewer externalizing behaviors, relative to children endorsing low rates of assertive behavior.

Method

Participants

Participants were enrolled in a larger study examining associations among program delivery and children's outcomes in after-school programs. These programs were delivered daily by a large, publicly funded, urban, Midwestern park district. Enrollment was voluntary and required a nominal fee (from \$20 to \$175 per 12 week session, $M=\$102$, $SD=\$50$). Forty-four after-school programs participated, with a total enrollment of 768 children (approximately 52 % of those eligible) between ages 5 and 14. Only children aged 8 and older participated in the current study because the measure used to assess responses to peer provocation was developed based on work with youth between 8 and 15 years of age (Dirks et al. 2007b, 2011). There were 521 participants eligible, of whom 402 (77 %) completed the relevant measures. Completers were slightly older (M age=10.21 years) than non-completers (M age=9.34 years), $t(164.90)=-4.75$, $p<0.05$ (degrees of freedom adjusted due to inequality of variances). The two groups did not differ on family income, $t(181.28)=-1.22$; race/ethnicity, $\chi^2(3)=1.42$; or gender, $\chi^2(1)=2.99$, all $ps>0.05$. Demographic characteristics of the final sample were as follows: 55 % female; 53 % African-American, 18 % Hispanic, 6 % non-Hispanic White, 7 % other, 16 % undeclared; M age=10.21 ($SD=1.46$), with an average family income between \$25,000 and \$29,999 a year, considerably below the regional median income (\$47,408; US Census Bureau, 2014).

Measures

The *Peer Provocation Inventory – Multiple Choice* (PPI-MC; Dirks et al. 2011), was used to assess children's endorsement

of responses to peer aggression. This measure, which has shown adequate test-retest reliability (Dirks et al. 2012a), consists of 11 vignettes describing physical, verbal, and relational provocation. In each story, the aggressor was described as a “kid from your class who you don’t know very well.” Age and gender of the characters is always matched to that of the participant. Each scenario is paired with nine behavioral strategies, based on actual responses generated by youth (Dirks et al. 2007b), representing eight categories, including physical aggression, damaging the aggressor’s relationship with others, seeking an explanation, and stating that the provocation crossed limits. The ninth response combines verbal aggression and seeking an explanation (e.g., saying “what’s wrong with you?”), and was included because many children generated these types of responses. After each vignette, children are instructed to indicate every behavior they would actually use, because previous work has demonstrated that many children give responses combining multiple strategies (e.g., Craig et al. 2007; Dirks et al. 2007b). In an earlier study, children’s responses were captured by three broadband factors: aggression, avoidance, and assertion (Dirks et al. 2011). We sought to replicate this finding here.

The *Strengths and Difficulties Questionnaire* (SDQ; Goodman 2001) consists of 20 items focused on socio-emotional difficulties and five items assessing prosocial behavior. Parents rate “how true” each description is on a scale from 0 (*not true*) to 2 (*certainly true*). We used the conduct-problems and prosocial-behavior subscales as indices of externalizing behavior and social skill. Internal consistency of these subscales—conduct problems, $\alpha=0.61$; prosocial behavior, $\alpha=0.68$ —was adequate and consistent with that observed in the original psychometric validation (Goodman 2001).

The *Social Skills Improvement System* (SSIS; Gresham and Elliot 2008) consists of 79 items assessing children’s social skills, problem behaviors, and academic competencies. Parents rate how often they observe each behavior on a scale from 0 (*never*) to 3 (*almost always*). We used the social-skills scale, which has 46 items tapping a number of socially desirable behaviors (e.g., assertion), and the externalizing-behavior scale, consisting of 12 items measuring aggression, oppositionality, and hyperactivity/impulsivity. Internal consistency of both scales was excellent, with alphas of 0.96 (social skills) and 0.89 (externalizing behavior).

Procedure

All procedures were approved by the Research Ethics Boards of the relevant universities. Written consent/assent was obtained from all parents and children. Children completed their measures during the after-school program, working independently in small groups supervised by a member of the research team. Children could also choose to work one-on-one with a research assistant, who read the questionnaires aloud to them

if needed. Parents were invited to complete measures either at home or during recruitment night at the after-school program, with most families choosing the former option.

Data-Analytic Plan

Analyses proceeded in three stages. First, we examined whether the nine response categories on the PPI-MC were captured adequately by the categories of aggression, avoidance, and assertion. There were significant differences between this study and previous work testing the factor structure of this measure (Dirks et al. 2011): The current sample was younger and the PPI-MC described the aggressor as a “kid from class who you don’t know very well” rather than as a good friend, a change that was made because pilot data indicated that provocation by a friend was less common than provocation by a less well-known acquaintance. As these differences could impact the factor structure, we used exploratory structural equation modeling (ESEM; Asparouhov and Muthén 2009), which combines the strengths of exploratory and confirmatory factor analysis (EFA and CFA). Specifically, all items were allowed to load on all factors, but we specified there should be three factors, and obtained the statistical significance of each loading. The ESEM approach is advantageous because many measures will not show “simple structure,” that is, each item loading on only one factor (Asparouhov and Muthén 2009). In a CFA framework, unanticipated cross-loadings are set to zero, which can distort the factor structure and may result in significant post-hoc model modification. This analysis was conducted in MPlus 6.0, using a robust maximum likelihood estimator (Muthén and Muthén 2010). A CF-varimax rotation was applied.

After identifying strategies that were assertive, avoidant, and aggressive, we conducted latent-profile analysis (LPA)—a person-centered analytic technique in which individuals’ classification into a latent profile accounts for their pattern of responses on continuous indicator variables (Collins and Lanza 2010)—to classify children based on their endorsement of assertive and aggressive strategies. As described previously, we focused on these two strategies because aggressive responses to provocation are commonly occurring and problematic, whereas assertion is more adaptive. We did not create latent profiles based on avoidant responding because we thought that adding a third type of strategy would make analyses difficult to interpret. It is important to note that we used LPA to describe children’s endorsement of both assertive and aggressive behavior, not to classify children based on their predominant response style; thus, we did not identify children as assertive or aggressive who might be better described as avoidant.

We fit separate models for aggressive and assertive strategies. To capture situational variability in responding, indicator variables were the conditional probabilities of specific

responses given the type of provocation (see Wright et al. 1999). For example, we computed the likelihood that children endorsed physical aggression in response to each of physical, verbal, and relational provocation by summing the number of times children endorsed that strategy in the given situation and dividing by the total number of situations (e.g., a child who endorsed physical aggression in two of the three physically aggressive scenarios would receive a score of 0.67). Using Mplus 6.0 (Muthén and Muthén 2010), we fit 2- through 4-class solutions, using the Akaike Information Criterion (AIC, Akaike 1974), the Bayes Information Criterion (BIC, Schwarz 1978) and the Lo-Mendell-Rubin Adjusted Likelihood Ratio Test (LMRT; Lo et al. 2001) to compare models. Lower AIC and BIC values indicate better fit. The LMRT compares a given model to one with one fewer class, with *p*-values greater than 0.05 indicating the additional class does not improve fit. Adequacy of classification was evaluated using entropy and posterior classification probabilities. Entropy values closer to 1.0 indicate a better solution. Average posterior classification probabilities should exceed 0.70 (Nagin 2006). After determining the optimal number of classes for aggressive and assertive responding, we fit a joint model to examine accuracy of classification when both types of responses were considered.

We used chi-square tests to examine associations between gender and classification into assertive and aggressive profiles, and then conducted regression analyses to examine links between latent profiles and the four parent-report indices of externalizing behavior and social skill. Square-root transformations were applied to the SDQ conduct-problems scale and the SSIS externalizing-behavior scale to correct for positive skew, and a reflected-logarithm transformation was applied to the SDQ prosocial-behavior scale due to negative skew. Independent variables were classifications for assertive and aggressive behavior. The following variables were included as covariates: gender, age, family income, and race/ethnicity, dummy coded as African-American versus Hispanic, and African-American versus other, which included youth identified as non-Hispanic white, American Indian, Asian-Pacific, and “other.” These youths were combined given the small number of participants in each category.

In most cases (87 %), mothers completed the parent questionnaires. Other informants were fathers (10 %) and grandmothers (2 %). Scores on the SSIS and SDQ scales did not vary as a function of whether or not the mother was the informant, with the largest difference observed on the SSIS social-skills scale, $t(331)=-1.36, p>0.05$. Approximately 17 % of parents did not provide data, which included child’s ethnicity, family income, and report on the SSIS and the SDQ. Missingness was not associated with children’s gender, $\chi^2(1)=1.07, p>0.05$; age, $t(395)=0.55, p>0.05$; or the region of the after-school program in which they were participating (i.e., North, Central, or South), $\chi^2(2)=4.53, p>0.05$. Children

with and without parent data also did not differ significantly in their endorsement of any category of responses on the PPI-MC, with the largest difference emerging for the strategy ending relationship with the aggressor, $t(399)=-0.15, p>0.05$. Missing data were handled using the multiple-imputation procedure in SPSS 20.0. All variables to be included in the regression models were used as predictors in the model estimating the missing values. The region of the after-school program was also included as it was a robust predictor of ethnicity. Five imputed data sets were created, and results were combined using Rubin’s rules (Rubin 1987).

Results

Exploratory Structural Equation Modeling

For the three-factor model, the CFI, 0.97, indicated good fit, but the RMSEA was sub-optimal, 0.105 (90 % CI=0.081–0.131; Hu and Bentler 1999), and the χ^2 -test was significant, $\chi^2(12)=65.42, p<0.01$. Modification indices suggested allowing the residual variances for physical aggression and the relationally aggressive response of damaging the provocateur’s relationship with others to co-vary. After this parameter was added, the χ^2 -test remained significant, $\chi^2(11)=26.76, p<0.01$, but both the CFI, 0.99, and the RMSEA, 0.060 (90 % CI=0.031–0.089) indicated good fit. Given the sensitivity of the χ^2 -test (Brown 2006), we elected to retain this model. Final factor loadings are presented in Table 1. Physical aggression, verbal aggression, and damaging the aggressor’s relationship with others

Table 1 Factor loadings of the Peer Provocation Inventory-Multiple Choice

Strategy	Factor		
	Aggressive	Avoidant	Assertive
Physical aggression	0.71*	0.05	-0.16*
Verbal aggression	0.93*	0.06	0.13
Damaging the aggressor’s relationship with others	0.54*	0.37*	0.01
Ending relationship with aggressor	0.04	0.87*	-0.06*
Doing nothing	-0.32*	0.41*	0.10
Telling an adult	-0.28*	0.30*	0.46*
Seeking an explanation	-0.08*	0.05	0.93*
Stating that the provocation crossed limits	0.16*	0.05	0.77*
Seeking explanation + verbal aggression	0.22*	0.20*	0.68*

In the final model, the residual variances of physical aggression and damaging the aggressor’s relationships with others were allowed to co-vary. The parameter estimate was 0.38, $p<0.05$

* $p<0.05$

(henceforth referred to as relational aggression) had strong primary loadings on the aggression factor; and seeking an explanation, stating that the provocation crossed limits, and the strategy combining seeking an explanation and verbal aggression had strong primary loadings on the assertion factor.

Telling an adult had a moderate-sized loading on the avoidance factor (0.30) and a larger loading on the assertion factor (0.46). This pattern differed from our previous study, in which this response loaded primarily on avoidance (Dirks et al. 2011). This difference might be due to the younger age of the current sample: For younger children, this may be an appropriate way of communicating one's feelings, particularly since parents or teachers may tell them to seek help from an adult when provoked, whereas for older children, it is viewed as less effective (Dirks et al. 2010). Despite this pattern, we elected not to consider telling an adult with the other assertive strategies for the following reasons: (a) conceptually, this response is different than the others, in that it does not involve verbally communicating one's thoughts and feelings to the aggressor, and (b) the perceived effectiveness of this strategy decreases with age (Dirks et al. 2010). Thus, we thought it important to examine use of verbally assertive strategies, which are likely to be among the more effective responses as children grow older, separately from telling an adult. Ending one's relationship with the aggressor and doing nothing both had their primary loadings on the avoidance factor.

Latent-Profile Analyses

Fit statistics for 2- to 4-class models capturing children's endorsement of aggression (i.e., physical, verbal, and relational aggression) and assertion (i.e., seeking an explanation, stating that the provocation crossed limits, and seeking an explanation + verbal aggression) are reported in Table 2. In both cases, moving from a 2- to 3-class model significantly improved fit, but adding a fourth class did not. Thus, the 3-class models were retained. Figures 1 and 2 depict the mean probabilities of each type of response as a function of latent profile and provocation type, and provide the mean levels of each strategy endorsed by each group. As expected, for both aggressive and assertive responding, the three classes were defined by overall levels of endorsement: low, moderate, and high. Consistent with previous work, in the low- and moderate-aggression groups, there was evidence that youth were "matching" physical and verbal aggression to the corresponding provocation. In contrast, the high-aggression group endorsed comparable rates of physical aggression in response to verbal aggression.

We then fit a model estimating the 3-class models for aggressive and assertive responding simultaneously. For this model, AIC=-203.83, BIC=115.89, and entropy was 0.94. The frequency of children assigned to each group and the average posterior probabilities, which exceeded the 0.70 cut

Table 2 Fit statistics for latent-profile analyses examining children's endorsement of aggressive and assertive strategies in response to peer provocation

	Fit index	2-class	3-class	4-class
Aggressive responses	AIC	-340.40	-921.27	-1,161.58
	BIC	-228.50	-775.41	-969.75
	LMRT	1,572.74*	596.91*	250.14
	Entropy	0.97	0.95	0.97
Assertive responses	AIC	1,101.13	719.08	518.97
	BIC	1,213.03	870.95	710.81
	LMRT	1,799.25*	395.45*	216.49
	Entropy	0.96	0.93	0.93

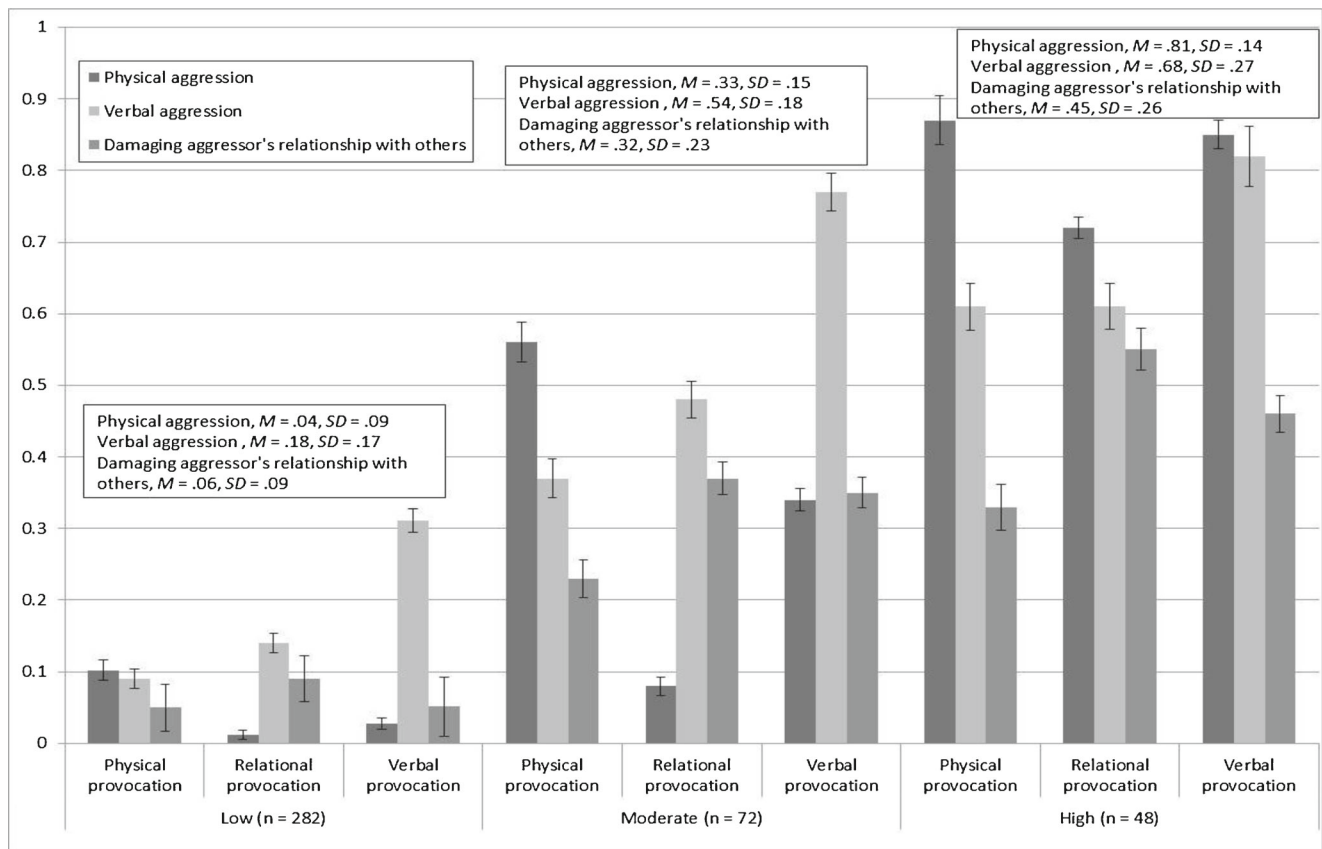
AIC Akaike Information Criterion; BIC Bayes Information Criterion; LMRT Lo-Mendell-Rubin Test

* $p < 0.05$

point suggested by Nagin (2006), are presented in Table 3. A χ^2 -test indicated no association between classifications for assertive and aggressive responding, $\chi^2(4) = 3.51$, $p > 0.05$. Of particular interest was whether children classified as highly aggressive would be more likely to endorse low rates of assertive behavior. To test this possibility, we re-ran the analysis within just the high-aggression group, and found no association, $\chi^2(2) = 0.07$, $p > 0.05$. Children in the high-assertion group were also not more likely to be classified in any of the aggression groups, $\chi^2(2) = 2.06$, $p > 0.05$. Gender was not associated with classification into assertive profiles, $\chi^2(2) = 3.92$, $p > 0.05$; or aggressive profiles, $\chi^2(2) = 2.90$, $p > 0.05$.

Regression Analyses

As there was no association between assertive and aggressive classifications, latent-profile memberships for these behaviors were entered as discrete variables, both dummy-coded with the "low" groups as the reference category. Given the number of analyses, alpha was set at a more conservative 0.01. Results are presented in Table 4. As expected, compared to the low-aggression group, the high-aggression group exhibited significantly higher parent-reported conduct problems and externalizing behaviors, and significantly lower parent-reported social skills. Unexpectedly, differences between the low- and moderate-aggression groups were non-significant and small in magnitude, with Cohen's d 's as follows: conduct problems, 0.12; externalizing behavior, 0.06; prosocial behavior, 0.18; and social skills, 0.11. Similarly, compared to the low-assertion group, the high-assertion group was rated as exhibiting significantly fewer conduct problems and significantly more prosocial behavior and social skills. The low- and moderate-assertion groups did not differ on any outcome (Cohen's d 's of 0.11, 0.04, 0.07, and 0.14 for conduct



Notes. Independent samples t-tests indicated that the average conditional probability of each response type differed between the low and moderate groups, $ps < .001$, the low and the high groups, $ps < .001$, and the moderate and the high groups, $ps < .001$.

Fig. 1 Children’s endorsement of aggressive responses to peer provocation as a function of latent profile and provocation type

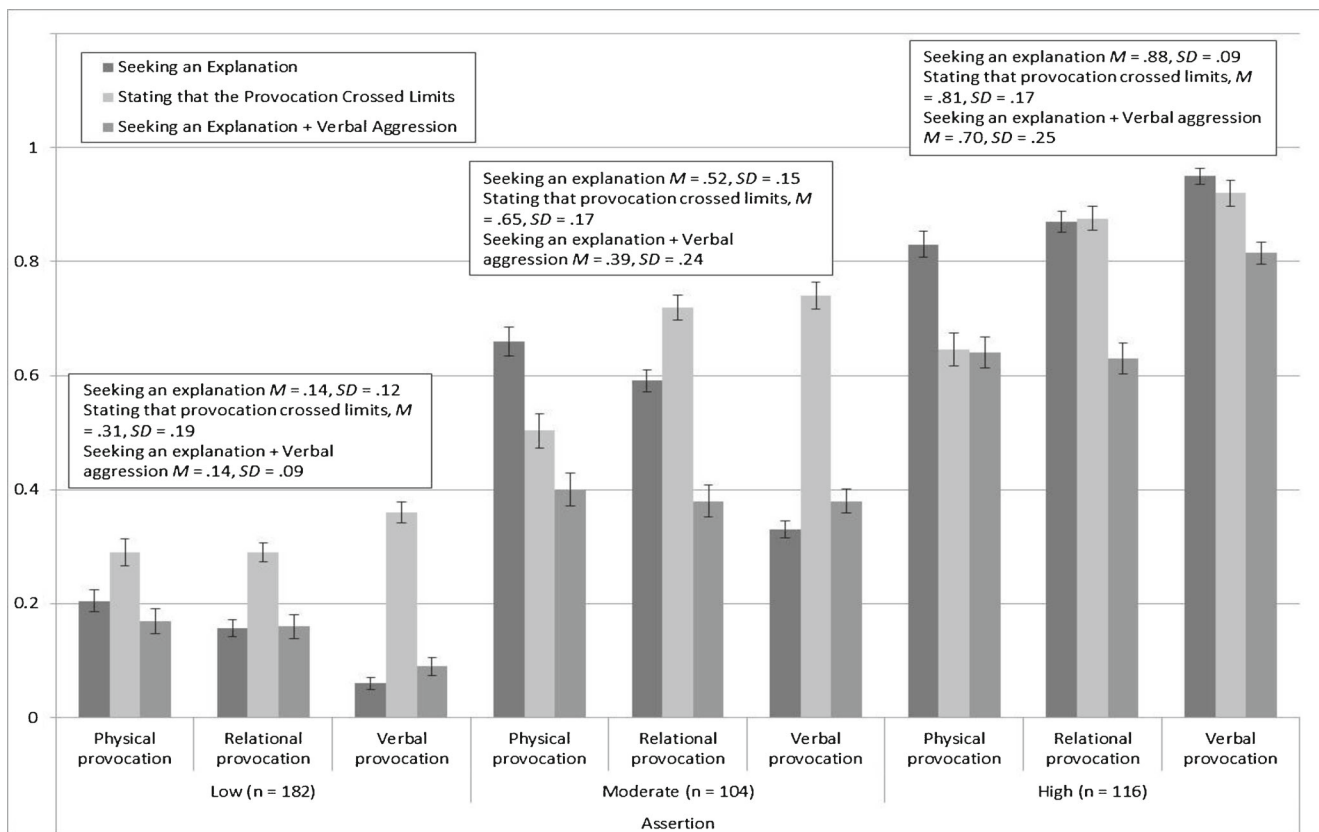
problems, externalizing problems, prosocial behavior, and social skills). In follow-up analyses, we included interaction terms examining whether (a) the association between the high-aggression group and the dependent variables was moderated by level of the assertion group, and (b) the association between the high-assertion group and the dependent variables was moderated by level of the aggression group. None of these interactions was significant.

Discussion

Our first objective was to examine children’s endorsement of assertive and aggressive responses to multiple types of peer provocation. Latent-profile analysis indicated that 3-class models provided the best fit to youth endorsement of both types of strategies. As hypothesized, profiles were distinguished by overall level of endorsement (i.e., low, moderate, and high), rather than by specific types of behavior endorsed. Gender was not associated with classification into either aggressive or assertive profiles. Previous research led us to expect that girls would be more likely to be placed in the high assertion group (Rose and Rudolph 2006). This discrepancy in findings may reflect that previous research typically has

compared mean levels of interpersonal behavior, an approach that may be more sensitive to gender differences.

Validity of the profiles was supported by the finding that children in the high-, relative to the low-, aggression group, exhibited greater parent-reported externalizing behavior and conduct problems and fewer social skills, and children in the high-assertion group exhibited more parent-reported social skills and prosocial behavior and fewer conduct problems than those in the low-assertion group. Surprisingly, the pronounced differences in children’s endorsement of aggressive and assertive responses between the low- and moderate-groups did not translate into comparable differences in parental perceptions of children’s behavior. There are at least two explanations for this finding. It may be that overall level of a behavior must be above a certain threshold before it influences parental judgments. A key difference between the moderate- and high-aggression groups was the latter group’s much greater endorsement of physical aggression, perhaps reflecting their higher use of physical aggression during real, versus hypothetical, provocation. In turn, high levels of physically aggressive responding may be especially salient to parents because it is more observable (e.g., Miller et al. 1998) and also more likely to elicit school communication and consequences (e.g., Ramirez et al. 2012). Similarly, children in the high-assertion



Notes. Independent samples t-tests indicated that the average conditional probability of each response type differed between the low and moderate groups, $ps < .001$, the low and the high groups, $ps < .001$, and the moderate and the high groups, $ps < .001$.

Fig 2 Children's endorsement of assertive responses to peer provocation as a function of latent profile and provocation type

group endorsed seeking an explanation at a higher rate than those in the moderate group. To the extent that children's endorsement of assertion mirrors their actual use of this strategy, this pattern may indicate that high levels of this behavior also influence parental judgments.

A second explanation is the cross-situational patterning of the responses. Research has demonstrated that adults' perceptions of children's general behavioral tendencies are influenced by situation-behavior contingencies (e.g., Shoda et al. 1989). As expected, in the low- and moderate-aggression groups, broadly speaking, children "matched" their endorsement of aggression to the corresponding provocation; for

example, physical aggression was primarily endorsed in response to physical provocation. Children in the high-aggression group were less discriminating, endorsing physical aggression in response to all types of provocation. Physical retaliation to an act of physical aggression may be perceived as more normative and acceptable (e.g., Huesmann and Guerra 1997), and may be encouraged in more adverse contexts characterized by community violence (Farrell et al. 2010). In contrast, physical aggression as a reaction to relational or verbal transgressions may be perceived as a more significant problem. Similarly, children in the high-assertion group endorsed seeking an explanation in nearly every situation, whereas those in the moderate-assertion group rarely selected this strategy in response to verbal provocation. Seeking an explanation for verbal provocation, which occurs more frequently than physical provocation (Craig et al. 2007) but is seen as less consequential (Newman and Murray 2005), may be particularly associated with perceptions of social skill.

Further examination of the situational patterning of assertive responses is warranted. It will also be critical to build on these findings by examining children's responses to actual episodes of peer provocation. Such research may help tease apart the extent to which *how often* versus *when* children engage in a behavior contributes to their socio-emotional

Table 3 Frequencies (average posterior probabilities) of membership in latent profiles capturing children's endorsement of aggressive and assertive responses to peer provocation

Aggression	Assertion			Total
	Low	Moderate	High	
Low	133 (0.97)	73 (0.89)	76 (0.98)	282 (0.98)
Moderate	27 (0.88)	18 (0.90)	27 (0.98)	72 (0.95)
High	22 (0.98)	13 (0.93)	13 (0.99)	48 (1.00)
Total	182 (0.98)	104 (0.93)	116 (0.99)	402

Table 4 Standardized regression coefficients linking latent-profile membership for assertive and aggressive responding to parent ratings of children’s behavior

SDQ Strengths and Difficulties Questionnaire; *SSIS* Social Skills Improvement System. To normalize the distribution of the prosocial behavior score, the variable was reflected and a log-transformation was applied. For ease of interpretation, we reversed the signs such that a positive sign indicates increased levels of the behavior. The following variables were dummy-coded: gender, males=0; ethnicity, African-American=0; aggressive and assertive responding, low=0
* $p < 0.01$. ** $p < 0.001$

	SDQ conduct problems	SSIS externalizing behavior	SDQ prosocial behavior	SSIS social skills
Age	-0.07	-0.14*	0.00	0.11
Gender	-0.12*	-0.14*	0.23**	0.13*
Family income	-0.01	0.00	0.09	-0.04
Ethnicity				
African-American versus Hispanic	0.15*	0.21**	-0.11	-0.03
African-American versus other	0.10	0.17**	-0.13*	-0.10
Class membership				
Aggressive responding				
Low versus moderate	0.05	0.03	0.07	-0.06
Low versus high	0.21**	0.19**	-0.10	-0.15*
Assertive responding				
Low versus moderate	-0.06	0.01	0.02	0.07
Low versus high	-0.17*	-0.08	0.19*	0.20*

adjustment, a question with significant implications for intervention. If overall level of physical aggression is what matters, then any reduction in this behavior should be beneficial. If, on the other hand, the interpersonal context of the behavior is important, then targeting specific situations may confer additional clinical benefit. Our data hint, for example, that reducing physically aggressive responses to verbal and relational provocation might be a good starting point.

Youths’ Coordination of Aggressive and Assertive Responding

Our second goal was to examine children’s reported coordination of assertive and aggressive strategies. We found no association between children’s classification into assertive and aggressive profiles. Perhaps especially interesting was that children in the high-aggression group were equally likely to be classified into any assertion group; that is, children endorsing high levels of aggression were not more likely to endorse low levels of assertion. Although some previous work has shown that children identified as aggressive endorse fewer assertive responses to interpersonal problems (e.g., Lochman et al. 1989; Wichmann et al. 2004; but see Peets et al. 2007), this finding is consistent with work by Hawley et al. (2002) identifying a significant number of children as “bistrategic controllers” who endorsed both prosocial and aggressive strategies to control resources. These results suggest the utility of examining both types of strategies simultaneously.

Associations between the high-aggression group and parental reports of children’s behavior did not vary as a function of assertive responding, nor did associations between the high-assertion group and parental reports vary as a

function of aggressive responding. These analyses may have been underpowered given the small number of children classified in the high-aggression group. Future work with larger samples should examine variability in the socio-emotional correlates of children classified based on multiple key social behaviors, such as assertion and aggression, via observed behaviors in real time and endorsement of responses on hypothetical vignettes, thereby leveraging the strengths of each method.

Implications for Assessment and Intervention

To conduct such work, it is almost essential to examine social skills with respect to important social situations. The relevant behaviors will vary as a function of interpersonal context and a decontextualized approach to assessment will quickly result in an unwieldy number of strategies. This focus on children’s management of key social circumstances may also pay dividends clinically. Our results build on previous work examining the situation specificity of children’s behavior (Dirks et al. 2012b) by suggesting the nuanced behavioral repertoire that children may be utilizing to manage a situation as narrowly defined as peer provocation. For this reason, it may be beneficial to include situation-based measures of youth’s endorsement of social strategies in clinical assessment batteries. These tools could provide detailed treatment targets, by highlighting the specific circumstances in which children are engaging in problematic social behaviors, and indicating whether and when they utilize more adaptive responses.

Moreover, there may be clinical benefits associated with setting management of key social tasks, rather than reducing

or increasing targeted behaviors per se, as the goal of interventions, a framework that may align well with prevention programs, which inherently target a more heterogeneous group of children likely to exhibit greater variability in their behavioral profiles. Many prevention programs include social problem-solving components (Boustani et al. 2014), which teach children to manage important interpersonal situations.

Our findings contribute to a body of work on the situation specificity of youth's interpersonal responding that supports this focus (see Dirks et al. 2012b), but caution that one or two modules may be insufficient given the apparent complexity of children's behavioral repertoires, and the subtlety of "fit" between situation and action.

Further work using observational procedures will strengthen the intervention implications of this line of investigation. Managing provocation effectively requires children to respond while experiencing negative affect, and insufficient attention to this issue will severely impede the development of effective treatment protocols. Analogue provocation situations offer one valuable tool for further elucidating children's coordination of aggression and assertion (see Frick and Loney 2000). Specifically, this approach examines children's responding under more "real world" conditions, as well as providing access to non-verbal cues that may accompany responses and alter interpretations (Underwood et al. 1999).

There were several limitations to this investigation. First, 17 % of parents did not provide data. Although children with and without parent data did not differ on measured variables, they may have differed in ways we were not able to test. Although missing data raises concerns about generalizability, the associations between youth's endorsement of aggressive and assertive strategies and parent-reported social skills and externalizing problems were broadly consistent with our hypotheses, increasing confidence in the findings. In addition, reliability of the SDQ subscales was lower than optimal, likely because of the small number of items. This concern is mitigated to some extent by our inclusion of a second parent-report measure of children's social skills and externalizing behavior that exhibited greater reliability. In the future, it will be important to index youth responses against peer reports of their behavior, as peers and parents have access to different behavioral samples, as well as different perceptions of the efficacy of social behaviors (Dirks et al. 2012a, b).

In summary, this study contributes to the literature examining children's management of peer provocation, focusing on their endorsement of aggressive and assertive responses to hypothetical vignettes. Results indicated that youth in this lower-income sample coordinate different types of strategies across physical, verbal, and relational provocation. Moreover, the findings hint that the cross-situational patterning of responses may be associated with parental perceptions of children's behavior. Our results add to a growing body of evidence that indicates measuring and intervening on social

behaviors with respect to key interpersonal situations will confer significant theoretical and clinical advantages, providing a framework for further development of interventions that consider both social skills and social situations.

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