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Entry Behavior and Emotion Regulation Abilities of Developmentally Delayed Boys

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This study investigated the social deficits of developmentally delayed children. Participants were 48 five-year-old to eight-year-old boys. Delayed children (n = 20) were compared with nondelayed children of similar chronological age (CA nondelayed; n = 20) and of similar mental age (n = 8). The behavior and emotion regulation strategies of participants were assessed in an analogue entry situation. Delayed children were just as able as nondelayed children to understand the play themes of others but were more intrusive in delivering their entry attempts. Delayed children appeared to have less effective emotion regulation strategies for coping with entry failure and were more likely to increase their use of disruptive entry strategies over time than CA nondelayed children.

Developmentally delayed children are at risk for difficulties in their peer relations. They spend more time in solitary play, spend less time in group play, and are the least preferred play partners of nondelayed children (Guralnick & Groom, 1985, 1987; Guralnick & Weinhouse, 1984). These difficulties are disturbing because peer relationships aid in the socialization of children and encourage language, cognitive, and moral development (Garvey, 1986; Hartup, 1978, 1983; Piaget, 1932/1965). Evidence also suggests that children who have difficulty in their peer relations are at considerable risk for later problems (Parker & Asher, 1987).

The present study investigated the peer-related social deficits of developmentally delayed children by examining their behavior during a challenging social task: entry into the ongoing play of others. The conceptual framework and hypotheses for this study were based on previous work on the peer interactions and entry behavior of delayed and nondelayed children and on recent theorizing and research on the role of emotion regulation abilities in children's social development.

Entry Behavior of Delayed and Nondelayed Children

Effective entry skills are a prerequisite for further social interaction and are predictive of children's social status (Putallaz, 1983). Although little is currently known about the entry behavior of developmentally delayed children, several studies suggest that they have significant difficulty with entry situations. Guralnick and Groom (1987) found that, unlike nondelayed children, developmentally delayed children showed a decrease over time in the probability of obtaining positive responses to their social bids in group settings. They reasoned that deficits in delayed children's entry skills were a key factor in this pattern. Evidence also exists that delayed children are more disruptive in their entry attempts than are nondelayed children (Kopp, Baker, & Brown, 1992).

Research with nondelayed children indicates that one important task for entering children is determining the "frame of reference" common to group members and establishing themselves as sharing in this play theme (Phillips, Shenker, & Revitz, 1951). For example, an entering child may make a comment or bring over a toy related to the group's play. In general, high-status children are better able than low-status children to determine the group's frame of reference (Dodge, Pettit, McClaskey, & Brown, 1986; Dodge, Schlundt, Schocken, & Delugach, 1983; Putallaz, 1983; Putallaz & Gottman, 1981). Although no previous research has investigated the ability of developmentally delayed children to judge frame of reference, this ability should vary with children's level of cognitive functioning.

Whereas the frame-of-reference hypothesis has been useful for making predictions and studying individual differences in nondelayed children, understanding the social deficits of delayed children may require the examination of more basic skills. These skills include the ability to deliver entry bids in a well-timed and socially appropriate manner and the ability to cope with failure in the entry situation through the use of effective emotion regulation strategies.

The proper timing and delivery of entry attempts is an important and often neglected aspect of children's entry behavior (M. Putallaz, personal communication, March 16, 1995). Dodge et al. (1983) noted that stylistic differences in children's delivery of attempts may relate to their success. It may be that some children are able to generate strategies related to the group's play but deliver their bids in inappropriate ways, such as not waiting for a break in the group's conversation before speaking or failing to wait for some sign of receptiveness before physically joining the play.

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Accomplishing these tasks requires the ability to engage in behavioral inhibition, a skill many developmentally delayed children have difficulty mastering. Kopp, Krakow, and Johnson (1983) found that delayed children with developmental ages of 20 to 40 months were less able than nondelayed children at the same developmental level to resist touching an attractive toy during a waiting task. Another potential entry skill deficit of developmentally delayed children is in the area of emotion regulation abilities.

Emotion and Emotion Regulation in the Entry Setting

Gottman and Katz (1989) defined emotion regulation as the ability to "(a) inhibit inappropriate behavior related to strong negative or positive affect, (b) self-soothe any physiological arousal that the strong affect has induced, (c) refocus attention, and (d) organize themselves for coordinated action in the service of an external goal" (p. 373). Emotion regulation abilities are particularly relevant when considering children's behavior during challenging tasks such as entry.

Corsaro (1979, 1981) and others (Feldman, Christenson, & O'Neal, 1980; Forbes, Katz, Paul, & Lubin, 1982) have noted that children often exhibit wariness and caution when approaching a group, as if they are trying to assess the risk of being rejected. In fact, there is good reason to be cautious in this context because more than 50% of young children's initial entry attempts fail (Corsaro, 1979). When children fail at entry, they often protest and try to persuade others to let them play (Corsaro, 1979, 1981; Forbes et al., 1982). Alternately, some children appear so distressed by their failure that they withdraw from making future attempts. Children's behavioral responses to entry failure suggest that they often experience embarrassment, sadness, frustration, or anger in this context. To succeed at entry, children must have effective strategies for calming any negative affect generated by their initial failures and patiently persist with their attempts.

Despite numerous references to children's emotional responses in the entry setting, the strategies children use for regulating these emotions during entry have not been previously investigated. One strategy associated with the ability to tolerate behavioral delay and calm physiological arousal due to negative affect is gaze aversion (Rothbart & Posner, 1985). Kopp et al. (1983) found that young developmentally delayed children were less likely than nondelayed children to use gaze aversion (e.g., looking away or at the ceiling) to regulate their behavior during a waiting task. The current study examined emotion regulation strategies, such as gaze aversion, in older developmentally delayed children when they experienced entry failure and had to wait to play.

Changes in Children's Behavior After Entry Failure

Because the majority of children's initial entry attempts fail, it would be helpful to know how their bids change across time. If delayed children have few strategies for coping with frustrating events, the process of waiting before play may be especially difficult for them. A disorganization of previous levels of functioning may occur, resulting in withdrawal from further attempts or an increase in disruptive strategies such as aggression. Turning to more disruptive strategies is especially problematic; it not only decreases the probability that children will eventually succeed at entry but also increases the likelihood that they will experience overt rejection from peers.

It may be helpful to conceptualize entry strategies as being associated with different levels of risk for overt rejection. For example, to minimize the possibility of overt rejection from peers, children may communicate their desire to play in some indirect way such as hovering close and watching the group's activity. Dodge et al. (1983) referred to these passive behaviors as low-risk entry strategies. These strategies enable entering children to learn about the group's activity and assess its receptiveness before making more direct and riskier attempts (Corsaro, 1979; Dodge et al., 1983; Forbes et al., 1982; Putallaz & Gottman, 1981). If group members are receptive, they may respond positively to a low-risk bid; if they are not receptive, the attempt will usually be ignored, enabling the entering child to "save face" (Gottman, 1983). At the other end of this continuum of risk are strategies that are highly disruptive to the group's activity. High-risk strategies include statements of disagreement, demands, attempts to take control of others' toys, and physical aggression. These bids communicate a desire to control the group's activity and are usually met with strong opposition (Dodge et al., 1983).

In summary, to successfully enter the ongoing activity of others, children must communicate an understanding of the group's frame of reference and deliver their attempts in a well-timed and nonintrusive manner. Because most initial entry attempts are unsuccessful, children must have strategies for coping with negative affect and having to wait to play. Children with less effective emotion regulation strategies may resort to disruptive entry bids associated with overt rejection from peers.

Major Issues and Hypotheses

The present study attempted to answer four questions. First, the study asked whether the entry deficits of delayed children are global or specific in nature. In other words, do these children have deficits in both the ability to judge frame of reference and the ability to deliver their bids appropriately? It was hypothesized that the ability to understand the group's frame of reference would vary with the child's level of cognitive functioning. Therefore, delayed children should have more difficulty than nondelayed children with this task. Furthermore, on the basis of the work of Kopp et al. (1992), it was hypothesized that delayed children would be more likely than nondelayed children to deliver their bids in an intrusive manner.

The second question concerned the emotion regulation strategies used by developmentally delayed children. On the basis of the work of Kopp et al. (1983), it was hypothesized that delayed children would be less likely than nondelayed children to use gaze aversion after their entry bids had failed.

The third question concerned changes in children's behavior after entry failure. It was hypothesized that delayed children would be more likely than nondelayed children to increase their use of high-risk entry strategies after entry failure.

Finally, this study attempted to examine the entry skill difficulties of delayed children within a developmental framework. A small sample of younger nondelayed children at developmental levels similar to those of the delayed children was included as an additional comparison group to address this issue.

Method

Participants

Forty-nine boys who participated in a larger research project when they were between 4 years 3 months and 5 years 6 months of age were recruited as potential participants for the current project. This previous study investigated the social interactions of boys in 6-person specialized and mainstreamed play groups involving unacquainted Caucasian boys with no major physical or behavioral problems. The study was limited to boys because it was not possible from a practical perspective to add gender as a separate variable, and more boys are identified with developmental delays. Only Caucasian children were selected to avoid possible confounds due to race. Nondelayed children included in this previous project had full-scale IQ scores on the Wechsler Preschool and Primary Scale of Intelligence (Wechsler, 1967) ranging from 90 to 127 (n = 29), whereas developmentally delayed children's IQ scores ranged from 52 to 85 (n = 20). Two children in the delayed group had Down syndrome, and 1 child had undergone a treatment regime for cancer that included radiation and chemotherapy. The remaining children's cognitive delays were of unknown etiology. Recent articles by Guralnick and his colleagues provide additional information about this sample (e.g., Gottman, Guralnick, Wilson, Swanson, & Murray, 1997; Guralnick, Connors, Hammond, Gottman, & Kinnish, 1996).

Approximately 2 weeks before participating in the current study, children were reassessed with the Wechsler Intelligence Scale for Children (third edition; Wechsler, 1991) and the Wechsler Preschool and Primary Scale of Intelligence—Revised (Wechsler, 1989) to determine their current level of cognitive functioning. One child who had been in the nondelayed group in the previous project had a full-scale IQ of 87, and 2 children from the delayed group had full-scale IQs of 90. It was decided to drop the nondelayed child from the current study because his current cognitive functioning was estimated to be within the low-average range, his current developmental status could not be verified by his local school, and his inclusion would have created an overlap between the nondelayed and the delayed groups' full-scale IQ scores. However, the 2 children with scores of 90 were included in the delayed group because their current IQ scores were at the very bottom of the average range and because according to recent (i.e., within 3 months) evaluations completed by their school districts, they were still considered developmentally delayed and were receiving special education services. In addition, their inclusion did not result in any overlap between the IQ scores of the delayed and nondelayed groups. This resulted in a final sample of 48 boys that included 20 developmentally delayed and 20 nondelayed children at approximately the same chronological age (CA nondelayed) as the delayed children. The remaining 8 nondelayed children were younger than the CA nondelayed and delayed children and were included as approximate mental age matches (MA nondelayed) for the delayed sample. Because participants in the present study were recruited from a previous project, only a small number of younger nondelayed children were available.

Estimates of mental age were derived from children's scores on the Wechsler scales. Because the Wechsler scales have not been standardized on children with developmental delays, it is not possible to estimate their average test age from their raw subtest scores (e.g., almost all of the delayed children in the current sample had raw scores below these estimates). As a means of estimating mental age in a way that was consistent across the different groups in the study, children's full-scale IQ scores were multiplied by their chronological age and divided by 100. Although no perfect method exists for estimating the mental age of developmentally delayed children, this method provides a useful basis for comparison purposes (M. Sigman, personal communication, May 29, 1997). Table 1 presents the means, standard deviations, and ranges for the full-scale IQ scores, chronological ages, and mental ages of the delayed, CA nondelayed, and MA nondelayed groups, as well as a subgroup of the delayed children. The latter subgroup was formed to create a better comparison for the MA nondelayed group because the mean mental age of the MA nondelayed group was substantially higher than the mean for the full developmentally delayed group.

Materials

Equipment for the entry setting included three chairs, a rectangular table, and a number of toys. Toys included blocks, toy food, spaceships, a small Mickey Mouse toy dressed as an astronaut, and an electronic robot.

Procedure

Initial contact and home visit. Parents of children who participated in the previous preschool project were recontacted concerning possible involvement. Several weeks before the families came to the laboratory, I visited their homes to acquaint the parents and children with the experimental procedures.

Entry situation. Two nondelayed first-grade boys served as confederates of the experimenter for all of the entry sessions and were unaware of participants' developmental status (delayed, CA nondelayed, or MA nondelayed). The confederates followed a predetermined script that required them to change their play activity every 2 min and ignore the behavior of the entering child for the first 6 min of the entry situation. A similar analogue entry procedure was used by Putallaz (1983). Confederates were instructed to look at each other and their own toys during the entry segments and not at the entering child. This procedure was followed to ensure that the confederates' behavior was the same with each entering child. The behavior of the confederates was monitored through a one-way mirror to ensure that they followed the prescribed procedures.

Participants were introduced briefly to the confederates outside the experimental classroom. They were then taken to an adjacent room to complete a short task while the confederates prepared for the entry session. The entry situation began when the participant was escorted into the playroom where the two confederates were already playing with the toy

Table 1
Means, Standard Deviations, and Ranges for Full-Scale IQ Scores, Chronological Age, and Mental Age

	Chronological age			Mental age			IQ		
Group	*M*	*SD*	Range	*M*	*SD*	Range	*M*	*SD*	Range
Delayed (n = 20)	84.90	8.04	69–101	59.98	13.65	39–86	70.45	13.33	52–90
CA nondelayed (n = 20)	85.40	8.29	73–100	98.89	13.24	67–117	115.80	11.45	92–137
MA nondelayed (n = 8)	70.38	9.29	59–86	74.65	10.66	61–88	106.13	7.18	96–119
Delayed subgroup (n = 8)	88.25	5.85	80–97	72.98	9.77	54–86	82.50	7.92	69–90

Note. CA = matched in terms of chronological age; MA = matched in terms of mental age.

robot. A research assistant reminded the children that they had just met each other outside and asked them to play until she finished some work in an adjoining room. One of the confederates wore a "bug in the ear," a small portable audio receiver manufactured by Farrall Instruments (Model B111), and was cued at the beginning of each of the following segments: (a) play with the robot, (b) play with the robot and spaceships, (c) feed the robot, (d) search for a "missing" pepperoni pizza that the confederates wanted to feed the robot, and (e) acceptance into the confederates' play. The first three segments were 2 min in length. The fourth segment, the pizza search, provided a transition to group acceptance and 6 min of free play. Time spent in the pizza segment was not standardized. All entry segments were monitored through a one-way glass window and were videotaped for later coding.

Measures

Entry strategies. Target children's attempts to enter the play of the two confederates were coded on a continuous basis as they occurred during the first three entry segments just described. An entry attempt was defined as any behavior that communicated a desire to play with the other children. Both direct attempts, such as requests to play, and indirect attempts, such as showing sustained interest in others' play (i.e., watching for at least 30 s), were coded. Entry strategy codes were grouped into categories according to the estimated potential risk of overt rejection associated with their use. Several researchers have used somewhat similar typologies for children's social behaviors (e.g., Dodge et al., 1983; Rubin, Daniels-Beirness, & Bream, 1984). The categories used in the present study were based on the work of previous entry researchers (e.g., Corsaro, 1979, 1981; Dodge et al., 1983, 1986; Putallaz, 1983; Putallaz & Gottman, 1981) and observations of children's naturalistic entry attempts in experimental play groups (Wilson, 1994).

Table 2 presents definitions for entry strategy codes grouped into the following four risk categories. Low-risk entry strategies communicate an interest in another's play in some indirect way (e.g., simply watching the group's activity). Low–moderate-risk strategies are those that indicate a desire to play in a more direct manner but involve little or no disruption of the group's activity, such as moving physically closer to another's play area or imitating the group's activity. Moderate–high-risk strategies redirect the group's attention to the entering child, such as when the child makes statements about his or her own wants or needs. High-risk strategies are highly disruptive to others' play and indicate a desire to control or change their activity.

Frame of reference. The frame-of-reference index assessed children's ability to understand the group's current play theme and use this information in their entry bid. Each entry attempt was rated according to a 3-point scale. A rating of 1 indicated that a child's strategy was clearly unrelated to the group's activity (e.g., making comments about the child's brother or toys at home); a rating of 2 indicated that the child's strategy was related to the group's activity only in a very general way (e.g., watching the group's activity or asking general questions about the group's activity); and a rating of 3 indicated that the child's strategy suggested a clear understanding of the group's activity (e.g., bringing over a related toy or making comments related to the group's play theme). A somewhat similar coding system was used by Putallaz (1983).

Intrusiveness. The intrusiveness measure was developed in an attempt to disentangle children's cognitive understanding of the group's activity from their ability to deliver the entry bid in a well-timed and socially appropriate manner. For example, a well-timed and appropriate delivery involves waiting for a pause in the conversation of others before speaking or waiting for the group to make space rather than crowding in between group members. Children's entry attempts were rated for intrusiveness according to a 3-point scale. A rating of 0 indicated that the child delivered his bid in a nonintrusive manner (e.g., waiting for a pause in the confederates' conversation before making a comment); a rating of 1 indicated that the child's bid was delivered in an intrusive manner that disrupted the play of others but was nonaggressive (e.g., crowding in between others or interrupting their speech to make a bid); and a rating of 2 indicated that the child made an intrusive bid that was also aggressive against the other children (e.g., pushing other children or trying to take others' toys).

Emotion regulation strategies. Emotion regulation strategies were defined as children's immediate behavioral responses to entry failure. The behavior of entering children was observed during the 5 s after the confederates ignored each of their entry bids. Codes documented the

Table 2
Risk Categories and Definitions for Entry Strategy Codes

Risk category and entry strategy code	Definition
Low-risk strategies	
Wait–watch	Stops own activity and watches others' play for at least 30 s
Eye contact	Attempts to make direct eye contact
Smile–laugh	Laughs–smiles appropriately at others' activity
Low-risk to moderate-risk strategies	
Approach	Moves closer to others' play
Join in	Joins others' play without verbal marker
Imitate	Imitates play of others
Agree	Makes statements of agreement
Share	Offers object without being prompted
Moderate-risk to high-risk strategies	
Information	Gives general information to others
Request information	Requests general information from others
Direct request	Asks to play
"Me" statement	Makes self-oriented statement (e.g., "I have one of those at home")
Feeling statement	States feeling–need (e.g., "I want to play with that toy")
High-risk strategies	
Disagree	Disagrees with statement or behavior of others
Demand	Demands that others do something
Take toy	Takes or tries to take others' toy
Aggression	Physically aggressive toward others or others' toys

degree to which children remained engaged in their attempts to gain access to the group versus withdrawal from the group, presumably to distract or soothe themselves. Codes included the following: (a) repeating an entry strategy without modification, (b) using a new or modified strategy, (c) stopping one's own play and monitoring the group's activity, (d) engaging in solitary play, and (e) engaging in gaze aversion (looking away from the confederates' play and not engaging in any other activity). Codes were based on previous research (e.g., Forbes et al., 1982; Kopp et al., 1983; Rothbart & Posner, 1985) and observations of children's responses to entry failure in two different settings, pilot analogue entry sessions and a naturalistic experimental preschool classroom (Wilson, 1994).

Training of coders and reliability of measures. Five coders were trained for approximately 10 weeks in coding entry and emotion regulation behaviors. Coders began coding independently when interrater reliabilities were above 80%. Interrater reliability estimates were completed for 20% of the entry episodes. Average interrater reliability for the identification of entry episodes was 90% (percentage agreement). Average reliability coefficients (Cohen's kappas) were .84 for entry strategies, .80 for intrusiveness, .73 for frame of reference, and .75 for emotion regulation strategies. Discrepancies in the identification of episodes and coding were resolved through review and discussion.

Results

Analysis of variance (ANOVA) and multivariate analysis of variance (MANOVA) were used to analyze these data. Alpha levels for ANOVAs were set at .05 for hypothesized differences and .006 (Bonferroni correction) when analyses were of a more exploratory nature. When significant multivariate effects ($\alpha = .05$) were found, univariate analyses of individual dependent variables were subsequently conducted.

Frequency of Entry Bids

Table 3 contains the mean frequencies, standard deviations, and ranges for entry bids made by the delayed, CA nondelayed, and MA nondelayed groups and the delayed subgroup during the first three entry segments. A series of ANOVAs ($\alpha = .006$), conducted to examine group differences in the overall frequency of entry bids in the three entry segments, revealed no significant differences.

Table 3
Means and Standard Deviations for Frequency of Entry Attempts and Total Attempts

	Entry segment			
Group	1	2	3	Total
Delayed ($n = 20$)				
M	3.79	3.45	2.55	9.79
SD	2.70	3.44	2.61	7.46
CA nondelayed ($n = 20$)				
M	4.30	3.80	2.95	11.05
SD	3.60	2.95	2.31	7.19
MA nondelayed ($n = 7$)				
M	2.63	1.36	1.67	5.63
SD	2.56	1.41	1.87	5.61
Delayed subgroup ($n = 8$)				
M	3.11	3.44	1.67	8.22
SD	2.71	4.10	2.18	8.09

Note. CA = matched in terms of chronological age; MA = matched in terms of mental age.

The delayed and nondelayed groups engaged in approximately the same number of entry bids during entry sessions. Proportions were calculated (e.g., total number of high-risk strategies over the total number of entry attempts) before group differences in the use of different entry and emotion regulation strategies were examined. This was done in an attempt to control for individual differences in the frequency of children's entry bids. Arcsine transformations were applied to all proportional data. The frame-of-reference and intrusiveness measures compared children's average scores on these measures across the entry segments. Comparisons of developmentally delayed and CA nondelayed children's entry behaviors are presented first, followed by comparisons between the MA nondelayed group and the delayed subgroup.

Comparisons of Delayed and CA Nondelayed Children

Frame of reference. An ANOVA was conducted to evaluate the hypothesis that delayed children would be less able than CA nondelayed children to understand the group's frame of reference. No significant difference was identified. Delayed children were just as able as nondelayed children to understand the group's frame of reference (delayed, $M = 1.80$, $SD = 0.88$; CA nondelayed, $M = 1.96$, $SD = 0.25$).

Intrusiveness. An ANOVA was conducted to test the hypothesis that delayed children would be more intrusive in the delivery of their entry bids. A significant difference did occur for the intrusiveness measure, $F(1, 38) = 5.50$, $p = .025$. Delayed children were more intrusive during their entry bids than nondelayed children (delayed, $M = 0.44$, $SD = 0.40$; CA nondelayed, $M = 0.20$, $SD = 0.22$).

Emotion regulation strategies. Mean proportions and standard deviations for children's use of different emotion regulation strategies are presented in Table 4. A 2 (status) × 5 (emotion regulation strategy) MANOVA was conducted. The main effect of status was significant, $F(5, 34) = 4.34$, $p = .004$. Univariate analyses indicated a significant difference for gaze aversion, $F(1, 38) = 7.15$, $p = .01$. Delayed children were less likely to avert their gaze away from the play area than CA nondelayed children after entry failure. Delayed children were also less likely to use a new or modified entry strategy after their attempts had been ignored, $F(1, 38) = 5.84$, $p = .02$. There was a trend for delayed children to turn to solitary play more often than CA nondelayed children after entry failure, $F(1, 38) = 2.81$, $p = .10$. There were no other significant group differences for emotion regulation strategies.

Changes in the use of low-risk and high-risk strategies over time. Before an analysis of changes over time in children's use of low-risk and high-risk entry strategies, overall group differences in the use of strategies from the four risk categories were examined. Table 5 presents the means and standard deviations for the arcsine-transformed proportions of entry bids in each of these categories. A series of ANOVAs ($\alpha = .006$) revealed no group differences in the use of low-risk, low–moderate-risk, moderate–high-risk, or high-risk strategies.

Table 6 presents means and standard deviations for the arcsine-transformed proportions of low-risk and high-risk entry strategies used in each of the three entry segments. A 2 (status) × 3 (time) repeated measures MANOVA was used to investigate changes in children's use of low-risk strategies over time. A significant interaction occurred between time and status (Wilks's lambda criteri-

Table 4
Group Means and Standard Deviations for Proportion of Each Emotion Regulation Strategy Over Total Strategies Used

	Group	
Strategy	Delayed	CA nondelayed
Repeat strategy		
M	.25	.22
SD	.32	.21
Change strategy		
M	.03	.09*
SD	.06	.11
Stop–monitor		
M	.51	.36
SD	.47	.20
Solitary play		
M	.29	.12†
SD	.39	.18
Gaze aversion		
M	.08	.22**
SD	.16	.17

Note. CA = matched in terms of chronological age.
†$p < .10$. *$p < .05$. **$p < .01$.

on), $F(2, 37) = 3.15$, $p = .054$. Univariate analyses indicated a significant time main effect for differences between the first and second entry segments, $F(1, 38) = 4.81$, $p = .034$. A significant interaction between status and time occurred for differences between the second and third segments, $F(1, 38) = 5.72$, $p = .022$. Delayed children increased in their use of low-risk strategies, whereas CA nondelayed children continued to decrease their use of low-risk strategies after the second segment. No other significant results were identified for changes in low-risk strategies.

A 2 (status) × 3 (time) MANOVA was used to test the hypothesis that developmentally delayed children would be more likely than CA nondelayed children to increase their use of high-risk strategies over time. A significant main effect was found for time (Wilks's lambda criterion), $F(2, 37) = 6.23$, $p = .005$. Univariate analyses indicated a significant main effect for differences between the first and second entry segments, $F(1, 38) = 7.16$, $p = .011$. An interaction between status and time also approached significance, $F(1, 38) = 3.29$, $p = .078$. Whereas both groups increased in their use of high-risk strategies between the first and second segments, delayed children were somewhat more likely than CA nondelayed children to show this increase. Neither group changed significantly from the second to the third segment.

Comparisons Between Delayed and Nondelayed Children of Similar Mental Age

This study also attempted to place developmentally delayed children's entry skill difficulties within a developmental framework. Comparisons were made between a subset of the delayed children and a small group of younger nondelayed children of similar mental age ($n = 8$ per group). Unfortunately, data available for these analyses were limited further by the loss of approximately 50% of 1 MA nondelayed participant's entry session data as a result of video-operator error. The remaining data from this child's session were used to calculate his average intrusiveness and frame-of-reference levels. However, no reliable estimates could be made of the frequency and type of entry or emotion regulation strategies made by this child. Power analyses indicated that the probability of detecting even large group differences with such a small sample was quite low (.50; Cohen, 1992). Nevertheless, it was hoped that these analyses would provide some initial insight into the role developmental factors play in delayed children's entry difficulties. Analyses were restricted to variables found to differ significantly between the delayed and CA nondelayed groups.

An ANOVA ($\alpha = .006$) was conducted to investigate whether MA nondelayed and delayed children differed in terms of intrusiveness. There was a trend for MA nondelayed children to be less intrusive in the delivery of entry attempts than delayed children, $F(1, 15) = 3.70$, $p = .075$ (delayed, $M = 0.49$, $SD = 0.46$; MA nondelayed, $M = 0.15$, $SD = 0.21$). A 2 (status) × 3 (gaze aversion vs. change strategy vs. solitary play) MANOVA was conducted to examine differences in emotion regulation strategies. A significant multivariate effect was found for status (Wilks's lambda criterion), $F(3, 11) = 4.06$, $p = .037$. Univariate analyses revealed no significant group differences, but there was a trend for MA nondelayed children to use gaze aversion more often after entry failure than delayed children, $F(1, 13) = 3.53$, $p = .08$ (MA nondelayed, $M = 0.39$, $SD = 0.56$; delayed, $M = 0.02$, $SD = 0.04$). There was also a trend for MA nondelayed children to change strategies after entry failure more than delayed children, $F(1, 13) = 3.36$, $p = .09$ (delayed, $M = 0.02$, $SD = 0.05$; MA nondelayed, $M = 0.13$, $SD = 0.16$). The MA nondelayed and delayed groups did not differ in their use of solitary play after entry failure (delayed, $M = 0.27$, $SD = 0.54$; MA nondelayed, $M = 0.26$, $SD = 0.26$). There were no significant changes in either group's use of high-risk strategies across the three entry segments.

Discussion and Conclusion

This study investigated children's responses to an analogue entry situation in which they experienced repeated failure. Contrary to expectations, developmentally delayed children were just as competent as CA nondelayed children in judging the group's

Table 5
Means and Standard Deviations for Proportion of Entry Bids in Each Risk Category to Total Entry Attempts Across Entry Segments

	Group	
Risk category	Delayed	CA nondelayed
Low		
M	.43	.37
SD	.53	.42
Low–moderate		
M	.36	.51
SD	.29	.27
Moderate–high		
M	.24	.22
SD	.27	.24
High		
M	.19	.07
SD	.24	.13

Note. CA = matched in terms of chronological age.

Table 6
Means and Standard Deviations for Proportion of Low-Risk and High-Risk Entry Bids to Total Entry Attempts in Each Entry Segment

Group	Entry segment 1	2	3
Delayed (n = 20)			
Low risk			
M	.56	.23	.51
SD	.66	.48	.73
High risk			
M	.02	.29	.26
SD	.10	.49	.49
CA nondelayed (n = 20)			
Low risk			
M	.50	.40	.20
SD	.65	.56	.38
High risk			
M	.02	.07	.13
SD	.08	.13	.35

Note. CA = matched in terms of chronological age.

frame of reference but were more intrusive in the delivery of their attempts. The intrusiveness measure separated the content of entry attempts from the style of delivery. This distinction appears to be particularly important for understanding the entry skill difficulties of developmentally delayed children. These children had difficulty waiting for breaks in the conversations of others and judging how and when to physically enter their play. This intrusive style may be related to their low social status with peers. It should be noted that the simplicity of the confederates' play themes in the analogue situation may have assisted delayed children in their understanding of the group's frame of reference. Group differences in this skill may be found in more naturalistic settings where play themes tend to be more complex and dynamic.

Concerning developmentally delayed children's use of emotion regulation strategies, the results support the hypothesis that they are less likely to use gaze aversion after entry failure. These results extend the work of Kopp et al. (1983) to older delayed children. Gaze aversion is associated with reductions in physiological arousal and the ability to engage in behavioral inhibition. Although developmentally delayed children showed low rates of gaze aversion, they did show a preference for turning to solitary play. Solitary play may enable these children to reduce the physiological arousal associated with frustrating social situations. On the other hand, a reliance on strategies such as solitary play could increase the social isolation of these children. They may become engrossed in object play and miss subsequent opportunities to interact with peers. Thompson and Calkins (1996) suggested that emotion regulation strategies can at times be a "double-edged sword" for at-risk populations. The very strategies these children choose to buffer themselves from stressors may also leave them vulnerable to other risks, especially in the context of challenging social settings.

Delayed children were also less likely than CA nondelayed peers to attempt a new or modified entry bid immediately after experiencing entry failure. It is interesting to note that they were just as likely as CA nondelayed children to simply repeat a previously used strategy. Each of these approaches may prove adaptive in certain situations. For example, repeating a strategy may be adaptive if others fail to respond because they were unaware of the previous attempt. Trying a new strategy, on the other hand, would be more adaptive if the group fails to respond for some other reason, such as a concern that the entering person does not understand the group's play. Adapting to the demands of the current situation (i.e., flexible strategy use) should aid children in succeeding in this and other social tasks (e.g., see Sternberg, 1997).

With regard to changes in the use of low-risk and high-risk entry strategies over time, delayed and CA nondelayed children showed very different patterns. It was proposed that entry failure would be a frustrating experience and that children with less effective emotion regulation strategies would find this most disturbing. Although delayed and nondelayed children's initial rates of using high-risk strategies were similar, delayed children showed a sharper increase in these strategies during the second segment. Shifting to riskier strategies could have a number of negative consequences for delayed children. These strategies are associated with high rates of overt rejection from peers and may also cause peers and teachers to evaluate the children more negatively (Dodge et al., 1983; Sroufe, Schork, Motti, Lawroski, & LaFreniere, 1984). With regard to changes in low-risk strategies over time, nondelayed children steadily decreased their use of these passive strategies, whereas delayed children showed a more complex pattern. They initially decreased and then increased their use of these strategies across the three segments.

In general, the delayed child's pattern of low-risk and high-risk entry strategy use appears more temporally reactive or erratic than that of nondelayed children. Gottman et al. (1997) recently identified a similar "staccato" pattern for delayed children's positive and negative affective behavior in naturalistic group settings. Rapid and extreme changes in behavior could lead peers to see the delayed child's behavior as exaggerated and unpredictable.

Developmentally Delayed Children's Entry Skill Difficulties: A Developmental Framework

Comparisons of delayed and MA nondelayed children's entry behaviors suggest that a number of the entry skill difficulties of delayed children are not simply the result of their developmental level. In contrast to developmentally delayed children, younger nondelayed children already seemed to possess many of the skills needed to succeed in this important social task. They appeared better able to deliver their attempts in a nonintrusive manner and seemed to have more effective emotion regulation strategies.

One interesting similarity between the delayed and younger nondelayed children was their preference for turning to solitary play after entry failure. Informal comparisons between the younger and older nondelayed groups suggest that as nondelayed children develop, they are less likely to turn to solitary play after entry failure. The developmental pattern of delayed children is less clear. An additional comparison group of younger or older delayed children would have helped to clarify whether or not they tend to persist in this behavior pattern.

Finally, some methodological limitations of this study should be noted. Findings related to developmental patterns in children's entry skills should be considered preliminary given the small

number of MA nondelayed children available for these analyses. In addition, practical limitations necessitated restricting the current study to boys. Some gender differences in entry behavior have been identified (e.g., Putallaz & Wasserman, 1989). Research by Saarni (1984) also suggests that gender differences may exist in the use of emotion regulation strategies in the entry context. For example, although Forbes et al. (1982) did not study emotion regulation strategies per se, they did examine "midgame moves" (i.e., behavioral responses to feedback about entry bids). Boys were more likely than girls to simply "ignore and proceed" with their entry behavior after negative feedback.

In summary, the results of this study suggest that the primary entry skill deficit of developmentally delayed children is not their ability to understand the group's frame of reference but their intrusive style of delivering bids. Delayed children also had less effective strategies for dealing with their emotional responses after entry failure and were more likely to show a sharp increase in their use of inappropriate entry strategies over time. Furthermore, analyses comparing the entry behaviors of delayed and nondelayed children of similar mental age suggest that a number of these difficulties are not simply the result of delayed children's developmental level.

Future Research

Future research in this area needs to follow two general lines, one basic and the other more applied. Additional research is needed to further clarify the nature of delayed children's difficulties with peers and the role emotion regulation skills play in these difficulties. Future studies should examine children's skills in other social tasks (e.g., conflict resolution) and in more naturalistic settings. Researchers also need to investigate individual differences in processes that support the development of emotion regulation abilities, such as attention (e.g., see Eisenberg et al., 1995; Rothbart & Posner, 1985; Wilson & Gottman, 1996) and physiological functioning (e.g., see Fox, 1989; Porges, 1992). Understanding the relationship between these processes and emotion regulation behaviors may help clarify how these skills develop in children with and without developmental delays.

A second line of future research involves the applied relevance of this work. Interventions targeting the entry-related deficits of delayed children should be developed. Results from the current study indicate that these children need assistance in learning how to deliver their entry bids in a more appropriate and well-timed manner and in developing more effective strategies for coping with entry failure.

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