

Relational Victimization Predicts Children's Social-Cognitive and Self-Regulatory Responses in a Challenging Peer Context

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In this study, the authors examined whether exposure to relational victimization was associated with children's thoughts, emotions, and behavior in an unfamiliar, challenging peer context. Children (110 girls, 96 boys; mean age = 10.13 years, $SD = 1.16$) reported on their exposure to relational victimization by peers. Following a challenging interaction with an unfamiliar peer, children reported on their beliefs about their interaction partners and their social goals (i.e., focus on getting to know their partner vs. impressing their partner) during the interaction. Coders rated children's emotion and behavior regulation and the quality of the dyadic context. Results from hierarchical linear modeling analyses reveal that relational victimization predicted maladaptive social-cognitive processes (i.e., more negative peer beliefs and a heightened performance goal orientation) and heightened emotion and behavior dysregulation. Several of these effects were particularly salient in the context of a conflictual dyadic interaction. This research provides insight into impairments associated with relational victimization that may contribute to the emergence and/or perpetuation of peer difficulties.

Keywords: relational victimization, social cognition, self-regulation

Relational victimization is defined as exposure to behaviors aimed at damaging relationships or one's social reputation, such as exclusion, manipulation, and rumor spreading (Crick & Grotpeter, 1996). Research links relational victimization within the broader peer group (classmates or schoolmates) and within more intimate relationships (friendships) to emotional, behavioral, and interpersonal maladjustment (Crick & Bigbee, 1998; Crick, Casas, & Nelson, 2002; Crick & Grotpeter, 1996; Crick & Nelson, 2002; LaGreca & Harrison, 2005; Prinstein, Boergers, & Vernberg, 2001; Storch, Masia-Warner, Crisp, & Klein, 2005). To date, however, research has focused on describing global impairment (e.g., levels of internalizing symptoms, status in the peer group) rather than identifying specific difficulties (e.g., social-cognitive deficits, situation-specific regulation of emotions) associated with

relational victimization. In the present study, we sought to address this gap by identifying social-cognitive and self-regulatory correlates of relational victimization. Specifically, in this study we examined the hypothesis that relational victimization would be associated with (a) more negative peer beliefs and maladaptive social goals and (b) greater emotion and behavior dysregulation. We investigated these hypothesized associations using a novel methodological paradigm that provided the opportunity to examine whether exposure to relational victimization predicted children's social-cognitive and self-regulatory responses in an unfamiliar and challenging peer context.

Methodological Issues in the Study of Victimization

Victimized children typically are studied within familiar peer environments, making it difficult to disentangle stable characteristics of these children from characteristics that are expressed in the context of specific aversive relationships. In contrast, in the present study we examined whether relational victimization predicted children's responses during an interaction with an unfamiliar peer, providing insight into social-cognitive and self-regulatory processes that generalize beyond familiar peer relationships (for a similar approach, see Schwartz, Dodge, & Coie, 1993; Schwartz et al., 1998). Of course, characteristics that are expressed in novel contexts may reflect either dispositional traits that preceded victimization or the persistent consequences of victimization. Regardless of their origin, if these characteristics are carried forward into new relationships, they will likely trigger the perpetuation of social problems, making them a key target for research and intervention.

On the basis of the assumption that maladaptive social-cognitive and self-regulatory processes would be most strongly activated in

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the face of social challenge, we examined these processes in the context of a potentially competitive interaction. Moreover, on the basis of evidence that the problems of socially maladjusted children often emerge only within specific relationships (Coie et al., 1999; Dodge, Price, Coie, & Christopoulos, 1990; Hubbard, Dodge, Cillessen, Coie, & Schwartz, 2001; Troop-Gordon & Brock, 2005), we evaluated whether the quality of the emerging relationship with the unfamiliar peer moderated the link between relational victimization and social-cognitive and self-regulatory processes. That is, children's responses during a novel peer interaction likely reflect not only temperament-based or acquired patterns of responding to social challenge but also the current context in which the children are embedded. Although all children were presented with a moderately challenging task, specific dyads may have approached the task differently, leading to differing dyadic contexts. We anticipated that relational victimization would more strongly predict maladaptive social-cognitive and self-regulatory responses in children embedded within conflictual rather than positive dyadic contexts.

Relational Victimization and Social-Cognitive Processes

Our first aim was to examine whether relational victimization predicted children's social-cognitive responses in an unfamiliar, challenging peer context. In particular, we anticipated that exposure to relational victimization would predict more pessimistic peer beliefs (i.e., beliefs that peers are more hostile and less cooperative) and less adaptive social goals (i.e., less mastery and more performance) in this novel context.

Peer Beliefs

According to several theoretical perspectives, individual differences in social orientation are internalized in the form of databases (Crick & Dodge, 1994), relational schemas (Baldwin, 1992), or cognitive representations (Dweck & London, 2004; Main, Kaplan, & Cassidy, 1985; Rudolph, Hammen, & Burge, 1995), which contain beliefs about the self and others. Whereas some children view peers in an optimistic light, believing that they are likely to be supportive and trustworthy, others view peers in a pessimistic light, believing that they are likely to be hostile and uncooperative (Rabiner, Keane, & MacKinnon-Lewis, 1993; Rudolph et al., 1995). Exposure to relational victimization may leave children feeling socially alienated and wary, thereby fostering negative beliefs about peers' social orientation (Salmivalli & Isaacs, 2005; Troop-Gordon & Ladd, 2005). Alternatively, negative peer beliefs may cause children to act in ways that elicit relational victimization; for example, negative peer beliefs predict subsequent aggression (MacKinnon-Lewis, Rabiner, & Starnes, 1999). Consistent with the predicted association between relational victimization and peer beliefs, research links victimization to hostile attributions about peer problems (Camodeca & Goossens, 2005; Høglund & Leadbeater, 2007; Schwartz et al., 1998) and negative peer belief systems (Salmivalli & Isaacs, 2005; Troop-Gordon & Ladd, 2005). Unfortunately, prior research has examined only victimized children's generalized perceptions of "other kids" or familiar peers, leaving open the question of whether these belief systems are carried into new relationships with no history of aversive interactions. In contrast, in the present study we examined whether

exposure to relational victimization predicted negative beliefs about a specific unfamiliar peer.

Social Goals

According to social goal theory (Erdley, Cain, Loomis, Duman-Hines, & Dweck, 1997), some children focus on developing their peer relationships and friendships (mastery goals), whereas others focus on gaining social approval or avoiding social disapproval (performance goals). This theory further distinguishes two types of performance goals. High-risk performance goals are difficult to achieve but, if achieved, prove one's status in the peer group (e.g., trying to impress other children). Low-risk performance goals minimize one's potential for failure and negative judgment (e.g., trying to avoid criticism by acting in ways that ensure acceptance by peers). For example, in the context of meeting a new child, a mastery goal might involve talking about oneself and getting to know the other child to develop a relationship; a high-risk performance goal might involve talking about all of one's friends to impress the other child with one's popularity; a low-risk performance goal might involve talking about anything the new child wants so that the child will be sure to like you (Erdley et al., 1997).

Once again, alternate pathways may link relational victimization and social goals. On the one hand, exposure to victimization may lead children to view peer interactions as evaluative contexts rather than as opportunities for relationship building, thereby causing them to focus on performance rather than mastery goals. On the other hand, children who focus on gaining prestige or avoiding disapproval at the expense of relationship building may become targets of victimization. Little is known about the social goals of victimized children (for an exception, see Camodeca & Goossens, 2005); in the present study we examined whether exposure to relational victimization predicted the pursuit of maladaptive social goals in a novel peer context.

Relational Victimization and Self-Regulatory Processes

Our second aim was to examine whether relational victimization predicted children's self-regulatory responses in an unfamiliar, challenging peer context. Healthy peer relationships provide a context in which children learn to regulate their emotions and behavior and to manage conflict (Asher & Rose, 1997; Bukowski, 2003; Hartup & Stevens, 1997; H. S. Sullivan, 1953; von Salish, 2001; Weiss, 1986). Exposure to relational victimization may undermine the development of effective emotion management and coping strategies. Moreover, repeated harassment by peers may increase children's stress reactivity and lead to dysregulated emotions and behavior in challenging social situations. Alternatively, high levels of emotion and behavior dysregulation may cause children to become easy targets of victimization (Pope & Bierman, 1999; Schwartz & Proctor, 2000; Shields & Cicchetti, 2001).

Consistent with this proposed association, research links victimization with outwardly directed dysregulation of emotions (e.g., anger, emotional overreactivity) and behavior (e.g., aggression; Schwartz, 2000; Schwartz, McFadyen-Ketchum, Dodge, Pettit, & Bates, 1999; Wilton, Craig, & Pepler, 2000), as well as inwardly directed dysregulation of emotions (e.g., anxiety) and behavior (e.g., submissiveness; Boivin, Hymel, & Bukowski, 1995; Kochenderfer & Ladd, 1997; Olweus, 1978; Schwartz, 2000;

Schwartz et al., 1998; for a review, see Schwartz, Proctor, & Chien, 2001). However, most prior research focuses on general patterns of emotion and behavior (cf. Schwartz et al., 1993; Wilton et al., 2000). In contrast, in the present study we examined “on-line” emotional and behavioral responses during a challenging peer interaction, allowing us to determine whether exposure to relational victimization predicted dysregulation even in the context of an emerging relationship with no prior history of aversive interactions.

Overview of the Present Research

In sum, in this study we examined whether exposure to relational victimization predicted how children think, feel, and behave during a challenging interaction with an unfamiliar peer. Using an unfamiliar peer as the interaction partner enabled us to determine whether social-cognitive and self-regulatory correlates of relational victimization are transferred to a novel peer context. We anticipated that heightened exposure to relational victimization would predict more negative peer beliefs (i.e., beliefs that peers were more hostile and less cooperative), less adaptive social goals (i.e., less mastery and more performance), and more emotion and behavior dysregulation. Moreover, we expected that these associations would be intensified in the context of conflictual dyadic interactions and tempered in the context of positive dyadic interactions.

Because relational victimization often is difficult for adults to observe, and because children’s perceptions of victimization may be the strongest predictor of their approach to novel peer interactions, we viewed self-report as the most useful source of information about victimization. Thus, children reported on their relational victimization, as well as their peer beliefs and social goals, during the interaction. Observations were used to assess self-regulatory processes and the quality of the dyadic context.

In light of evidence that girls and boys show differing orientations toward relationships, we also examined sex differences in the social-cognitive and self-regulatory correlates of relational victimization. Whereas girls emphasize relationship-maintaining goals, care more about dyadic friendships, and are more concerned about the loss of relationships, boys place a greater emphasis on agentic and status-oriented goals (for a review, see Rose & Rudolph, 2006). These orientations may foster different responses to relational victimization. Indeed, some research suggests that relational victimization is viewed as more hurtful and upsetting by girls than by boys (Crick, Grotpeter, & Bigbee, 2002; Galen & Underwood, 1997; Pacquette & Underwood, 1999). However, other research suggests that relational victimization is associated with emotional and behavioral maladjustment among both girls and boys (Cullerton-Sen & Crick, 2005; T. N. Sullivan, Farrell, & Kliwer, 2006). We therefore examined whether sex moderated the link between relational victimization and social-cognitive and self-regulatory processes.

Method

Participants

Participants were 206 children (110 girls, 96 boys; mean age = 10.13 years, $SD = 1.16$, range = 7.75–13.50 years) with informed

consent who were recruited from the midwest region of the United States.¹ Eligible participants were selected from two sources on the basis of age and school district (to allow for matching of unfamiliar peers). Most (83%) of the participants were recruited from two developmental psychology participant pools at the University of Illinois; these participant pools included children who had previously participated in various studies of cognitive and social development. A few (17%) of the participants had previously participated in projects conducted by Karen D. Rudolph. The children were primarily White (87.4%), with a few other ethnic groups represented (4.9% African American, 2.4% Asian American, 1.5% Latino/a, 0.5% Native American, and 3.4% multiethnic or other). On the basis of the ethnic composition of the counties from which the participants were drawn (81.1% White, 9.9% African American, 5.8% Asian, 0.2% Native American, and 3.0% multiethnic or other), this sample was reasonably representative in terms of ethnicity with a slight underrepresentation of minorities. Families were from diverse economic backgrounds representing a range of income levels: 45.8% earning under \$60,000, 35.9% earning \$60,000–\$89,999, and 18.2% earning over \$90,000. On the basis of the distribution of household incomes in the counties from which the participants were drawn (56.9% earning under \$50,000, 30.5% earning \$50,000–\$99,999, and 12.5% earning over \$100,000), this sample was reasonably representative in terms of economic background, with a slight underrepresentation of low-income families.

Families were contacted by telephone to assess their interest in participating in the study. If families indicated interest, they provided a schedule of availability. Follow-up phone calls were made to schedule laboratory visits. Participants from different school districts were paired to ensure lack of familiarity between partners. Other than matching across school districts, children were randomly assigned to dyads on the basis of sex (same sex) and age (within 1 year). Children were questioned prior to the task to ensure that they were paired with an unfamiliar peer. In no instances did partners discover that they had previous contact.

To examine the composition of the dyads, we categorized children into those scoring below the mean (≤ 2) and those scoring above the mean (> 2) on the relational victimization measure. Those scoring above 2 experienced at least some degree of victimization. On the basis of this grouping procedure, 37% of the dyads contained no victimized children, 43% contained 1 victimized child, and 20% contained 2 victimized children, suggesting a fairly broad distribution of dyads. Using a cutoff of 2.5, 61% of the dyads contained no victimized children, 30% contained 1 victimized child, and 9% contained 2 victimized children. Thus, even a higher cutoff yielded a significant number of dyads with at least 1 victimized child.

Procedure

Upon arrival at the session, parents provided written consent, and children provided written assent. Several measures were then administered to participating children. To ensure a lack of contact prior to their interaction, we had dyadic partners complete ques-

¹ Behavioral observation data were only available for 202 children (101 dyads) because of equipment failure.

tionnaires in separate rooms. Researchers read each question and response option aloud, and children circled their responses. Following completion of the pretask measures, dyads of children participated in a social challenge task (Rudolph, Hammen, & Burge, 1994, 1997). Participants were told that whoever constructed a copy of a block model would win a prize. They were given a set of blocks sufficient to complete only a single model, and were allowed to build for 9 min. They were then informed that they would each receive a prize for their efforts, and they were instructed to decide on the distribution of two prizes of noticeably unequal value. Following the task, children completed additional questionnaires. At the end of the study, the participants were debriefed, and the one who had received the less valuable prize was given the opportunity to exchange it for a higher valued prize.

Measures

Relational Victimization

Prior to the challenge task, children completed a measure assessing their exposure to relational victimization, as reflected in behaviors aimed at damaging or threatening to damage their peer relationships and friendships. This measure included five items drawn from the Social Experience Questionnaire (Crick & Grotpeter, 1996), a well-validated measure of victimization (e.g., "How often does another kid tell lies about you to make other kids not like you anymore?" and "How often does another kid say they won't like you unless you do what they want you to do?"), and five new items that assessed relational victimization specifically in the context of friendships (e.g., "How often does a friend get even with you by spending time with new friends instead of you?" and "How often does a friend who is mad at you ignore you or stop talking to you?"). Items were added to provide a more comprehensive assessment of different types of relational victimization. Children rated each item on a scale ranging from 1 (*never*) to 5 (*all the time*). Scores were calculated as the mean of the 10 items ($\alpha = .89$), with higher scores reflecting more victimization. Research suggests that self-reports of victimization, in general (Graham & Juvonen, 1998; Ladd & Kochenderfer-Ladd, 2002), and relational victimization, in particular (Crick & Bigbee, 1998), provide valid information that corresponds to reports by peers and teachers in middle childhood; self-reports of victimization correspond with behavioral observations as early as kindergarten (Kochenderfer & Ladd, 1997).

As displayed in Table 1, the mean victimization score reflected the relatively low overall level of victimization typically experienced in school samples (e.g., Crick & Grotpeter, 1996; Storch, Crisp, Roberti, Bagner, & Masia-Warner, 2005). However, 24% of children received scores of 2.5 or higher, and 16% received scores of 3 or higher (a score of 2.82 represented 1 standard deviation above the mean), suggesting that a considerable number of children reported at least moderate levels of relational victimization.

Social-Cognitive Processes

Peer beliefs. Following the dyadic interaction, children completed several ratings reflecting their beliefs about their partner. Specifically, they rated on a scale ranging from 1 (*not at all*) to 5 (*very much*) how much they thought their partner showed four social attributes (trying to boss you around, out to get you, cooperating, trying to get along). A principal component factor analysis of these ratings yielded one factor, which accounted for 40% of the variance; all of the factor loadings were $>.60$. The positive attributes were recoded, and scores were computed as the mean of the four attributes ($\alpha = .71$), with higher scores reflecting more negative peer beliefs.

Social goals. Following the dyadic interaction, children rated on a scale ranging from 1 (*not at all*) to 5 (*very much*) how much they were trying to attain various social goals during the interaction. Two of these items measured children's pursuit of mastery goals ("How important was it for you to learn about the other kid?" and "How important was it for you to get to know the other kid?"). These two items were strongly correlated ($r = .70, p < .001$) and, thus, were averaged to create a composite score reflecting children's mastery goals during the interaction. Children also rated the extent to which they pursued a high-risk performance goal ("How important was it for you to impress the other kid?") and a low-risk performance goal ("How important was it for you to be liked by the other kid?").

To assess the validity of these items, we correlated children's scores with their responses to a hypothetical vignettes questionnaire (Erdley et al., 1997), which children completed prior to the challenge task. This measure presents children with five hypothetical social situations and asks them to rate the extent to which they would pursue mastery, high-risk performance, and low-risk performance goals. Establishing concurrent validity, the correlation between children's mastery goals during the challenge task and their ratings of mastery goals in response to the hypothetical

Table 1

Descriptive Statistics and Correlations Among Social-Cognitive Processes, Self-Regulatory Processes, and Relational Victimization

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Negative peer beliefs	1.65	0.76	—							
2. Mastery goals	3.82	1.06	-.48***	—						
3. High-risk performance goal	1.67	1.09	.18**	-.03	—					
4. Other-directed negative emotion	1.40	0.75	.30***	-.11	.09	—				
5. Self-directed negative emotion	1.37	0.65	.27***	-.11	.05	.55***	—			
6. Hostile behavior	1.37	0.55	.28***	-.07	.13	.75***	.46***	—		
7. Inhibited behavior	1.45	0.52	.14*	-.16*	.16*	.07	.17*	-.12	—	
8. Relational victimization	2.01	0.81	.22**	.02	.23**	.13	.15*	.22**	-.15*	—

Note. Means and standard deviations were calculated using the raw data. Correlations were calculated using log-transformed variables.

* $p < .05$. ** $p < .01$. *** $p < .001$.

vignettes was significant ($r = .38, p < .001$), as was the correlation between their pursuit of a high-risk performance goal during the challenge task and their ratings of high-risk performance goals in response to the hypothetical vignettes ($r = .26, p < .001$). These correlations were likely moderate in size given that the former measure assesses situation-specific social goals, whereas the latter assesses generalized social goal orientation. Establishing discriminant validity, mastery goals during the challenge task were not significantly associated with performance goals in response to the vignettes ($r_s = -.08$ and $-.09, ns$), and a high-risk performance goal during the challenge task was not associated with mastery goals in response to the vignettes ($r = -.03, ns$). The correlation between the item tapping children's pursuit of a low-risk performance goal during the challenge task and children's ratings of low-risk performance goals in response to the hypothetical vignettes was nonsignificant ($r = .11, ns$). Therefore, the low-risk performance goal item was dropped from further analysis.

Self-Regulatory Processes

Trained coders rated videotapes of the interaction on various aspects of emotion and behavior regulation. To ensure independent ratings of the dyadic partners, we assigned two coders to each dyad; one of the coders rated each of the children. Coders had no knowledge about scores on other study measures or about the ratings of the other child in each interaction. Coders participated in an intensive initial training period to familiarize them with the coding system and to discuss questions. During this time, they conducted group coding of sample videotapes. Following the group training, they conducted individual coding of sample tapes and met on a regular basis to discuss ongoing questions. After each coder reached an average reliability criterion of .70 across codes, they conducted individual coding of study tapes, continuing to meet periodically to minimize rater drift.

First, using a detailed coding system (i.e., very specific instructions, definitions, and examples were provided), coders rated three dimensions of emotion and behavior dysregulation—as reflected in facial, body, and verbal expressions—on a scale ranging from 1 (*not at all present*) to 7 (*largely present*). Specifically, coders rated expressions of other-directed negative emotion (e.g., anger, irritability, impatience), self-directed negative emotion (e.g., anxiety, sadness, frustration, or disappointment with self), and aggression (e.g., controlling/manipulative behavior, hostility/coercion, teasing, blaming/criticism, verbal/physical aggression). Second, on the basis of their global impressions (i.e., no specific instructions, definitions, or examples were provided), coders rated 14 descriptors of emotion and behavior dysregulation on a scale ranging from 1 (*not at all*) to 4 (*very much*). Specifically, coders rated nine adjectives that reflected hostile behavior (hostile, argumentative, dominating, mean, manipulative, stubborn, disruptive, aggressive, and angry) and five adjectives that reflected inhibited behavior (withdrawn, unemotional, shy, cautious, and [reverse-scored] outgoing). Scores were calculated as the mean of the ratings for the Hostile Behavior subscale ($\alpha = .88$) and the Inhibited Behavior subscale ($\alpha = .86$). Coders watched the interaction several times, taking careful notes; ratings for both the detailed coding system and the global impressions were based on the entire interaction.

To assess reliability, two independent coders rated 25% of the interactions. Adequate interrater reliability (intraclass correlation

coefficients; ICCs) was found for other-directed negative emotion (ICC = .88), self-directed negative emotion (ICC = .80), aggression (ICC = .81), hostile behavior (ICC = .70), and inhibited behavior (ICC = .65). Although the interrater reliability for the Hostile Behavior and Inhibited Behavior subscales was somewhat lower, likely because of the impressionistic nature of these ratings, the combined use of both specific and impressionistic coding approaches provided a more comprehensive assessment of dysregulation; thus, analyses included all of the codes. Because of conceptual and statistical overlap ($r = .56$) between the aggression score from the detailed coding system and the hostile behavior score from the global impressions, a composite hostile behavior score was created by averaging the two scores.

Dyadic Context

Using a detailed coding system, coders rated several aspects of the dyadic context. One of the two coders for each dyad was randomly assigned to complete ratings of the overall dyad. On a scale ranging from 1 (*not at all present*) to 7 (*largely present*), coders rated the degree of collaboration of the dyad (e.g., teamwork, cooperation), problem-solving competence of the dyad (e.g., effective negotiation), mutuality/reciprocity (e.g., responsiveness, connectedness, balance of power), and conflict or friction between the partners (e.g., negative exchanges, arguments). A principal component factor analysis of these ratings yielded two factors. The first factor (*positive dyadic quality*) accounted for 60% of the variance and consisted of the three positive dyadic qualities. The second factor (*conflictual dyadic quality*) accounted for 26% of the variance and consisted of the single rating of conflict or friction. A score for positive dyadic quality was computed as the mean of the three positive dyadic qualities ($\alpha = .85; M = 3.13, SD = 1.15$), with higher scores reflecting a more positive dyadic quality. The conflictual dyadic quality score reflected the single rating of conflict ($M = 1.56, SD = 0.74$). Neither positive dyadic quality ($r = .08, ns$) nor conflictual dyadic quality ($r = .12, ns$) was associated with the number of victimized children in each dyad. On the basis of independent coding of 25% of the interactions, strong reliability was found for the ratings of positive dyadic quality (ICC = .92) and conflictual dyadic quality (ICC = .85).

Results

Correlational Analyses

Table 1 presents descriptive data and intercorrelations among the measures. These data provide a general picture of the distribution of scores and the pattern of associations. A series of *t*-tests was conducted to explore sex differences in the variables. Girls reported greater pursuit of mastery goals ($M = 3.97, SD = 1.00$) than did boys ($M = 3.64, SD = 1.12$), $t(202) = 2.09, p < .05$. Boys received higher ratings for inhibited behavior ($M = 1.91, SD = 0.70$) than did girls ($M = 1.65, SD = 0.57$), $t(198) = 2.62, p < .01$. No other sex differences were found.

Because of significant skew in the variables (with the exception of positive dyadic quality), a log transformation was performed prior to running subsequent analyses. Intercorrelations among the criterion variables (i.e., social-cognitive and self-regulatory processes) were generally low to moderate (see Table 1). As anti-

pated, relational victimization was positively associated with negative beliefs about one's dyadic partner, the pursuit of a high-risk performance goal, self-directed negative emotion, and hostile behavior. There also was a significant negative correlation between relational victimization and inhibited behavior.

Multilevel Modeling of Social-Cognitive and Self-Regulatory Processes

To account for dependencies in the data resulting from the dyadic pairings, we tested a series of multilevel models using hierarchical linear modeling (HLM) software (Bryk & Raudenbush, 1992; for application to dyadic data, see Kenny, Kashy, & Cook, 2006). Multilevel modeling also allowed for an investigation of whether dyad-level variables (i.e., the sex of the dyad and the dyadic quality) predicted social-cognitive and self-regulatory processes and/or moderated the association between relational victimization and these processes.

As recommended by Bryk and Raudenbush (1992), prior to testing the predictive associations, a fully unconditional model was examined for each criterion variable (i.e., no individual-level or dyad-level predictors were included in the analysis). These unconditional models allowed us to calculate the within-dyad (u_{0j}) and between-dyads (r_{ij}) variance for each criterion variable. The unconditional model also was used to compute the ICC for each criterion variable, providing an estimate of the percentage of total variance accountable to differences between dyads. Table 2 presents the variance components and ICCs for each criterion variable. Overall, little of the variance in children's social-cognitive processes was due to differences between dyads, as indicated by the nonsignificant chi-square values. However, the dyads did differ in their negative beliefs about their partner. The ICC indicated that approximately 14% of the variance in negative beliefs was accounted for by differences between the dyads. There was significant between-dyads variance in each of the self-regulatory processes. The amount of variance in each of these processes that was due to differences between dyads varied from approximately 12% to 45%.

Given the nested nature of the data, we conducted a series of HLM analyses in which relational victimization was added as an individual-level (i.e., Level 1) predictor to examine the hypothesis that relational victimization would predict more maladaptive social-cognitive and self-regulatory processes. Sex of the dyad, positive dyadic quality, and conflictual dyadic quality were in-

cluded as dyad-level (i.e., Level 2) predictors of the intercept, allowing us to investigate whether differences between the dyads in social-cognitive and self-regulatory processes could be accounted for by the sex of the dyad or the dyadic quality. Sex of the dyad, positive dyadic quality, and conflictual dyadic quality also were included as predictors of the relational victimization slope to examine the hypothesis that the dyadic context would moderate associations between relational victimization and children's social-cognitive and self-regulatory responses. Effect sizes (ESs) for each significant effect were assessed by computing the standardized r (Hunter & Schmidt, 1990; see also McCullough, Fincham, & Tsang, 2003) and by calculating the pseudo R^2 for each hierarchical linear model (see Kenny et al., 2006). A standardized r between .10 and .30 reflects a small ES, and a standardized r between .30 and .50 reflects a medium ES (Cohen, 1988). We explored significant interactions using procedures and equations outlined by Bauer and Curran (2005; see also Preacher, Curran, & Bauer, 2006). Specifically, tests of simple slopes for relational victimization were estimated at low, medium, and high (i.e., -1 , 0 , and 1 standard deviation) levels of the moderating (i.e., dyad-level) variable.

Social-Cognitive Processes

Table 3 presents results of the three HLM analyses conducted for the social-cognitive processes. Consistent with the t -tests presented earlier, female dyads reported greater pursuit of mastery goals than did male dyads ($ES = .23$). Conflictual dyadic quality predicted more negative peer beliefs ($ES = .31$); positive dyadic quality marginally predicted less negative peer beliefs ($ES = -.18$).

After adjusting for these main effects of dyadic context, relational victimization significantly predicted a tendency to hold more negative peer beliefs ($ES = .21$) and to pursue a high-risk performance goal ($ES = .20$). The association between relational victimization and negative peer beliefs was somewhat moderated by the dyadic context. Specifically, a marginal Victimization \times Conflictual Dyadic Quality interaction ($ES = .12$) was found. Decomposition of this interaction revealed that relational victimization predicted more negative peer beliefs in dyads with high ($\gamma_{10} = .30$, $p < .01$) and average ($\gamma_{10} = .19$, $p < .01$) levels of conflict but not with low ($\gamma_{10} = .09$, ns) levels of conflict.

Together, the predictors accounted for 13.2%, 0.5%, and 2.8% of the variance in negative beliefs, mastery goals, and high-risk

Table 2
Between-Dyads and Within-Dyad Variance Components Estimated From Unconditional Models

Variance component	Social-cognitive processes			Self-regulatory processes			
	Negative peer beliefs	Mastery goals	High-risk performance goal	Other-directed negative emotion	Self-directed negative emotion	Hostile behavior	Inhibited behavior
Within-dyad variance (u_{0j})	.12	.25	.26	.13	.10	.05	.08
Between-dyads variance (r_{ij})	.019*	.000	.001	.033	.043	.044	.011
$\chi^2(100)$	130.47*	90.73	95.97	150.64**	187.31***	266.87***	125.43*
ICC	.14	.00	.00	.20	.30	.45	.12

Note. ICC = intraclass correlation coefficient.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3
Coefficient Estimates of Fixed Effects and Variance Components Estimated From HLM Analyses Predicting Social-Cognitive Processes During the Dyadic Interaction

Variable	Negative peer beliefs	Mastery goals	High-risk performance goal
Fixed effects			
Intercept (γ_{00})	.37***	.66***	.36***
Sex (γ_{01})	-.04	.15*	-.06
Positive dyadic quality (γ_{02})	-.04 [†]	.02	-.03
Conflictual dyadic quality (γ_{03})	.24**	-.12	.07
Victimization (γ_{10})	.19**	.06	.27**
Sex (γ_{11})	.21	-.14	-.05
Positive dyadic quality (γ_{12})	.01	-.03	-.01
Conflictual dyadic quality (γ_{13})	.25 [†]	.04	.20
Random effects			
Between-dyads variance (u_{0j})	.003	.000	.000
Within-dyad variance (r_{ij})	.120	.250	.250

Note. HLM = hierarchical linear modeling.
* $p < .05$. ** $p < .01$. *** $p < .001$. [†] $p < .10$.

performance goals, respectively. The remaining unexplained variance was attributable almost entirely to individual differences.

Self-Regulatory Processes

Table 4 presents results of the four HLM analyses conducted for the self-regulatory processes. Consistent with the *t*-tests reported earlier, female dyads showed less inhibited behavior than did male dyads ($ES = -.26$). Positive dyadic quality predicted less inhibited behavior ($ES = -.36$). Conflictual dyadic quality predicted more other-directed negative emotion, self-directed negative emotion, and hostile behavior ($ESs = .55, .38, \text{ and } .65$, respectively).

Table 4
Coefficient Estimates of Fixed Effects and Variance Components Estimated From HLM Analyses Predicting Self-Regulatory Processes During the Dyadic Interaction

Variable	Other-directed negative emotion	Self-directed negative emotion	Hostile behavior	Inhibited behavior
Fixed effects				
Intercept (γ_{00})	.24***	.24***	.25***	.32***
Sex (γ_{01})	-.02	.01	.02	-.11**
Positive dyadic quality (γ_{02})	-.03	.01	-.02	-.07***
Conflictual dyadic quality (γ_{03})	.43***	.30***	.41***	.01
Victimization (γ_{10})	.08	.10	.12*	-.12*
Sex (γ_{11})	.05	-.03	-.04	.14
Positive dyadic quality (γ_{12})	-.05	-.04	-.04	.00
Conflictual dyadic quality (γ_{13})	.33 [†]	.00	.38**	-.20 [†]
Random effects				
Between-dyads variance (u_{0j})	.000	.026**	.007 [†]	.006
Within-dyad variance (r_{ij})	.130	.100	.054	.070

Note. HLM = hierarchical linear modeling.
* $p < .05$. ** $p < .01$. *** $p < .001$. [†] $p < .10$.

After adjusting for these main effects of dyadic context, relational victimization significantly predicted more hostile behavior ($ES = .17$) and less inhibited behavior ($ES = -.17$). However, several of the associations between relational victimization and self-regulatory processes were moderated by the dyadic context. Specifically, a significant Victimization \times Conflictual Dyadic Quality interaction was found for hostile behavior ($ES = .22$), and marginal Victimization \times Negative Dyadic Quality interactions were found for other-directed negative emotion ($ES = .19$) and inhibited behavior ($ES = .16$).

Decomposition of the interaction for hostile behavior revealed that relational victimization predicted more hostile behavior in dyads with high ($\gamma_{10} = .27, p < .01$) and average ($\gamma_{10} = .12, p < .05$) levels of conflict but not with low ($\gamma_{10} = -.04, ns$) levels of conflict. Decomposition of the interaction for other-directed negative emotion revealed that relational victimization marginally predicted more other-directed negative emotion in dyads with high ($\gamma_{10} = .22, p < .10$) levels of conflict but not with average ($\gamma_{10} = .08, ns$) or low ($\gamma_{10} = -.05, ns$) levels of conflict. Finally, decomposition of the interaction for inhibited behavior revealed that relational victimization predicted less inhibited behavior in dyads with high ($\gamma_{10} = -.20, p < .001$) and average ($\gamma_{10} = -.12, p < .05$) levels of conflict but not with low ($\gamma_{10} = -.03, ns$) levels of conflict.

Together, the predictors accounted for 21.9%, 9.2%, 37.9%, and 14.7% of the variance in other-directed negative emotion, self-directed negative emotion, hostile behavior, and inhibited behavior, respectively. The remaining unexplained variance was attributable almost entirely to individual differences, with the exception that approximately 20% of the unexplained variance in self-directed negative emotion could be attributed to significant differences between dyads.

Discussion

The goal of this study was to examine whether exposure to relational victimization predicts children's thoughts, emotions, and behavior in a novel, challenging peer context. Moreover, we examined whether the nature of these responses differed according to

the quality of the emerging context. As hypothesized, victimization was associated with maladaptive social-cognitive and self-regulatory responses. These responses were contingent, in part, upon the quality of the dyadic context, particularly with regard to children's self-regulation.

Relational Victimization and Social-Cognitive Responses

We anticipated that exposure to relational victimization would predict maladaptive peer beliefs and social goals, and that these views would be activated most strongly in the context of an aversive peer interaction. Findings revealed that relational victimization and the quality of the emerging dyadic context independently predicted children's peer beliefs. Specifically, both relational victimization and conflictual dyadic quality predicted more negative peer beliefs, whereas positive dyadic quality predicted somewhat less negative peer beliefs. Moreover, a marginal interaction revealed that the contribution of relational victimization to negative peer beliefs varied somewhat according to the quality of the dyadic context; specifically, relational victimization significantly predicted more negative peer beliefs in high-conflict dyads but not in low-conflict dyads. In contrast, social goals seemed impervious to the quality of the dyadic context both alone and in combination with victimization; rather, exposure to relational victimization predicted the pursuit of a high-risk performance goal.

These findings are consistent with the idea that social-cognitive processes serve as carriers of socialization experiences (Crick & Dodge, 1994; Dweck & London, 2004; Rudolph et al., 1995). Specifically, exposure to relational victimization predicted the emergence of maladaptive social-cognitive tendencies during a challenging interaction with an unfamiliar peer, suggesting that children either were prone to these tendencies prior to the experience of victimization or transferred them beyond specific maltreating relationships to a novel social context. In either case—whether social-cognitive tendencies precede or stem from victimization—if these characteristics are carried into new relationships, victimization will more likely generalize across relationships and over time rather than remaining relationship limited.

Relational Victimization and Self-Regulatory Responses

We further hypothesized that exposure to relational victimization would predict emotion and behavior dysregulation, particularly within the context of an aversive peer interaction. Consistent with this prediction, findings revealed that relational victimization and the quality of the emerging dyadic context both independently and interactively predicted children's self-regulatory responses. Specifically, positive dyadic quality predicted less inhibited behavior, whereas conflictual dyadic quality predicted heightened other-directed negative emotion, self-directed negative emotion, and hostile behavior. Exposure to relational victimization predicted more hostile behavior and less inhibited behavior. However, the quality of the dyadic context moderated the link between victimization and self-regulatory responses. That is, relational victimization was linked to more other-directed negative emotion and hostile behavior, and to less inhibited behavior in high-conflict dyads but not in low-conflict dyads.

These findings are consistent with research linking victimization to externalizing emotions and behavior (Camodeca & Goossens,

2005; Crick & Nelson, 2002; Schwartz et al., 2001) but diverge from research linking victimization to inhibited emotions and behavior (Boivin et al., 1995; Camodeca & Goossens, 2005; Crick & Bigbee, 1998; Crick & Nelson, 2002; Olweus, 1978). This pattern may reflect the particular context in which youths were observed in this study. Specifically, the peer interaction was designed to elicit a moderate level of stress. During stressful encounters, children's self-regulatory efforts may be depleted, leading to underregulated emotion and behavior (Dewall, Baumeister, Stillman, & Gailliot, 2007; Muraven & Baumeister, 2000) and, consequently, a decreased likelihood of inhibition. Indeed, victimization was particularly strongly associated with high levels of other-directed negative emotion and hostile behavior and with low levels of inhibition for children embedded in high-conflict dyads, suggesting that these tendencies may be specifically elicited during challenging interactions. In contrast, cooperative contexts may temper these tendencies. Future research needs to identify particular characteristics of victimized children (e.g., temperament, coping styles) and their contexts (e.g., familiar vs. unfamiliar peer environments, competitive vs. collaborative tasks) that determine specific patterns of self-regulation.

Overall, however, this research reveals that exposure to relational victimization is associated with the display of emotion and behavior dysregulation in a novel social context, suggesting that children generalize these tendencies beyond familiar peer groups. It is possible that exposure to victimization interferes with opportunities for learning effective self-regulation strategies that are promoted in the context of healthy peer relationships. Moreover, relational victimization may create a heightened sensitization to peer conflict, thus resulting in an overreaction to stressful interactions. Alternatively, self-regulatory deficits may precede and promote the occurrence of victimization. As with maladaptive social-cognitive processes, if these tendencies are transferred into novel relationships, they may cause the persistence of victimization and associated peer difficulties over time.

Sex Differences

Because theory and research implicate sex differences in children's relational style (for a review, see Rose & Rudolph, 2006) and, to some extent, responses to relational victimization (Crick, Grotpeter, & Bigbee, 2002; Pacquette & Underwood, 1999), we examined possible sex differences in the links between relational victimization and social-cognitive and self-regulatory responses. Consistent with prior research (Erdley et al., 1997), girls were more likely than boys to endorse mastery goals. Moreover, consistent with research showing that girls engage more than do boys within dyadic contexts (Benenson & Heath, 2006), girls were less likely than boys to show inhibited behavior. However, findings did not reveal any significant Sex \times Victimization interactions, suggesting that relational victimization was similarly associated with social-cognitive and self-regulatory responses in girls and boys.

Implications of the Present Research

This research contributes to the understanding of impairments associated with relational victimization that may help to explain the emergence and persistence of peer victimization over time and across contexts (Boulton & Smith, 1994; Kochenderfer-Ladd,

2003; Paul & Cillessen, 2003). Because we examined children's responses during an interaction with an unfamiliar peer, in this study we were able to assess how the correlates of relational victimization potentially contribute to the recapitulation of negative peer experiences in novel social contexts. Specifically, the findings suggest that exposure to relational victimization predicts a tendency toward negative peer beliefs, the pursuit of maladaptive social goals, and self-regulatory deficits in the context of social challenge that would likely interfere with the development of healthy relationships.

Of course, it is possible that these deficits reflect dispositional traits of victimized children (e.g., temperament-based styles) that influenced both their initial exposure to relational victimization and their responses during the interaction. Indeed, research supports a bidirectional partnership between victimization and maladjustment. For example, dysregulated emotions and behavior predict future victimization in both newly emerging (Schwartz et al., 1993) and familiar (Boivin et al., 1995; Hodges & Perry, 1999; Pope & Bierman, 1999; Schwartz et al., 1999) peer groups, but exposure to peer maltreatment also predicts negative belief systems (Caldwell, Rudolph, Troop-Gordon, & Kim, 2004; Schwartz et al., 1998; Troop-Gordon & Ladd, 2005) and dysregulation (Dodge, Lochman, Harnish, Bates, & Pettit, 1997; Hodges, & Perry, 1999). Thus, social-cognitive and self-regulatory deficits may mark children as suitable targets for victimization (Schwartz et al., 1993) and may reflect reactions to peer maltreatment. The persistent display of these deficits may contribute to the development of broader adjustment difficulties—such as anxiety, depression, and aggression—frequently noted in relationally victimized children (Crick et al., 2001). Because we relied on a concurrent design, in the present study we were unable to disentangle these pathways. Future research needs to elucidate the reciprocal influences among relational victimization, social-cognitive and self-regulatory difficulties, and psychological maladjustment.

Despite the likely self-perpetuating nature of these processes, this study does suggest possible ways to interrupt this downward spiral. Maladaptive self-regulatory responses, and to some extent negative peer beliefs, were more salient in the context of high-conflict than low-conflict dyads. Thus, exposure to relational victimization may sensitize children to future challenging interactions. However, if victimized children participate in positive interactions, they may be quite capable of forming positive beliefs and engaging in adaptive self-regulation. Indeed, a task that was designed to elicit collaborative rather than competitive behavior may have fostered a very different profile of social-cognitive and self-regulatory characteristics. Thus, interventions that take advantage of the potential malleability of these characteristics by nurturing positive relationships and encouraging a collaborative rather than competitive perspective on relationships may support the development of more adaptive social-cognitive and self-regulatory processes in victimized children.

Limitations of the Present Research

Several limitations of this study suggest important directions for future research. First, it is important to note that this study focused on children who *perceived* themselves as relationally victimized in their peer relationships. However, not all children with peer relationship difficulties view themselves as victimized (Graham, Bell-

more, & Juvonen, 2003; Graham & Juvonen, 1998). Future research will therefore need to investigate the relative contribution of self-reported versus other-reported or observed victimization to social-cognitive and self-regulatory deficits.

Second, because of our interest in examining whether victimized children generalize maladaptive beliefs and behavior to a novel social context, we used an *in vivo* observational paradigm. Although this approach provided a unique opportunity to track online responses of victimized children, maintaining the ecological validity of the paradigm required a fairly limited measurement of social-cognitive processes. In particular, single-item indexes of performance goals provided only a narrow glimpse into the social goal orientation of these children. Although the observed pattern of intercorrelations established the validity of the high-risk performance goal index, integrating *in vivo* paradigms with more comprehensive survey-based assessments would be useful for elaborating on the promising findings from the present research.

Third, although results generally support the study hypotheses, the ESs are fairly modest. Moreover, the effects of dyadic context on self-regulation tend to be the strongest, perhaps reflecting the shared method variance created by some overlap in the coders. However, the observed interactions between self-reported victimization and observed-reported dyadic quality (in predicting both self-reported negative beliefs and observed-reported dysregulation) suggest that our results cannot be largely accounted for by rater effects.

Conclusions

In this study, we extended past research by considering how exposure to relational victimization is associated with children's thoughts, emotions, and behavior in a challenging peer context. By focusing on situation-specific processes in an unfamiliar relationship, we determined that maladaptive social-cognitive and self-regulatory tendencies that are linked to relational victimization generalize to a novel context. Moreover, several of these tendencies were exacerbated in the context of a high-conflict interaction and tempered in the context of a low-conflict interaction. These findings contribute to theories regarding the emergence and recapitulation of relational victimization, as well as to intervention efforts designed to alter the developmental pathways of children exposed to this type of victimization.

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