

RESEARCH ARTICLES

Mother–Child Coregulation During Delay of Gratification at 30 Months

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Fifty-eight 30-month-old children and their mothers were observed during a task in which the child was asked to refrain from touching an attractive toy. Child and maternal regulatory strategies were independently coded in 5-sec intervals. Consistent with past research, the ability to refrain from touching the toy was associated with less time orienting to the forbidden object and more time focusing on other stimuli. Mothers of children who refrained from touching the toy were more likely to use distraction as a technique to assist in their children's regulation than were mothers of touchers, whereas mothers of children who transgressed used more nondistracting strategies than did mothers of nontouchers. Analysis of contingent behaviors suggested that mothers and children effectively coregulated behavior during this challenging situation, as children and mothers followed one another's lead in the allocation of attention away from the toy. These findings indicate the benefits of proactive, rather than reactive, parental strategies for assisting child delay of gratification.

The development of behavioral control is characterized by competing demands of internal desires and external constraints. From infancy through adolescence, a primary goal of socialization is to foster the ability to delay immediate gratification to gain future rewards and social approval. The suppression of prohibited impulses is critical for the well-being of societies and thus is a vital feature of culturally acceptable conduct. Relations have been uncovered among the inability to delay gratification, low peer sociometric ratings, delinquency, inadequate impulse control, tendencies to respond to social problem situations with aggression, and insufficient use of social cues (Gronau & Waas, 1997; Mischel, 1961; Olson, 1989; Silverman & Ragusa, 1992). Further, a lack of self-control is a central criteria for a wide range of behavior disorders in both children and adults (Krueger, Caspi, Moffitt, White, & Stouthamer-Loeber, 1997). Particularly noteworthy are the results of Mischel, Shoda, and Peake (1988), who found an inability to delay gratification, measured at preschool age, to be predictive of poor academic, social, and coping skills assessed a decade later.

The ability to wait for a reward increases throughout childhood, presumably due to the development of regulatory strategies involving the allocation of attention to sources other than the prohibited item. For example, by 8 years of age, nearly all children recognize the value of focusing on other stimuli as a strategy to facilitate waiting, whereas fewer than 40% of 4-year-olds will verbally acknowledge an awareness of distraction as a tool to aid delay (Mischel & Mischel, 1983; Yates, Yates, & Beasley, 1987). Work by Johnson and Kopp (1981), however, indicated at least a rudimentary understanding of the usefulness of distraction in toddlers, as 24-month-old, but not 18-month-old, children in a delay task directed a majority of their behaviors away from a forbidden item. Since this time, other studies have confirmed the finding that delay ability in preschool-age children is associated with attentional focus on stimuli other than the forbidden item (Cournoyer & Trudel, 1991; Vaughn, Kopp, Krakow, Johnson, & Schwartz, 1986).

Attentional processes have long been regarded as crucial to the ability to delay gratification. Over a century ago, James (1890) considered attention to be central to self-control, and a number of studies have documented the effectiveness of providing distraction during delay of gratification tasks to facilitate waiting (e.g., Miller & Karniol, 1976; Mischel, 1974; Mischel & Ebbesen, 1970). Despite research documenting the importance of distraction as a valuable tool in the exercise of self-restraint, it appears that many parents do not explicitly recognize the significance of distraction as an aid to self-regulation. Hom and Knight (1996) asked mothers of 4- to 6-year-old children to predict the length of time that their children would be able to wait to receive a food incentive, given attentional strategies of tasting the treat, thinking about the food, or distracting themselves. Surprisingly, distraction as a strategy received the lowest ranking among these three options and was not considered significantly more effective by parents than a control condition in which no attentional technique was suggested to the child.

Although the use of distraction has been labeled an “elementary self-regulatory strategy” (Yates et al., 1987), no studies to date have specifically focused on processes by which this ability is promoted and enhanced by parents. This is surprising, as Luria (1961) emphasized the importance of social exchange with familiar partners for the development of self-control nearly 40 years ago. A handful of studies have examined relations between delay ability in young children and parenting attitudes and behaviors measured independently. Children who are able to keep from touching an off-limits toy in the laboratory tend to have mothers who are less directive during compliance and free-play tasks and who offer high amounts of positive feedback (Silverman & Ippolito, 1995; Silverman & Ragusa, 1990). Mothers of children who are not able to delay gratification express parenting attitudes characterized by high levels of strictness and aggravation and low scores on scales measuring nurturance and encouragement of independence (Reitman & Gross, 1997; Silverman & Ragusa, 1990). The authors interpret their results as suggesting that parents who are overcontrolling of their children’s behavior do not allow the children to gain experience in regulating their own emotions and behavior. In contrast, parents who encourage their offspring to work through problems themselves and reward successful emotion regulation foster the self-regulatory capabilities of their children (see also Stifter, Spinrad, & Braungart-Reiker, 1999). These interpretations mirror that of a sizable literature (e.g., Crockenberg & Litman, 1990; Holden & West, 1989; Kuczynski, 1984; Schaffer & Crook, 1980) demonstrating associations between high levels of maternal power and control and the inability of children to appropriately regulate their affect and behavior. Silverman and Ragusa (1990) did acknowledge, however, that the frequent use of power-assertive control strategies may be a consequence of children’s misbehavior rather than a contributor. This contention is supported by Campbell, Pierce, March, and Ewing (1991), who found child noncompliance during a clean-up task to be a powerful elicitor of maternal negative control.

The few studies that have focused on parenting and delay ability have relied on correlational analysis rather than examining dyadic interaction in contexts in which demands for self-regulation are placed on the child. Typical delay-of-gratification paradigms (e.g., Mischel & Ebbesen, 1970; Silverman & Ragusa, 1990; Vaughn, Kopp, & Krakow, 1984) focus on self-regulation by asking children to refrain from touching a desired object with no assistance from their caregiver. These studies, therefore, provide little information regarding how caregivers shape their child’s behavior. To address this shortcoming, this inquiry altered the delay of gratification paradigm slightly to allow mothers to assist their children in their efforts to delay gratification.

Only a single age point was examined in this article, because its overarching purpose was not to explore potential precursors or antecedents of the ability to delay gratification, but rather to provide a detailed portrayal of the dynamic processes underlying the early development of self-control. The age point chosen, 30 months, is particularly well suited for examining parent-child coregulation of behavioral

control. Although some infants are able to voluntarily control their behavior in response to a parental request by the end of the first year, most theorists agree that the ability to regulate behavior in the absence of an external enforcing agent does not emerge until after 3 years (Vaughn et al., 1984). Thus, at the midpoint of the third year, toddlers still rely on caregivers to help guide their delay of gratification.

The first goal of this study was to examine the regulatory strategies of toddlers and their mothers during a delay task. Based on past work (i.e., Cournoyer & Trudel, 1991; Mischel, 1974; Vaughn et al., 1986), it was expected that children who were able to forego touching the forbidden object would spend a majority of their time during the delay situation focused on other stimuli, whereas children who were not able to delay would spend relatively greater amounts of time looking at the toy that is off-limits. In addition, we predicted that mothers of successful delayers would perform more distracting behaviors and use fewer nondistracting strategies than mothers of toddlers who touched the toy. A second goal of this inquiry was to investigate the direction of influence between mothers and children in this challenging context. By analyzing the patterning of interactions in child–parent dyads, it was hoped that a clearer picture might emerge of the roles played by caregivers and their children in the exercise of self-control. It was expected that parents would be most likely to use both distracting and nondistracting techniques at times when the child was focusing on the prohibited toy. It was also predicted that children, particularly those who successfully delay gratification, would respond to their parent’s distraction attempts by shifting their attention away from the off-limits toy and toward other stimuli. Finally, it was hypothesized that nondistracting maternal strategies would be primarily enacted in response to, rather than preceding, child transgressions.

METHOD

Participants

Fifty-eight 30-month-old children (age range = 29–31 months; 30 boys) and their mothers participated in this investigation. Participants were recruited from the newborn nursery within 3 days following birth for involvement in a larger longitudinal study investigating emotion regulation in early infancy and toddlerhood.¹

¹The sample used in this study was originally recruited for a longitudinal investigation of physiological and behavioral aspects of emotion regulation. Previous reports examining this sample during earlier age periods can be found in Braungart-Rieker and Stifter (1996), Fish, Stifter, and Belsky (1991), Fish and Stifter (1993), Fish, Stifter, and Belsky (1993), Stifter and Grant (1993), Stifter and Braungart (1992), and Stifter and Jain (1996). Two articles have been written concerning the 30-month data (Braungart-Rieker, Garwood, & Stifter, 1997; Stifter et al., 1999), but neither of these investigated maternal direction of attention or child regulatory strategies.

Families were primarily White (1 African American, 1 Asian) and 86% were married and living with the child's father. Mothers had a mean age of 29 (range = 16–37 years) and an average of 14.7 years of education (range = 10–19 years). One additional mother-child dyad was recruited but was not filmed during the entire delay procedure due to equipment failure and their data were omitted from analysis.

Procedures

Preschoolers and their mothers were videotaped participating in a variety of assessment procedures during laboratory visits (see Braungart-Rieker et al., 1997). This investigation focused on a delay of gratification procedure. Prior to the task, the 30-month-old was seated in a high chair pulled up to a small table, and the experimenter removed all other toys from the child. The mother was seated in a chair beside her toddler and instructed to respond to her child as she normally would. The experimenter presented an attractive toy to the child (a wind-up kangaroo that flips), demonstrated how it worked, and highlighted its attractive features to ensure the toy was tempting to the child. Following the demonstration, the experimenter placed the toy within the child's reach and stated firmly, "I'm going to leave for 1 min. Don't touch the toy until I come back," and then left the room for 60 sec. The child was permitted to play with the toy following the 60-sec delay task.

Measures

Child and mother behaviors during the delay of gratification task were videotaped and subsequently coded in 5-sec intervals across the 60-sec task. Child and mother variables were coded independently. Coders of child behaviors were blind to the coding of mother behaviors, and vice versa.

Mother Variables

Maternal behaviors assessed were based on categories applied by previous researchers to maternal efforts to control child behavior (i.e., Calkins & Johnson, 1998; Campbell et al., 1991; Kuczynski, Kochanska, Radke-Yarrow, & Girmius-Brown, 1987). For each 5-sec interval, coders recorded the presence or absence of each of the following six categories of maternal behavior: distraction, reasoning, bargaining, indirect commands, direct commands, and physical restraints. Only three mothers used physical restraint, and thus this code was dropped.

TABLE 1
 Descriptions, Examples, and Frequencies of Mother Behavior Categories

<i>Strategy</i>	<i>Definition</i>	<i>Example</i>	<i>Number of Mothers Using</i>
Distractions	Attempts to direct the child's attention to stimuli other than the prohibited toy	"Look at the picture on the wall."	38
Reasoning	Explanations for compliance based on norms, values, or consequences	"The lady said not to touch it."	36
Bargaining	Attempts to negotiate with the child based on the child's needs and wants	"You can play with it later."	33
Indirect commands	Requests that take the form of suggestions and maintain a sense of courteousness	"You really shouldn't touch that toy."	21
Direct commands	Explicit verbal statements that specify the child's desired action	"Don't touch that!"	18

Note. $n = 58$.

Kappas for the remaining codes, assessed between two coders on 17.2% of the sample, ranged from .70 (bargaining) to .95 (direct commands), with a mean kappa of .79. Distributions of all maternal variables contained a large number of mothers who never engaged in the behavior. Therefore, for each maternal code, mothers were given a binary score (0, 1) indicating whether or not they ever used the strategy during the 60-sec task. These binary scores were used in the preliminary analysis of associations. Table 1 contains descriptions and examples of the remaining maternal variables and the number of mothers who used each strategy. The original codes, indicating whether or not the mother utilized the strategy during a given interval, were retained for the analysis of contingencies.

Child Variables

Categories of regulatory behavior assessed were consistent with previous research highlighting specific verbal and behavioral strategies utilized during frustration tasks (i.e., Calkins & Johnson, 1998; Cournoyer & Trudel, 1991; Stifter & Braungart, 1995; Vaughn et al., 1984; Vaughn et al., 1986). For each 5-sec interval, the presence or absence of each of the following six child variables was assessed: orient to toy, orient to other, orient to mother, self-comforting, withdrawal, and scanning. Withdrawal and scanning were rarely observed and were dropped from further analysis. See Table 2 for descriptions and frequencies of the remaining variables. Cohen's kappa

TABLE 2
 Descriptions, Examples, and Frequencies of Child Behavior Categories

<i>Strategy</i>	<i>Definition</i>	<i>Example</i>	<i>M</i>	<i>SD</i>	<i>Range</i>
Orienting to toy	Focusing visual or verbal attention on the toy	Staring at or mentioning toy	7.60	3.01	1–12
Orienting to other	Focusing attention on other objects in room (excluding toy and mother)	Looking at the ceiling, asking where the experimenter has gone	5.67	3.10	0–12
Orienting to mother	Child directs verbal or visual attention toward mother	Turning to look at or talking to mother	4.76	2.85	0–10
Self-comforting	Soothing behaviors directed toward the self or to specific parts of the body	Playing with fingers or hair	3.14	3.53	0–12

Note. $n = 58$.

for these variables, assessed between two coders on 17.2% of the sample, ranged from .60 (self-comforting) to .78 (orient to other), with a mean kappa of .71.

Dependent Variable

For each interval, whether or not the child touched the toy was recorded. Kappa for this code based on 17.2% of the sample was 1.00. Of the 58 children, 34 never touched the toy, and a binary code (0, 1) was created indicating whether or not the child touched the toy at any time during the 60-sec procedure. This binary code was utilized in the preliminary analysis of associations. The original codes, indicating whether or not the child touched the toy during a given interval, were retained for the analysis of contingencies.

RESULTS

Preliminary Analysis

Child behaviors. Pearson's correlations were computed among the four child regulatory variables. As shown in Table 3, orienting to the toy was negatively correlated with both orienting to other and orienting to mother.

To determine whether strategies differed between children who touched the toy and those who refrained, point biserial correlations were computed between the child regulatory behaviors and touch status. Consistent with our expectations, children who did not touch the toy oriented more often to other

TABLE 3
Bivariate Relations Between Maternal Behaviors, Child Regulatory Behaviors, and Touch Status

<i>Behavior</i>	1	2	3	4	5	6	7	8	9	10
Maternal behaviors										
1. Distractions	—	.11	.25	-.21	-.14	-.36**	.54**	.26*	-.01	-.27*
2. Reasoning		—	.32*	.15	.22	.17	.07	-.18	-.06	.30*
3. Bargaining			—	.22	.28*	-.05	.14	-.03	-.15	.17
4. Indirect commands				—	.04	.33*	-.22	.00	.04	.31*
5. Direct commands					—	-.01	-.01	-.11	-.14	.27*
Child regulatory behaviors										
6. Orienting to toy						—	-.71**	-.29*	-.11	.29*
7. Orienting to other							—	.25	-.03	-.39**
8. Orienting to mother								—	.22	-.28*
9. Self-comforting									—	-.23
Outcome behavior										
10. Touch toy										—

Note. $n = 58$. Pearson's correlations reported for interrelations among child regulatory behaviors. Point biserial correlations reported for relations between child regulatory behaviors and both maternal behaviors and touch status. Phi coefficients reported for maternal behavior interrelations and for associations between maternal behaviors and touch status.

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

objects and to their mothers, but less often to the toy, than children who touched the prohibited object. When these four behaviors were used as predictors of touch status in logistic regression, the resulting model was significantly different from a constant-only model, χ^2 (Likelihood Ratio, $df = 4$) = 14.61, $p < .01$, with the four variables increasing goodness of fit by 22% (Cox's & Snell's R^2). It should be noted that the number of predictors exceeds usual guidelines for logistic regression (Christensen, 1997), and these values should be interpreted with caution.

Mother behaviors. To assess relations among the mother behaviors, phi coefficients were computed between all maternal variables. As shown in Table 3, mothers who used bargaining also tended to use both direct commands and reasoning.

Relations between mother and child behaviors. Point biserial correlations were used to examine the relations between child behaviors and maternal regulatory strategies (see Table 3). As expected, children whose mothers used distraction spent a greater amount of time orienting toward other objects in the room and to their mothers, but less time orienting to the forbidden toy than did children of mothers who did not use distraction. In contrast, the use of indirect

commands was associated with children spending more of their time orienting to the forbidden toy.

To provide an initial test of the success of mother strategies to keep their toddlers from touching the prohibited object, phi coefficients were computed between touch status and use of maternal strategies (see Table 3). Of the 24 parents whose children touched the toy, 19 (79%) reasoned with their child, 13 (54%) issued indirect commands, and 11 (46%) issued direct commands. Parents of nontouchers were significantly less likely to use these nondistracting techniques: 17 (50%) used reasoning, 8 (24%) used indirect commands, and only 7 (21%) used direct commands. In contrast, 26 (76%) of the parents of nontouchers used distraction to help their toddlers comply, whereas only 12 (50%) of the mothers of children who transgressed utilized distraction. When all maternal variables were entered into logistic regression predicting touch status, goodness of fit increased significantly, χ^2 (Likelihood Ratio, $df=5$) = 16.81, $p < .01$, Cox & Snell's $R^2 = .25$.

Data Consolidation

To limit the number of tests performed and to increase the number of analyzable sequences, a smaller number of maternal and child variables was desired for contingency analysis. A composite variable, labeled nondistract, made up of bargaining, reasoning, direct commands, and indirect commands, was chosen based on both conceptual and empirical grounds. Conceptually, although these strategies are fairly distinct in nature, they are similar in that they represent methods to change child behavior that do not involve distraction. Further, mothers whose children touched the forbidden toy used these techniques disproportionately. For each dyad, the interval-specific maternal data were rescored so that mothers received "credit" for nondistract in a given interval if they used any of the nondistracting techniques (e.g., bargaining, reasoning, direct commands, or indirect commands) during the interval. The interval-specific distract codes, indicating whether or not a mother used distraction in a given interval, remained in their original form for the contingency analysis.

A composite variable labeled orient elsewhere, was similarly created from the child variables orient to other, orient to mother, and self-comfort. These variables are conceptually related, as each indicates that the child is focusing his or her attention on something other than the forbidden toy. In addition, all of these behaviors were utilized more by children who refrained from touching the toy than by children who transgressed. As with the maternal composite, a child was given "credit" for orient elsewhere in a given interval if they performed any of these behaviors during the interval. As with the maternal distract codes, the interval-specific look to toy and touch toy scores remained in their original form for the contingency analysis.

Analysis of Contingent Behaviors

The results discussed thus far suggest that distraction by mother was associated with the child orienting to other objects and not touching the toy, whereas mothers in non-touch dyads were less likely than mothers of touchers to use reasoning and indirect and direct commands. These analyses, however, do not provide a satisfactory description of these relations. To provide a clearer picture of the coregulation of child behavior during the delay-of-gratification procedure, analyses were undertaken to delineate the patterning of mother-child coregulation.

Analyses of contingencies were undertaken for each of the six combinations of two maternal (distract, nondistract) and three child (orient to toy, orient elsewhere, touch toy) codes. For each of these combinations, three binary scores were generated (see Table 4). A lag 0 score indicated whether the mother's behavior and the child's behavior co-occurred within the same interval more or less often than would be expected by chance for a given dyad. A mother-first lag 1 score indicated whether an instance of a maternal behavior under consideration was followed in the next interval by the child behavior at levels that were higher or lower than chance. Finally, a child-first lag 1 score indicated whether a given child behavior was followed by a given maternal behavior at levels above or below chance. Following the calculation of these scores for each dyad, sign tests were used to indicate, on a group level, whether the contingencies occurred more or less often than chance. The final contingency analysis, therefore, was performed on the number of dyads that exhibited the lags just described at a greater than chance level or a less than chance level.

For example, one dyad included a child who oriented elsewhere during 6 of the final 11 intervals (55%). The mother in this dyad used distraction during 4 of the first 11 intervals. By chance, we would expect that 2.2 ($4 \times .55$) of these distractions would be followed in the next interval by orient elsewhere. In this case, however, three of the distractions were followed by orienting elsewhere, a number greater than chance. Thus, this dyad was included in the tally of dyads with orient elsewhere/distract child-first lag 1 contingencies greater than chance.

Prior to discussing these results, it must be noted that interval-based codes such as those used in this study are not optimal for analysis of interaction patterns. The use of a 5-sec interval is particularly problematic, as the sequences we were interested in may have often occurred within the same interval, obscuring information regarding which behavior occurred first. Furthermore, several dyads were excluded from certain analyses because they did not exhibit one or both of the behaviors examined (e.g., because only 12 dyads included both children who touched the toy and mothers who used distraction during the task, this was the maximum number of dyads available for the touch toy/distract lag 0 analysis). Finally, given the relatively low number of intervals, whether a contingency would be scored as occurring more or less often than chance for a given dyad was somewhat unstable.

TABLE 4
Contingency Analysis of Maternal and Child Behaviors

Contingency Pair (Child/Mother)	Lag 0				Lag 1—Child First				Lag 1—Mother First			
	Number of Dyads With Contingency Greater Than Chance	Number of Dyads With Contingency Less Than Chance	<i>p</i> for Sign Test	<i>p</i> for Sign Test	Number of Dyads With Contingency Greater Than Chance	Number of Dyads With Contingency Less Than Chance	<i>p</i> for Sign Test	<i>p</i> for Sign Test	Number of Dyads With Contingency Greater Than Chance	Number of Dyads With Contingency Less Than Chance	<i>p</i> for Sign Test	<i>p</i> for Sign Test
Orient to toy/nondistract	33	9	.0003		26	14	.08		26	17	.22	
Orient to toy/distract	6	28	.0002		15	21	.40		11	22	.08	
Orient elsewhere/ nondistract	11	20	.15		18	11	.26		16	14	.86	
Orient elsewhere/distract	19	4	.003		17	7	.06		19	2	.0002	
Touch toy/nondistract	19	3	.0009		17	5	.02		7	10	.63	
Touch toy/distract	1	11	.006		3	9	.15		2	6	.29	

Note. $n = 58$. Only dyads in which the observed frequency was unequal to the expected frequency are included in this table.

Given these considerations, our tests of contingent patterns should be considered tentative until replicated.

Child orientation to toy and maternal behavior. We first examined whether mothers' regulation strategies were used at times when their children seemed to be at the greatest risk for breaking the prohibition; that is, when they looked at or talked about the toy. It was expected that both distraction and nondistracting techniques would be used by dyads at greater than chance levels in intervals coinciding with or following intervals in which the child oriented to the toy. It was also predicted that children would be less likely to orient to the toy during intervals following a distraction attempt than following intervals in which their mother performed no distraction.

As seen in Table 4, in dyads in which children were oriented toward the toy, mothers were highly likely to enact a nondistracting control technique during the same 5-sec period. Contrary to expectations, however, mothers were unlikely to use distraction at these times. Examination of the lag 1 contingencies was not informative in regards to the directional patterning of these associations.

Child orientation elsewhere and maternal behavior. The primary expectation here was that maternal distractions would be successful, leading children to focus their attention away from the toy and to other stimuli during intervals following a maternal distraction attempt. Nondistracting maternal strategies were expected to be unrelated to children's orientation to other stimuli.

As expected, in dyads where mothers used distraction, children were highly likely to direct their focus to other items in the room during the same interval or in the interval immediately following. In addition, the sign test for the reverse pattern (child-first lag 1) nearly reached significance, suggesting that maternal distraction attempts may often follow, as well as precede, children's orienting to other stimuli. Nondistracting maternal strategies were not related to children's orienting elsewhere.

Maternal response to child transgression. The final issue addressed using contingency analysis was whether nondistracting maternal strategies were primarily used prior to the child touching the toy or were better considered a consequence of child misbehavior during the prohibition task. No hypothesis was made regarding the contingent relation between distraction and touching the toy.

Lag 0 contingencies showed that the use of nondistracting maternal strategies was strongly associated with the child touching the toy. Furthermore, in dyads where children touched the toy, parents were likely to use a nondistract technique in the following interval. It was not the case, however, that touching of the toy was particularly likely to follow the use of a nondistract strategy. Somewhat surprisingly, children's touching of the toy co-occurred with distraction at levels below chance. The direction of this relation could not be determined by the lag 1 analyses.

DISCUSSION

In her influential article on the development of behavioral control, Kopp (1982) made a distinction between control, which emerges during the final months of the first year and requires the presence of an external socialization agent such as a parent, and self-control, which includes the child's spontaneous use of behavioral tactics to maintain expected standards of conduct. This study provides a vivid snapshot of processes taking place near the end of the transition from control to actual self-control.

Although the allocation of attention is a fundamental method for successfully delaying gratification, the results of this study suggest that this skill does not develop automatically, but may be invoked and supported through interaction with caregivers during situations requiring self-restraint. As in previous reports (e.g., Cournoyer & Trudel, 1991; Mischel, 1974; Vaughn et al., 1986), focusing on stimuli other than a prohibited item was associated with the ability to refrain from touching the prohibited object. Attending to other aspects of the environment, however, was often not done spontaneously by the toddlers in this study. Rather, it frequently occurred in response to maternal directives to do so. Further, when children directed their attention to stimuli other than the forbidden object, such as the mother, other objects, or the self, several mothers appeared to support this regulation strategy through continued distraction. Thus, neither mother nor child appear to be leading the interaction; rather, the picture that emerged from our analysis of contingent behaviors is one of coregulation, in which mothers were seen as both affecting their toddlers' regulatory strategies and being influenced by their children's behavior.

The fact that several mothers in this investigation successfully used distraction to help their child regulate their behavior is somewhat surprising, as previous work (e.g., Hom & Knight, 1996) has indicated that several parents appear to be unaware of the usefulness of distraction for delay in young children. Although some parents may not explicitly recognize the value of drawing children's attention away from prohibited items, the results of our investigation suggest that many parents do utilize this technique successfully. Given the efficacy of distraction, it may prove beneficial to alert parents to this method as a means of promoting self-restraint in their children.

Even though the majority of children in this study were able to keep from touching the toy, it is somewhat surprising that, even with the presence of their mothers, over 40% were not able to do so. Vaughn et al. (1984) found comparable levels of delay ability in a sample of 30-month-old children who received no parental assistance, which suggests that the presence of the mother is not always helpful and, indeed, may increase the likelihood of misbehavior. It is not hard to imagine that some children treated their mothers as a play partner of sorts, touching the toy in a game-like manner. Future studies examining

delay of gratification, both with and without parental input, may clarify this phenomenon.

Our results suggesting that nondistracting maternal strategies may be more likely to follow a child transgression than to precede one are reminiscent of the work of Holden (1983; Holden & West, 1989), who identified two predominant styles of maternal behavior used to discourage undesirable behavior in their young children. Through naturalistic observation in a supermarket (Holden, 1983), it was shown that a proactive style, in which mothers preempted child misbehavior by engaging their children in conversation, was more successful in decreasing unwanted behaviors than was a reactive style, in which parents waited until a rule was broken before responding. In a laboratory analog of the supermarket situation (Holden & West, 1989), mothers were asked to use either a proactive or reactive style to keep their children from touching several attractive toys. As in the naturalistic study, proactive directing of child attention was associated with fewer rule violations and with more time spent engaging in acceptable behaviors. Conceptually similar, and indicative of the pervasive influence of a proactive parenting style, are recent findings from Gardner, Sonuga-Barke, and Sayal (1999), who found children of mothers who tended to wait until after their children misbehaved to enact a parenting technique had higher levels of conduct problems than did children whose mothers were preemptive in their parenting.

This study provides a conceptual replication and extension of the work of Holden and Gardner regarding the benefits of proactive parenting and underscores the power of attention allocation in the service of delayed gratification. Several limitations characterize this study, however, leaving questions unanswered that may be helpful in directing future research. The small sample size and relatively long (5-sec) duration of the interval used prevented exploration of whether parental distraction works equally well when used before, during, or after a touch has occurred. It may be the case that distraction is most useful as a prevention strategy, but is not helpful in pulling a child's attention from a toy once he or she has transgressed. The strategy of looking closely at performance during a single task at one age point was informative, but it also illuminated several potential questions for longitudinal or cross-sectional work. Of primary interest is whether the strategies used by parents to assist their children are relatively stable or were particular to the single, brief laboratory task used. Subsequent efforts would be well advised to utilize multiple delay situations to address this question. Similarly, it would be of interest to examine the ways that mothers (and fathers) alter their expectations for delay ability and the supporting techniques they use throughout toddlerhood and early childhood.

Of equal theoretical importance are the long-term consequences of providing distraction for a child to promote delay of gratification. Although this appears to be a valuable technique to elicit situational obedience in a delay condition, it may be

the case that providing distraction for a child may not contribute to, and indeed might interfere with, the child's ability to initiate regulatory tactics of his or her own. As discussed earlier, future studies examining coregulation of child attention should utilize longitudinal data as well as an array of delay tasks, both with and without parental assistance, to more effectively illuminate the implications of parental distraction. In doing so, developmentalists will be in a better position to determine whether patterns of coregulation remain stable across contexts and to further ascertain the proficiency of distraction as a strategy to aid children's delay of gratification.

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