J Abnorm Child Psychol (2006) 34:877–889
DOI 10.1007/s10802-006-9061-8

ORIGINAL PAPER

Children's Coping with *In Vivo* Peer Rejection: An Experimental Investigation

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Published online: 17 November 2006

Abstract We examined children's behavioral coping in response to an *in vivo* peer rejection manipulation. Participants ($N = 186$) ranging between 10 and 13 years of age, played a computer game based on the television show *Survivor* and were randomized to either peer rejection (i.e., being voted out of the game) or non-rejection control. During a five-min. post-feedback waiting period children's use of several behavioral coping strategies was assessed. Rejection elicited a marked shift toward more negative affect, but higher levels of perceived social competence attenuated the negative mood shift. Children higher in depressive symptoms were more likely to engage in passive and avoidant coping behavior. Types of coping were largely unaffected by gender and perceived social competence. Implications are discussed.

Keywords Peer rejection · Coping · Depressive symptoms · *In vivo* assessment · Pre-adolescent children

With increasing age, peers assume greater importance in children's lives. By age 11, nearly 50% of children's social activities involve peers (Grusec & Lytton, 1988). Interactions with peers assist in the formation of accurate social perceptions and facilitate cooperative and competitive activities, including play and sports (Hartup, 1983). Moreover, through both direct and vicarious experiences with peers, children acquire important skills in the cognitive, behavioral, and social domains. However, peer interactions are also fraught with significant challenges. In their day-to-day lives children are frequently confronted with a variety of stressful peer encounters, including verbal ridicule/teasing, verbal-physical threat and aggression, perceived unfairness, and being excluded or shunned (Hartup, 1983).

The study of peer rejection has profound importance for understanding children's social development. Rejection by peers invokes strong negative affect, feelings of loneliness, and social anxiety (Asher & Wheeler, 1985; Boivin, Poulin, & Vitaro, 1994). Moreover, peer rejection figures prominently in the development and/or maintenance of several forms of psychopathology, including externalizing behavior problems (e.g., Dodge et al., 2003), social anxiety disorder (e.g., Wells et al., 1995) and depression (e.g., French, Conrad, & Turner, 1995; Panak & Garber, 1992).

During the past decades, research on peer rejection has yielded an increased understanding of its correlates and consequences (see Zakriski, Jacobs, & Coie, 1997 for a review). Persistent peer rejection in early and middle childhood predicts subsequent externalizing behavior problems including truancy, school dropout, involvement with antisocial peers and delinquency (e.g., Coie, Lochman, Terry, & Hyman, 1992; Kuperschmidt & Coie, 1990). Although the mechanisms governing this linkage are still unclear, it has been suggested that children who experience frequent peer rejection are more likely to generate inappropriately aggressive responses to peer rejection events, and are less skilled at enacting competent behavioral responses (Dodge et al., 2003).

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Repeated peer rejection over time also figures prominently in several internalizing emotional disorders, such as depression and social anxiety. In the case of depression, the threat of rejection often leads the depressed individual to engage in excessive reassurance seeking, which has the paradoxical effect of eliciting actual rejection from significant others (Coyne, 1976; Joiner, 1999). Some have postulated a vicious cycle between social rejection and depression (e.g., Coyne, 1976). Consistent with this formulation, Vernberg (1990) found that rejection and depression serve as prospective predictors of each other among young adolescents.

Research on children's coping with peer rejection

Although peer rejection serves as an important domain for investigating how children cope with negative emotion-eliciting events, few studies have examined children's coping with everyday peer rejection experiences. In a notable exception, Sandstrom (2004) found that individual differences in how children deal with common peer rejection experiences and manage the negative emotions they elicit, are linked to psychological adjustment. Specifically, after controlling for the effect of children's sociometric status, greater use of aggressive and ruminative coping strategies was linked to higher levels of internalizing problems including social anxiety and depressive symptoms. Recently, our group (Reijntjes, Stegge, & Meerum Terwogt, 2006) showed that in response to vignette-depicted peer rejection, children scoring higher in depressive symptoms reported a more negative anticipated mood impact and were less inclined to endorse behavioral and cognitive coping strategies typically considered adaptive and/or associated with mood improvement (e.g., behavioral distraction, problem solving activity, and positive reappraisal). Independent of depression, children scoring higher on perceived social competence reported more active, problem-oriented coping behavior in response to the stressors. Types of coping were largely unaffected by gender, but girls reported higher levels of anticipated sadness than boys in response to the rejection vignettes.

In the above-mentioned studies, findings were based on children's anticipated reactions to hypothetical peer rejection events. Several authors have noted the potential pitfalls in assuming that individuals' anticipated reactions to emotion-eliciting events correspond to how they would respond *in vivo* to an actual emotionally engaging situation (e.g., Robinson & Clore, 2002; Underwood, 1997). Anticipated reactions to hypothetical emotion-eliciting events may differ from online coping reactions given that online experienced feeling states are largely governed by the appraisal of current situational conditions, which are episodic, contextual, and experiential in nature; whereas anticipated reactions are based on 'semantic emotion knowledge'; i.e., situation-specific and/or general beliefs about emotions and the reactions these emotions are likely to elicit (Robinson & Clore, 2002).

To date, a small number of studies have examined children's responses to actual peer rejection experiences in real time. In these studies, participants were confronted with peer confederates of similar age providing rejection feedback. For instance, Sandstrom, Cillessen, and Eisenhower (2003) employed a mild social rejection experience (i.e., a peer confederate responded negatively to an invitation to join the participant in a play session) designed to assess children's on line rejection sensitivity. Results showed that, after controlling for the effect of sociometric status, rejection sensitivity was linked with both internalizing and externalizing problems. Using a similar methodology (i.e., a peer confederate declined a request to join the participant in an interview session), Downey and colleagues (Downey, Lebolt, Rincon, & Freitas, 1998) found that children who angrily expected rejection displayed higher levels of distress, relative to their counterparts. Finally, Zakriski and Coie (1996) had participants view other children receiving peer rejection feedback from peer confederates in videotaped interactions and subsequently the participants themselves received similar feedback from these same peer confederates. Results provided evidence to suggest that aggressive-rejected children are less realistic than non-aggressive rejected children in their perceptions of their social status, due to the aggressive-rejected children's inclination to make self-protective errors when processing and judging other children's negative feedback.

Overview of the present study

Although previous research has provided evidence to suggest a relationship between the appraisal of actual rejection experiences and dispositional variables including indices of psychological adjustment, to date no study has examined the linkages between appraisal of the rejection experience (i.e., level of distress), dispositional variables, and coping strategy use. The overarching aim of the present study was to investigate children's behavioral coping when faced with a potent *in vivo* peer rejection experience. In our attempt to examine the effects of peer rejection on children's subsequent use of specific behavioral coping strategies, we devised an experimental peer rejection challenge based on the popular television show Survivor. In brief, participants were led to believe that they, along with five other players (fictitious contestants) were voting on each other's physical and personal attributes with the ultimate aim being to vote each player in or out of the game. Participants were randomized to receive either rejection feedback (voted out by peers on the first round) or non- rejection feedback (survived first round). State mood was assessed at baseline and immediately after receiving feedback.

During a 5 min post-feedback period, several distinct activity choices (i.e., behavioral coping strategies) were made available to the participants, including problem-focused behavior, behavioral distraction, and passive behavior. Our selection of these specific strategies was based on several considerations. Among school-age children, problem focused and distraction strategies rank among the most highly endorsed behavioral coping strategies in response to peer-relevant emotion-eliciting vignettes (e.g., Reijntjes et al., 2006; Sandstrom, 2004). Passive behavior was selected because of our interest in examining the effects of depressive symptoms on coping; hence we wanted to include a strategy that might be more likely endorsed by children high in depressive symptomatology.

Since considerable evidence suggests that children differ greatly in their sensitivity and reactions to rejection (e.g., Dodge et al., 2003; Downey et al., 1998; Reijntjes et al., 2006; Sandstrom et al., 2003), we also sought to examine the potential effects of depressive symptoms, gender, and perceived social competence on children's affective reaction to the manipulation and their subsequent usage of behavioral coping strategies. Level of depressive symptoms was examined as a potential moderator based on data suggesting that children scoring higher on depressive symptoms are vulnerable to heightened emotional distress in response to interpersonal stressors such as peer rejection (Quiggle, Garber, Panak, & Dodge, 1992; Reijntjes et al., 2006). Moreover, in previous work depression was linked to children endorsing more negative, passive, and avoidant coping strategies in response to everyday peer rejection experiences (Reijntjes et al., 2006; Sandstrom, 2004). With regard to gender, previous work has shown that girls report more distress and hurt feelings than boys when faced with peer rebuff (e.g., Crick, 1995; Galen & Underwood, 1997). In addition, Dodge and Feldman (1990) have provided evidence to suggest that girls are more likely than boys to respond passively when faced with peer difficulties. In addition to gender and level of depressive symptoms, we examined the role of perceived social competence. This variable was included given the social-evaluative nature of our stimulus material and evidence suggesting that higher competence in the social domain is positively associated with engagement coping such as active problem-focused efforts (Reijntjes et al., 2006; see Compas, Connor-Smith, Salzman, Harding Thomsen, & Wadsworth, 2001 for a review).

Our investigation was designed to address four specific questions: (a) Is our rejection manipulation in the context of playing the Survivor Game successful in eliciting a worsening of participants' state mood immediately after receiving feedback?; (b) Does level of depressive symptoms, perceived social competence or gender qualify the effects of the peer feedback manipulation on state mood?; (c) What behavioral coping strategies do children employ in response to the rejection manipulation feedback?; and (d) Are the behavioral strategies children use to cope with rejection qualified by level of depressive symptoms, perceived social competence, or gender?

We hypothesized that children would perceive the game to be credible and that exposure to the peer rejection condition would result in a significant worsening of state mood. We also predicted that girls and children higher in depressive symptoms would experience more negative affect in response to peer rejection. We also hypothesized that children with higher scores on depressive symptoms would be more likely to display greater passivity and less active, problem-oriented (approach) behavior. Finally, we predicted that children with higher levels of perceived social competence would be more likely to engage in active problem- oriented engagement (approach) coping.

Method

Participants

Participants were 186 children (92 boys, 94 girls) enrolled in 5th and 6th grade classes from five public elementary schools in Holland, who were predominantly from a middle-class SES background. The participants were predominantly Caucasian (94.5%) and ranged in age from 10 to 13 years ($M = 11.5$, $SD = .73$). For the initial sample of 281 children, classroom teachers sent parent permission letters home with children. Of the 234 letters returned (83%), 186 parents (79.5%) gave their consent for their children to participate in the study, and 48 (20.5%) declined. We also obtained verbal permission to perform the study from the principal of the school and each child's teacher. Children were informed that they could decide not to participate at any time.

Design

Children were matched on age, gender, their scores on the Child Depression Inventory (CDI, Kovacs, 1981), Perceived Social Competence, and randomly assigned to a peer rejection feedback condition or a no rejection control condition. Because of our interest in examining children's responses to rejection, we intentionally randomized more participants to the experimental condition. Specifically, children were matched in groups of five; three were then randomly assigned to the peer rejection condition ($n = 113$) and the other two were assigned to the control condition ($n = 73$).

Procedure

In the first of two sessions, approximately one week apart, participants were administered the CDI (Kovacs, 1981) and the Perceived Social Competence Scale for Children (PCSC,

Harter, 1982) in their regular classrooms during school hours. A research assistant read the directions aloud and children were encouraged to ask for help if they had questions or encountered problems completing the questionnaires. The classroom teacher remained in the room during administration of the measures. At the end of the first session, which lasted approximately 15 min, participants were informed that later that week they would participate in a computer-game entitled "Survivor." They were also told that they would receive a small present after playing (i.e., as compensation for their participation, not for winning the game).

The second session was carried out in a quiet room on the school grounds. Participants were told that their class was selected to take part in a new Internet computer-game called 'SURVIVOR'. In reality, the game was a computer program written in Visual Basic designed to present the illusion of playing an on-line game with five other children.

Survivor game

Upon arrival, the participant was seated in front of a laptop computer equipped with a web-cam for the purpose of taking their photograph. Participants were told that their picture would allow all the children playing the game to see what each of the other players looked like. After receiving instructions from the experimenter, who was present in the same room during the entire session, participants then rated their pre-game state mood by completing the Self-Assessment Manikin (SAM, Lang, Bradley, & Cuthbert, 1999) on paper. Participants were informed that the game might be interrupted temporarily due to technical difficulties. Participants were also told that should an interruption occur, there would be several activities available for them to do while waiting for the technical problem to be corrected (see below). In actuality, the technical difficulties always occurred at the same point during the game (i.e., post-feedback) so as to provide participants the opportunity to engage in one or more designated activity choices (i.e., behavioral coping strategies) during a standard five-min post-feedback period.

At the start of the game, an eye-catching logo of the well-known TV-show appeared on the computer display while the opening bars of the hit 'Survivor' were played. The objective and rules of the game were presented on screen. Participants were informed that they would be playing against five same-sex players of comparable age (other players were actually fictitious) from five different schools in the area, and that the objective of the game was to survive each round and become the only remaining player to have not been voted out by the other players (i.e., 'Survivor Champion'). Participants were encouraged to read the information, which was pre-tested on comprehensibility for children in this age-range, carefully in their own pace and click "continue" to progress to the next screen. Subsequently, participants were directed through a series of screens in which they were asked to enter answers to a series of questions that would give the other players information about them. Participants responded to questions about their favorite musical group, favorite television show, hobbies, future occupation, things they disliked about themselves, how they got along with other children, academic performance, and romantic involvement with children of the opposite sex. Participants were informed on screen that their picture, along with their answers to the personal questions, would be transmitted over the Internet and viewed by the other players who would then make decisions about who they would vote out of the game.

Subsequently, a screen appeared announcing that in a moment pictures and descriptions of each of the five other players would be presented one-at-a-time for careful review. Children were reminded that at a later point they would have to vote one of them out of the game. Upon clicking "continue," the picture of the first fictitious player was displayed together with his or her self-description. The children whose pictures appeared were child actors from two different modeling agencies in Holland. The self-descriptions consisted of the alleged answers to the same questions that the participant had answered earlier. To enhance credibility, actual self-descriptions were taken from those of same-age children participating in another study. It should be noted that participants gave their explicit consent to have this information viewed by other children, provided that the alleged self-description profiles would contain randomly combined personal information from at least three different children. Participants progressed through the game examining each of the five bogus player profiles. After viewing the last profile, the participant was instructed to decide which of the co-players (s)he wished to vote out of the game. In addition, participants were asked to choose from a scroll down list the negative characteristics of the co-player (e.g., the way (s)he looks, (s)he doesn't seem to be a nice person) that influenced their negative decision.

Upon the voting, a message appeared on the screen indicating that the computer was counting the votes of the other players to determine who would be voted out of the game. A 10 sec waiting period followed, and then the name of the player who was voted out appeared on the screen. In the experimental condition the name of the participant was displayed, whereas in the control condition one randomly chosen alleged co-player's name appeared.

Five seconds after receiving feedback (i.e., Time 2), participants were re-administered the SAM on paper. The experimenter emphasized the importance of rating how they felt *right now*. Subsequently, participants responded to game-specific probes from the Survivor Game Reaction Scale (see below). A warning then appeared on the computer screen

indicating that a technical problem had occurred and that there would be an approximate 5-min delay. Participants were reminded of the possible activities available to them during the waiting period. The alternative activities were designed to tap conceptually distinct behavioral coping strategies (see Measures). Time spent (seconds) on each of the activities during the 5 min waiting period was unobtrusively recorded by the experimenter. After the post-feedback waiting period the participant was accompanied to an adjacent room where a female research assistant then debriefed the child thoroughly.

Debriefing

Each child was thoroughly debriefed with the aim of removing any lingering effects of the false rejection feedback while playing the Survivor game. During the debriefing, the child was informed that the other co-players were fictitious and that most of their classmates were voted out in order to see how they would respond to that difficult situation. The credibility of the deception manipulation was also assessed during the debriefing by asking each participant whether they had believed that they were playing against other players. With no exception, participants indicated that they believed that the game was genuine. At the conclusion of the debriefing, participants were urged to observe complete secrecy by not talking with their classmates about the Survivor Game until all the other children had finished playing. To increase adherence to this instruction, children were asked to sign a non-disclosure agreement and were then provided a choice of one of several possible small gifts for playing the game (e.g., a small tape recorder, a gift certificate worth about 3 dollars).

Most participants displayed (marked) relief upon being informed that the rejection experience was bogus. Moreover, most children reported that they understood the purposes of the research, along with the necessity of having been deceived. Most importantly, when asked, none of the participants made mention of any feelings of regret with regard to participation. On the contrary, several children — spontaneously — reported to consider the rejection experience an unnerving, but useful experience. Finally, all participants reported that prior to playing they had not talked with classmates about the Survivor game.

Measures

Self Assessment Manikin (SAM; Lang, Bradley, & Cuthbert, 1999)

The SAM is a state mood assessment instrument consisting of one 9-point Likert scale with cartoon human drawings above the odd number anchors pictorially representing a continuum from smiling/happy to frowning/sad. For instance, the drawing of the person above '1' has a large smile, '3' has a slight smile, '5' has a neutral expression, '7' has a slight frown, and '9' has a pronounced frown. Participants are instructed to look at each of the pictures and circle the number either below or between the pictures reflecting how they currently feel. The valence rating for the SAM has strong test-retest reliability and convergent validity (Lang, Bradley, & Cuthbert, 1999).

Children Depression Inventory (CDI; Kovacs, 1981)

The CDI is a 27-item self-report measure designed to assess the social, behavioral, and affective symptoms of depression in children. Each item consists of three sentences that describe a symptom of depression in increasing degrees of severity. The respondent chooses the sentence that best describes him or her during the past week. Each item set is scored from 0 (symptom absent) to 2 (symptom is present always or most of the time). The CDI has adequate discriminant and convergent validity, test-retest reliability, and internal consistency (Saylor, Finch, Spirito, & Bennett, 1984). Coefficient alpha in the present sample, using a Dutch translation of the instrument (Braet & Timbremont, 2002), was .83. Total scores ranged from 0 to 20 (median is seven; the top quartile (23.9%) obtained a score of 11 or higher). Scores were indicative of a non-clinical sample ($M = 6.66$, $SD = 5.45$), and did not differ as a function of age, gender, or their interaction.

Dutch version of the Perceived Competence Scale for Children (PCSC, Harter, 1982)

The PCSC is a 36-item scale designed to assess children's perceived competence in the following domains: scholastic competence, athletic competence, behavioral conduct, social acceptance, and physical appearance. One subscale assessing general self-esteem is also included. For each item, the child is presented two statements (e.g., 'some children have a lot of friends' versus 'other children don't have many friends') and asked to choose the one that best describes him or her. Subsequently, the participant rates the relevant statement as 'Entirely true of me' or 'Somewhat true of me.' That choice is then rated on a 4-point scale ranging from 1 (lowest perceived competence) to 4 (highest perceived competence). The Dutch version of the PCSC (i.e., CBSK) has adequate internal consistency, test-retest reliability and discriminant validity (Veerman, Straathof, Treffers, van den Bergh, & ten Brink, 1996). Only the social subscale, consisting of 6 items, was used in the current study. Coefficient alpha for this scale was .73.

Social desirability scale

A 17-item scale was developed to assess participants' tendency to respond to test items in a socially desirable fashion. Statements describing impeccable or slightly objectionable behavior (e.g., 'I never lie,' 'I always work hard at school,' 'I don't always obey my parents') were rated using a True/False format. Total scores on this scale ranged from 0 to 15 ($M = 6.65$, $SD = 3.71$), with higher scores indicating a greater tendency to give socially desirable responses. Internal consistency was adequate (Cronbach's alpha = .79). The total score was negatively correlated with the CDI score ($r = -.21$, $p < .01$).

Survivor game reaction scale

A four-item author-constructed Survivor Game Reaction Scale was administered at the post-feedback assessment (Time 2). These items assessed the extent to which participants adopted a predominantly problem-focused, approaching attitude versus a more avoidant, passive, and blunting one. The questions included: (a) "Do you want to know how many players voted you out"?; (b) "Do you want to know the specific reasons for voting you out"?; (c) "Would you like to play the game again"? and (d) "Would you like to change one or more of your answers before playing again"? The first two of these four items were applicable to the rejection feedback condition only, and were thus only assessed among participants receiving rejection feedback. The first two items were rated on the same 5- point Likert scale (definitely yes, probably yes, somewhat yes and somewhat no, mostly not, and definitely not). The other two items were dichotomous (yes vs. no).

Directly observed behavioral coping strategies

During the 5 min waiting period, several behavioral coping strategies were made available to participants. Participants could self-select their activities. Time spent (secs.) on each of the activity choices was unobtrusively recorded by the experimenter. These strategies included: (a) behavioral distraction (reading popular comic books or listening to popular music on a portable CD player); (b) behavioral approach (perusing the contents of folders containing pictures and information ('profiles') on 20 previous Survivor Game contestants, including 10 alleged winners and 10 alleged losers), or (c) a passive response (merely sitting and waiting).

Results

Equivalence of the experimental groups

Means and standard deviations for all Time 1 measures are presented in Table 1. Univariate ANOVA's comparing the two experimental conditions on all Time 1 measures revealed no significant between-group differences on any measure.

Effects of rejection feedback on mood

Means and standard deviations for Time 1 and Time 2 mood indices by condition are presented in Table 2. The immediate mood effects of the rejection feedback were examined using a Condition (rejection vs. non- rejection control) by Time (Baseline vs. Post-Feedback) repeated measures ANOVA analysis. This analysis revealed significant main effects for

Table 1 Baseline measures by condition and gender

	Rejection			Control		
Measure	Girls ($N = 57$)	Boys ($N = 56$)	Total ($N = 113$)	Girls ($N = 37$)	Boys ($N = 36$)	Total ($N = 73$)
Age (months)						
M	137.62	139.54	138.50	136.71	137.88	137.30
SD	10.5	8.6	9.6	7.7	6.6	7.2
CDI						
M	6.04	6.95	6.49	6.43	7.33	6.88
SD	4.71	5.63	5.18	5.86	5.91	5.86
PCSC — Social						
M	17.49	18.38	17.93	18.76	18.03	18.40
SD	3.25	3.41	3.35	4.52	3.70	4.13
Social desirability						
M	7.23	6.84	7.04	7.22	6.00	6.62
SD	3.99	3.59	3.78	3.71	3.32	3.55
SAM						
M	2.00	2.37	2.19	2.00	2.39	2.20
SD	1.13	1.29	1.22	.85	1.13	1.01

Note. CDI: Children Depression Inventory; PCSC: Perceived Competence Scale for Children; SAM: Self Assessment Manikin.

Table 2 State mood at baseline (Time 1) and immediately post feedback (Time 2)

Measure	Rejection			Control		
	Girls ($N = 57$)	Boys ($N = 56$)	Total ($N = 113$)	Girls ($N = 37$)	Boys ($N = 36$)	Total ($N = 73$)
SAM — Time 1						
M	2.00	2.37	2.19*	2.00	2.39	2.20*
SD	1.13	1.29	1.22	0.85	1.13	1.01
SAM — Time 2						
M	3.88	4.14	4.01[c] *	1.46	1.97	1.71 [c] *
SD	1.71	1.91	1.51	0.73	1.00	0.91

Note. c: significant condition effect.

*$p < .05$.

Condition [$F(1, 184) = 43.78$, $p < .001$] and Time [$F(1, 184) = 41.53$, $p < .001$], which were qualified by a significant Condition by Time interaction [$F(1, 184) = 121.97$, $p < .001$]. Subsequent simple effects analyses revealed that participants receiving rejection feedback reported a significant worsening of their mood, $F(1, 112) = 156.67$, $p < .001$. In contrast, participants assigned to the non-rejection feedback control condition reported a modest but significant improvement in mood, $F(1, 72) = 14.01$, $p < .001$. The between group effect size for the SAM was .40. These findings indicate that the experimental manipulation was successful in eliciting an immediate negative mood effect. Repeating these analyses controlling for participants' social desirability scores, by including them as a covariate into the model, did not did alter the significance of participants' reported mood change, suggesting that demand characteristics were not accounting for the observed mood effects.

Factors influencing the immediate effects of feedback condition on state mood

The potential effects of depression, perceived social competence (PSC) and gender on immediate mood impact were examined using the regression approach outlined by Aiken and West (1991). Because of the significant correlation ($r = -.44$, $p < .001$) between our two continuous predictor variables (i.e., CDI and PSC scores), and diagnostics indicating too much multicollinearity in the model when entered simultaneously (i.e., Variance Inflation Factors > 10), separate regression analyses were performed for these two variables. In Step 1 of each analysis, SAM score at Time 2 was regressed on SAM score at Time 1. In Step 2, feedback condition, gender (both dummy coded as 0 or 1), and CDI (centered) were entered. Subsequently, all two-way interactions were entered in Step 3. Finally, the three-way interaction (Condition by Gender by CDI) was entered in Step 4. As recommended by Jaccard and Turrisi (2003), follow-up simple slopes analyses and single degree-of-freedom interaction contrasts were performed to examine the direction and magnitude of significant interaction effects. An identical analytic strategy was used to assess the influence of perceived social competence, with the exception that participants' PSC scores (centered) were entered in place of the CDI-scores.

Change in mood from pre to post-feedback was significantly predicted by feedback condition (see above). However, we observed no main effects for either gender, CDI score, or PSC score. Moreover, neither gender nor level of depression significantly moderated the effects of feedback condition on children's mood change, as evidenced by the non-significant CDI by condition and non-significant gender by condition interactions. However, level of perceived social competence did moderate the relationship between feedback condition and mood change from pre to post-feedback, as evidenced by a significant Condition by Perceived Social Competence interaction [$t(181) = 2.39$, $p < .05$].

Rejection feedback induced significantly levels of emotional distress, but the magnitude of the elicited distress varied as a function of level of perceived social competence. As depicted in Fig. 1, simple slopes analyses revealed that rejection exerted the strongest negative effect at low levels of perceived social competence ($Beta = -1.56$, $t = -11.65$, $p < .001$), a weaker effect at intermediate levels ($Beta = -.64$, $t = -9.92$, $p < .001$), and the weakest effects at high

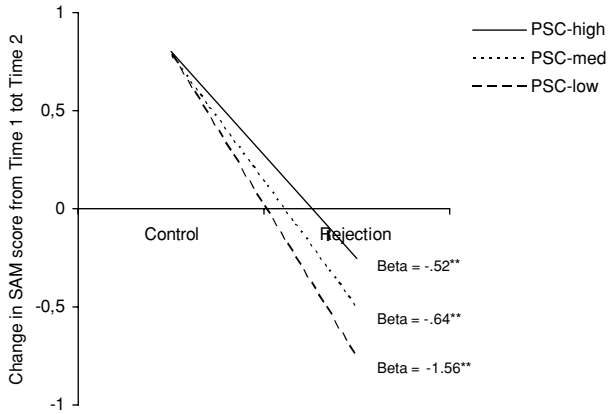

Fig. 1 Simple slope regression lines of mood deterioration as a function of different levels of perceived social competence

Table 3 Behavioral reactions immediately after receiving survivor game feedback

Behavioral reaction probes	Rejection			Control		
	Girls ($N = 55$)	Boys ($N = 56$)	Total ($N = 111$)	Girls ($N = 37$)	Boys ($N = 36$)	Total ($N = 73$)
Desire to play the game again (% yes)	78.2	83.6	80.9	89.2	94.4	91.8
Desire to change answers (% yes)	58.2	63.9	61.0[c]	29.3	31.1	30.1[c]
Desire to know how many children voted you out (1 no -5 yes)						
M	4.67	4.82	4.75	N/A	N/A	N/A
SD	.67	.55	.61			
Desire to know the reasons you were voted out of the game (1 no -5 yes)						
M	4.67	4.76	4.72	N/A	N/A	N/A
SD	.75	.74	.74			

Note. N/A: not applicable because these probes were only administered to participants randomized to the rejection condition.

c: Significant condition effect (alpha $<$ .05).

levels of perceived social competence ($Beta = -.52$, $t = -6.67$, $p < .001$).

Behavioral coping strategies in response to peer feedback

Data pertaining to participants' engagement in behavioral coping strategies are presented in Tables 3 and 4.

Children's immediate behavioral reactions to peer feedback

As can be seen in Table 3, most children in both groups displayed enthusiasm about playing the game again. Although the groups did not differ in their desire to play again, children in the rejection condition were more than twice as likely to report wanting to change their profile if they were to play again [$\chi^2(1) = 14.56$, $p < .001$]. The two other probes included in the Survivor Game Reaction Scale (i.e., 'do you want to know the reasons for the other players to vote you out', and 'do you want to know how many players voted you out') were presented to participants in the rejection condition only. The large majority of those assigned to the rejection feedback condition (82.7 and 83.6%, respectively) responded affirmatively to both probes.

Children's behavior during the post-feedback waiting period

As displayed in Table 4, behavioral distraction was the most frequently used strategy among participants in both conditions. The effects of feedback condition on children's behavioral activity choices during the post-feedback period were examined by performing a MANOVA with condition as the between-subject factor. Results revealed a significant multivariate effect for Condition [$F(2, 179) = 13.03$, $p < .001$] across the three behavioral activity choices. Subsequent univariate follow-up analyses showed differences across the two feedback conditions for two of the three behavioral coping strategies. Specifically, relative to controls, participants receiving rejection feedback spent less time on distracting activities: $F(1, 183) = 24.63$, $p < .001$, and more time looking at the folders of previous Survivor Game contestants, $F(1, 182) = 18.16$, $p < .001$. In addition, rejected participants

Table 4 Observed behavioral activities during the 5-min post-feedback waiting period

Observed behavior	Rejection			Control		
	Girls ($N = 55$)	Boys ($N = 56$)	Total ($N = 111$)	Girls ($N = 37$)	Boys ($N = 36$)	Total ($N = 73$)
Listening to music or reading comic books (Time in sec.)						
M	156.5	200.5	177.3	248.8	280.5	264.3
SD	139.9	126.9	135.0	97.7	55.8	100.9
Viewing Folders (Time in sec.)						
M	98.9	59.9	79.5	25.7	7.6	16.8
SD	127.6	103.7	117.3	70.0	61.6	72.5
Sitting Quietly (i.e., passive response) (Time in sec.)						
M	44.6	39.6	43.2	25.5	11.9	18.9
SD	100.3	94.4	97.0	77.5	52.7	66.3

Note. Numbers in each column add up to 300 s.

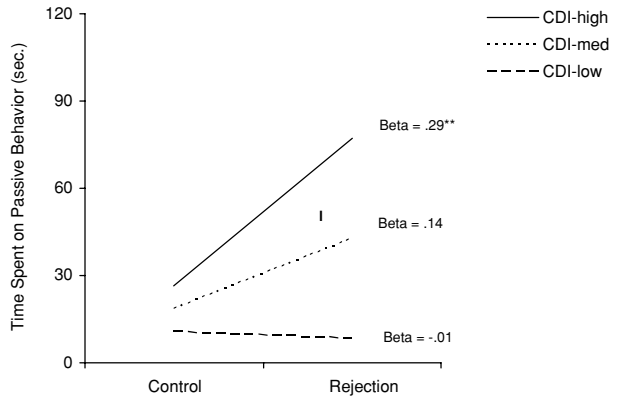

Fig. 3 Simple slope regression lines of time spent on passive behavior as a function of different levels of CDI scores

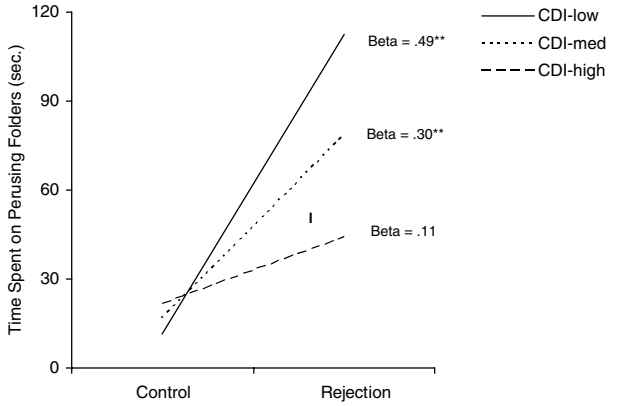

Fig. 2 Simple slope regression lines of time spent looking at folders as a function of different levels of CDI scores

spent more time on passive behavior than controls, but this effect was not significant ($p < .08$).

Factors influencing children's behavioral activities following peer feedback

The potential effects of depression, perceived social competence and gender on time spent on each of the three targeted behavioral activities were examined by performing a series of regression analyses for each of the three behavioral activity choices. In Step 1, feedback conditon, gender (both dummy coded as 0 or 1), and CDI (centered) were regressed on time spent on the targeted behavioral activity choice. The three two-way interactions were entered in Step 2. Finally, the three-way interaction (Condition by Gender by CDI) was entered in Step 3. An identical analytic strategy was used to assess the influence of perceived social competence, with the exception that participants' PSC scores (centered) were entered in place of the CDI-scores.

Our analyses revealed no main or interactive effects for gender or level of perceived social competence for any of the behavioral coping strategies. Moreover, within the rejection group, coping choices were not associated with either gender or PSC. However, level of depression moderated the relationship between Feedback Condition and time spent on passive behavior as evidenced by a significant Condition by CDI interaction [$t\,(180) = 2.14, p < .05$]. As depicted in Fig. 2, simple slopes analyses revealed that rejection feedback yielded the strongest effect on passive behavior at high levels of depressive symptoms ($Beta = .29, t = 2.91, p < .01$), a weaker effect at intermediate levels ($Beta = .14, t = 1.96, p < .06$), and no significant effects at low levels of depressive symptoms ($Beta = -.01, t = -.10, p > .10$).

A similar CDI by Feedback Condition interaction was observed for time spent viewing folders of alleged Survivor Game players [$t\,(180) = -2.82, p < .01$]. As depicted in Fig. 3, simple slopes analyses revealed that rejection feedback yielded the strongest effect on viewing folders at low levels of depressive symptoms ($Beta = .49, t = 5.05, p < .001$), a weaker effect at intermediate levels ($Beta = .30, t = 4.36, p < .001$), and no significant effects at high levels of depressive symptoms ($Beta = .11, t = 1.14, p > .10$).

Factors influencing children's feedback preferences

The approach for examining factors qualifying participants' endorsement of the two game-relevant feedback items (i.e., 'do you want to know the reasons the other players voted you out'; 'do you want to know how many players voted you out'), differed from the analyses described above since these items were only assessed for those in the rejection condition. First, gender, CDI (centered), and the gender by CDI interaction term were regressed simultaneously as independent variables on each of the two target feedback preference probes. A similar analysis was performed substituting PSC score for CDI score.

Results indicated that level of perceived social competence was not associated with either variable. In contrast, our findings yielded a significant relationship for depression, namely children scoring higher on the CDI displayed greater reluctance to be informed of the reasons given by other alleged players for voting the participant out of the game $t\,(108) = -2.21, p < .03$; $Beta = -.21$. This effect was not qualified by gender.

Discussion

The present study sought to advance our knowledge on children's coping with actual peer rejection. Towards this aim, we devised a potent, credible and ecologically sound peer rejection manipulation ('Survivor Game'). To our knowledge, this is the first study to investigate children's coping with an *in vivo* peer rejection challenge in real time.

Moreover, this investigation goes beyond self-report assessment of coping strategy use by direct observations of children's behavioral coping strategies as they occur in real time. The rejection feedback provided to Survivor Game participants was effective in eliciting a substantial immediate worsening of state mood. In contrast, controls who survived the first round reported a weak improvement in mood. The lack of an association between the observed mood changes and participants' scores on a social desirability scale suggest that the mood effects were not simply a function of demand characteristics. Moreover, data collected during the debriefing of study participants indicated that the children perceived the game to be credible and were not aware that the other players were fictitious.

Consistent with the social-evaluative nature of our feedback manipulation, higher levels of perceived social competence attenuated the magnitude of children's negative emotional response to peer rejection. This finding suggests that children who perceive themselves as more efficacious in the social domain feel less threatened by one instance of social exclusion. Examination of the effects of depression on children's immediate mood response to peer rejection failed to support the prediction that children displaying elevated depression would show a more pronounced immediate negative emotional response to the peer rejection manipulation. This finding for depression is at odds with previous work showing that children displaying higher CDI scores reported a more dramatic anticipated mood effect in response to hypothetical peer rejection vignettes (Quiggle, Garber, Panak, & Dodge, 1992; Reijntjes et al., 2006).

What might account for these divergent findings for depressive symptoms across different methodologies? According to numerous authors (e.g., Beck, 1967; Williams, Watts, MacLeod, & Matthews, 1997), depression is characterized by a negative bias in the strategic elaboration of information. Thus, if one is feeling depressed and thinks about an upcoming negative event, information is processed in a more negative way, thereby yielding inflated negative judgments relative to momentary obtained ratings. Consistent with this explanation, Feldman Barrett (1997) observed that among adults high in neuroticism, the reported frequency of experienced negative emotions tended to be higher for retrospective reports, compared to these same reports obtained online; whereas this effect was not observed for those low in neuroticism.

Our examination of children's coping behaviors in response to peer rejection revealed some interesting findings. For instance, when provided with the opportunity to change their answers prior to playing the game again, twice as many children in the rejection condition opted to change their original game profile (i.e., to engage in problem-oriented behavior). In addition, the large majority of children in the rejection condition displayed an apparent willingness to receive game-relevant feedback. Although this strategy may pose some degree of threat, the obtained information may serve to assist the child in altering their presentation in the hopes of preventing exclusion in future social encounters.

Observation of children's behavior during the 5 min post-feedback waiting period provides additional data on children's use of behavioral coping strategies. Not surprisingly, behavioral distraction (e.g., reading comic books) was the most frequently used strategy among participants in both conditions. However, children receiving rejection feedback, relative to controls, spent significantly less time on distracting activities. Moreover, children assigned to the rejection group showed less approach behavior (i.e., perusing folders) during the 5-min post manipulation period.

Our findings with respect to children's coping with rejection converge with studies showing that behavioral distraction is among the most highly endorsed behavioral responses to vignette-depicted peer rejection stressors (e.g., Kochenderfer-Ladd & Skinner, 2002; Reijntjes et al., 2006; Sandstrom, 2004). Surprisingly, we could find no published studies investigating the effects of children's use of behavioral distraction on their subsequent emotional response to the stressor. Investigations with adults provide some evidence that behavioral distraction may help to attenuate the immediate negative emotional response to an emotion-eliciting event. For instance, Morrow and Nolen-Hoeksema (1990) have shown that subjects randomized to a behavioral distraction condition showed significantly less emotional distress in response to an imagery-based mood induction task, relative to those assigned to a no distraction control group.

The results of the present study are also in line with previous work showing concurrent associations between higher levels of depressive symptoms, lower levels of active problem-focused coping and elevated levels of ruminative, avoidant, and passive coping (e.g., Compas, Ey, & Grant, 1993; Ebata & Moos, 1991; Sandstrom, 2004). Specifically, whereas children low in depression spent significantly more time on approach behavior in response to rejection, our data revealed no such effect of rejection for children high in depression. Higher levels of depression were also associated with a greater reluctance to receive feedback from other players on the reasons that led them to reject the participant. One possible effect of avoidance behavior is that it may prevent children from acquiring the necessary mastery information for coping effectively with difficult interpersonal situations.

Consistent with expectations, our data also revealed that children higher in depression were more inclined than their peers to respond to rejection feedback in a more passive fashion. This finding may reflect common symptoms of depression, such as low motivation and reduced interest in activities. In a similar vein, greater passivity reactions among children higher in depression may be indicative of a 'learned helplessness' attitude. Finally, more passive behavior may reflect

reluctance to engage in problem-focused behavior in order to avoid the additional distress and/or ruminative thoughts it might elicit.

Taken together, these findings suggest that children displaying higher levels of depression may be more likely to respond to peer rejection events in ways that may maintain or even intensify their negative mood. As suggested by Gross and Munoz (1995), to the extent that children high in depression are less capable of countering emotional distress by successful coping efforts, their risk of developing clinical depression may be increased (Gross & Munoz, 1995). Moreover, children displaying elevated levels of depression may be at increased risk for further peer rejection and associated maladjustment. Indeed, children responding to commonplace rejection with passivity, avoidance, and/or withdrawal are likely to be evaluated more negatively by peers, and consequently become mired in a pattern of repeated rejection.

Our findings indicating that perceived social competence is not related to children's coping with peer rejection are at odds with findings reported on the role of perceived social competence in engagement coping (see Compas et al., 2001 for a review). One possible explanation of our lack of effect is that the observed buffering effects of higher levels of social competence on initial mood impact may have served to attenuate the effects of social competence on subsequent behavioral coping. Alternatively, the difference in findings may be attributable to differences in methodologies, with most other studies employing temporally remote reports of coping, as opposed to the online approach employed in the present study. Finally, it is possible that the linkage between social competence and engagement coping varies as a function of the specific nature of the stressful event.

Contrary to our expectation, girls did not respond to the rejection feedback with greater self-reported negative affect. Moreover, girls were no more likely than boys to respond passively when faced with peer rejection. These findings differ from previous studies showing that girls report higher levels of negative emotions and more passive behavior in response to temporally remote negative peer experiences (e.g., Crick, 1995; Sandstrom, Cillessen, & Eisenhower, 2003). Different methodologies (i.e., *in vivo* assessment versus vignette assessment) may account for the discrepant findings. In line with this argument, Robinson and Johnson (1997) observed marked gender differences in adults' predictions of their negative emotional reactions to hypothetical vignettes, with women estimating that their emotions would be more intense than men's, whereas similar self-report scores obtained online did not vary by the sex of the participant.

Our findings may have implications for both treatment and preventive interventions. Given the observed linkage between elevated depression and lower levels of problem-focused coping when faced with rejection, interventions targeting at-risk children displaying heightened depression appear warranted. Although speculative, our findings provide some suggestion that interventions designed to promote a more active problem-solving orientation in response to social evaluative situations (e.g., assertiveness training; see Stark & Kendall, 1996) may help inoculate children to the deleterious psychological effects of peer rejection, as well as boost their perceived efficacy to manage social situations more effectively. Moreover, primary prevention programs focusing on educating children about (negative) emotions and their consequences, as well as providing rudimentary cognitive and behavioral skills for handling social evaluative situations may prove useful.

The ecological validity of our peer rejection procedure deserves further comment. We acknowledge that our laboratory rejection manipulation is not identical to the rejection experiences that children in this age range typically encounter in their daily lives. However, exclusion from group activities is a primary exemplar of peer rejection (Bush & Ladd, 2001; Coie, 1990). In addition, especially during the past decade, being rejected while playing a game with unfamiliar peers has become widespread in television shows, and should by now probably be considered part of young adolescents' contemporary daily life.

Several limitations of the present study should be addressed in future work. First, our investigation was limited by our focus on a restricted set of behavioral coping strategies. Although our selection was based on previous work suggesting that these strategies are among the most highly endorsed in response to vignette-depicted rejection, other behavioral strategies such as seeking social support as well as cognitive strategies such as cognitive reappraisal and mental distraction should be included in future work.

Second, our putative moderator variables were limited to depressive symptoms, perceived social competence and gender. Previous work has revealed that children's reported coping with peer rejection is influenced by other individual difference variables, including externalizing problems, peer rejection history, and social standing in the peer group. For instance, Fabes and Eisenberg (1992) observed that popular children were more likely than their rejected counterparts to cope with peer provocation in a non-aggressive, active fashion (as opposed to relying on aggressive or indirect strategies). By extension, our decision to restrict the number of potential moderators may have masked interesting variations in children's coping strategy use as a function of, for instance, social standing in the peer group. Future work is needed to shed light on how these other variables affect children's coping with difficult interpersonal situations.

Finally, note that this investigation represents only a narrow slice of the multifaceted construct of coping with peer rejection. One should not assume that longer term consequences can be extrapolated from findings obtained during a brief 5-min post-rejection follow-up period. However, where

the bulk of previous research has focused on chronic peer rejection (e.g., Zakriski, Jacobs, & Coie, 1997) or how children anticipate coping with hypothetical peer rejection events (e.g., Sandstrom, 2004), the present study provides a lens into coping with a peer rejection experience in real time. Because children's reflective reasoning about their coping responses may not be a reliable predictor of their actual coping behavior in the heat of the moment (Robinson & Clore, 2002), continued research along these lines is likely to yield considerable progress in better understanding children's coping with peer rejection and ways to enhance it.

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