

# Parental Contributions to the Delay of Gratification in Preschool-aged Children

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**Abstract** Delay of gratification in young children has been linked to long-term behavioral and academic outcomes. This study explored parent behavior during a laboratory paradigm as possible associates of delay ability. The sample consisted of 50 two- and three-year-old children and their primary caregivers. A newly created laboratory task, the gift delay task, was conducted to assess delay of gratification. Additionally, parents completed a child temperament (EASI-III) questionnaire. Based on the award-oriented behavior in the gift delay task, children were classified into three groups: delay (20 %), touch and go (i.e., approached the gift, but demonstrated some delay ability; 46 %), and non delay (34 %). Likewise, parents were classified into three groups: non-directive (parents did not initiate any interactions, but may have participated in child-led activity), active (parents initiated interaction with the child no more than 3 times), and very active (parents initiated 4 or more interactions with the child). Significant differences in emotionality and impulsivity were found between the 3 groups of children; additionally, significant differences in delay ability were found based on parent classifications suggesting that there is an optimal level of involvement on part of the parent that helps the child to wait, but beyond this point, involvement may be detrimental to a successful delay outcome. Implications for behavioral interventions focused on parental support and scaffolding are discussed.

**Keywords** Parenting · Delay of gratification · Self-control · Temperament

## Introduction

Since the 1950s, psychological perspectives on personality and behavior have shifted from assuming the existence of broad and stable dispositions of personality that yield consistency in an individual's behavior over time and social situations, to an emphasis on context—that it is the interaction between the individual with the specific situations of his/her life that influence the behavior of the individual. Hence, the approach of “person-situation interactionism” began to take roots in personality psychology (Magnusson and Endler 1977). This shift reflected a research focus that used a cognitive-social learning approach to assess internal constructs such as affect and cognition in the context of psychological situations. One such extensively researched construct was the self-regulatory system. The self-regulatory system determines how complex and relatively long-term patterns of goal directed behavior are planned, generated, and maintained even when the environment offers weak supports, impediments, and conflicting elements (Mischel 1990). Although psychological theories vary in their conceptualization of self-regulation, they agree on the gradual progression of the competency by age (Bronson 2000).

In order to identify the mechanisms that direct self-regulatory behavior and to understand the individual differences in self-regulation, Mischel (1983) and his colleagues have used the waiting paradigm and its variations to assess the capacity of preschool children to delay gratification. The capacity to delay gratification is preceded by a number of important processes (Kopp 1982). It is during

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infancy that an individual gains voluntary control over behavior. Often by the 1 year of age, a child can comply with the request of a caregiver. Autonomy develops by age two, and by three children are capable of using strategies for self-regulation. During the preschool years, socialization with parents shapes behavior by modeling these self-regulatory skills and through direct teaching. Thus, the process by which the child's ability to self-regulate in order to delay gratification is influenced by interactions of cognitive, emotional, and social factors, leading to individual differences in behavior.

Mischel (1974) defines the delay of gratification as “the ability to postpone immediate gratification for the sake of future consequences, to impose delays of rewards on oneself and to tolerate such self-initiated frustration” (p. 249). Mischel and others have researched extensively the influence of children's cognitive capacities on delay abilities (Bandura and Mischel 1965; Grolnick et al. 1996; Mischel and Ebbsen 1970; Mischel and Moore 1973; Moore et al. 1976; Peake et al. 2002; Nisan 1974; Schack and Massari 1973; Yates 1974; Sethi et al. 2000). These include: selective attention, exposure to rewards, effect of temporal aids, and cognitive representation.

Comparatively very few studies have been conducted to establish the role of social influences—including parental behavior—in the development of self control (for examples, see Feldman and Klein 2003; Jacobsen 1998; or Jacobsen et al. 1997). Of these, studies that have focused their attention on the delay of gratification indicate that maternal presence (Cournoyer and Trudel 1991; Vaughn et al. 1984, 1986) and parenting style (Hess and Mcdevitt 1984) influence child behavior in experimental delay tasks. Several studies have gone further to analyze the particular behaviors of parents. Of particular interest is the significant finding by Cournoyer and Trudel (1991) that maternal referencing may be an age-graded, transitory means for “resisting temptation” (p. 502). This highlights the importance of the role that the mothers can play to help children plan and execute effective delay strategies. Similarly, Gauvain et al. (2002) found that children whose parents used directive and disapproving comments had poorest performance in broader problem solving tasks—the higher the level of instruction, the better the child's performance.

Sethi et al. (2000) highlight the implications of their related findings on the correlation between maternal relationship and children's ability to down-regulate (or use “cooling strategies”) to redirect their attention in order to successfully delay gratification: effective strategies for toddlers with controlling mothers and those with non-controlling mothers are distinct. This emphasizes the importance of the social context of the child's behavior: Children's self control patterns do not develop in a vacuum; they are embedded in the context of the relationship

with the caregiver. Silverman and Ippolito (1995) and Silverman and Ragusa (1990) have also documented results in this vein: Children whose mothers were low in directiveness (a correlate of controlling or intrusive behavior) during free play had better delay abilities, and maternal encouragement of independence in children predicted superior delay performance.

Given the importance of self control for group learning contexts and broader social functioning (Eshel and Kohavi 2003; Fabes et al., 1999; Funder et al. 1983; Kochanska et al. 1997; Lagattuta 2005; Mischel 1983; Raikes et al. 2007), and the increasing number of states considering universal preschool programming, elaborating on the possible contributing factors to children's self control is warranted. It is with this rationale that the present study was designed. This study examined the relationship between parental behavior during a delay task and the ability of their 2- or 3-year-old children to delay immediate gratification. The specific research questions used to design this effort include: If given the opportunity to interact with the child during the delay task, how do parents behave? Do they suggest distraction strategies? Do they elicit strategies from the child? Do they encourage delay of gratification?

## Method

### Sample

The sample for the present study was recruited for a larger study by Mittal et al. (2012), involving 43 primary caregivers and their children between the ages of 2 and 3 who were enrolled at the Laboratory Preschools from 2 University sites. Additionally, child behavior reports were collected from the preschool teachers. Out of the 43 children, 18 were recruited at University of Connecticut, and the remaining 25 were recruited at Montclair State University, New Jersey. The sample included a total of 24 (55.81 %) boys and 19 (44.18 %) girls. Fifteen (34.88 %) were 2-year-olds and 28 (65.11 %) were 3-year-olds from mainly middle class, educated, single- and two- parent households. The majority of the children were White (64 %), followed by Black/African American (17 %), Asian/Asian American (6 %), and Hispanic (4 %) representation. Parents were highly educated: 40 out of the 43 mothers and 37 out of the 39 fathers had undergraduate and/or graduate degrees. The majority of parents worked full time, except for 4 parents who were students, 7 mothers who were working part time, and 7 mothers who were homemakers. The average income for the families was between \$40,000 and \$60,000 a year. Four out of the 43 mothers were single; all others were married.

## Measures

### *The Gift Task*

To examine parental behavior in an experimental situation demanding delay capacities from a child, the present study examined the 4 subsequently described segments of the video taped Gift Task. The Gift Task procedure (Mittal et al. 2012) used a choice paradigm to assess the delay ability of young children. The child first chose between a small brown paper gift bag and a larger decorative gift bag, and then had to wait for the more attractive gift in an empty room with just the chairs and a table on which the ordinary gift was placed. A similar procedure has been used successfully by Mischel et al. (1992) The procedure includes the following seven segments (note: because the procedure was used to evaluate parental activity and involvement level, only the four segments where the parent was present were used for analysis in this study):

1. The experimenter shows the child two gifts, a small one wrapped in an ordinary brown paper, and a large one decoratively wrapped. Children are asked which of the two gifts they would prefer to receive. Children are told that if they wait until the experimenter returns, they may have the preferred gift. If, however, they cannot wait until the experimenter returns, they may have the smaller gift at any time. After rehearsing these contingencies with the child, the experimenter leaves the room taking the large gift with her and leaving the small gift on the table in front of the child.

2. Parent and child are left to deal with this information in whatever manner they see appropriate; the parent is given no additional instructions.

3. 3 min later, a stranger enters the room and sits quietly.

4. After 3 min the mother leaves, and the stranger and child are left in the experimental room; this episode is truncated if the child becomes distressed.

5. After 3 min, the stranger leaves the room and the child is left in the play room alone; again, this episode is truncated if the child becomes distressed.

6. After 3 min, the parent rejoins the child.

7. Thirty-seconds later, the experimenter enters with the large gift.

The present study categorized children's observed delay behavior into three categories: (1) Some children opted for a particular gift and waited for it throughout. These children readily completed the delay task and were clear Delayers. (2) Other children opted for a particular gift in the beginning, but could not wait during the task and opened the non-preferred gift in front of them. This group of children was termed as non delayers. (3) The third group

consisted of children who touched or reached for the gift initially, but given a second chance, waited until the end of the task. These children were labeled as touch and go children. Both the touch and go and the non-delayers were offered another chance to try and wait for the more attractive gift by the researcher, however, and subsequently all children who could delay given both chances were included in the category of Delayers (Mittal et al. 2012).

### *Teacher Perceptions of Child Temperament*

Buss and Plomin's (1975) EASI-III was used to assess the teacher's perception of child temperament. The scale has a total of 50 items that are divided into four scales and further subdivided into ten sub-scales namely: Emotionality (General, Fear, Anger), Activity (Tempo, Vigor), Sociability, and Impulsivity (Inhibitory control, Decision time, Sensation seeking, Persistence). Teachers rated each item (e.g., "Child is easily frightened") on a scale from 1 ("strongly disagree") to 5 ("strongly agree").

The EASI III was selected because it is one of the shortest and easiest temperament measures; it is suitable for childcare workers of children ages 1–9 years. Also, the scale assesses an impulsivity domain, which has been omitted from several temperament measures, but nonetheless is crucial for understanding delay of gratification ability in children. The EASI III has confirmed, simple strong factor structure, in contrast to many other self-report measures, and the scale has high reliability and validity for this sample (see Mittal et al. 2012).

## Data Analysis

### *Temperament*

The children's preschool teachers' responses on the EASI temperament questionnaire were entered and analyzed according to the guidelines provided by author(s). For example, certain items had to be reverse-coded for the analysis (see Mittal et al. 2012).

### *The Gift Task: Child Behavior*

The delay outcomes of the gift task for the children were for frequency counts done separately for each of the seven Gift Task episodes. The coded behavior included award-oriented behavior (taking, touching/reaching for, commenting), interaction with the caregiver/experimenter/stranger, reaction to change, and affect. Inter-rater reliability for two independent coders exceeded 80 % exact agreement (see Mittal et al. 2012).

### The Gift Task: Parental Behavior

A Parental Behavior Coding System was developed for use in this study. The procedure for designing the coding system began by creating a list of 10 observed parental reactions for each segment after observing several gift tasks. These reactions were then defined in a codebook for use in coding all relevant Gift Task segments. To establish interrater reliability, two students coded eighteen tapes out of the total sample. The two coders varied in their coding 13 out of the total possible 593 codes (number of children multiplied by the number of segments, multiplied by the number of possible reactions for each segment) leading to a reliability based on exact match of 97.8 %. Once this high degree of reliability was established, a single student coded the remaining 27 tapes. The initial analysis of the data revealed the need to add the code of “non-verbal reaction”. Based on the coding, the parents were divided into three categories:

1. Non-directive—these parents did not initiate any interactions with the child during the gift task but may have participated in child-led activity or conversation.
2. Active—these parents did initiate interaction with the child, but did so only minimally—no more than 3 times (the median for the sample) across the 4 segments.
3. Very active—these parents initiated 4 or more interactions with the child throughout the segments.

## Results

### Parental Behavior

Crosstabs comparisons indicate there was no significant association between child age or gender and parental behavior during the gift task. Similarly, comparisons of parental characteristics (ethnicity, education, employment, and marital status) do not yield significant associations. On the broadest level, the parents were divided into two categories, “non-directive” and “directive”, based on the total number and type of behavioral responses they used in the four segments analyzed for this study. The non-directive parents included those who showed no responses during the segments and also those who only participated in child-led activities or conversation, without initiating any further interaction. For the group of Directive parents, the level of activity was also considered important. Therefore, the Directive parents were further divided into two categories: up to 3 directive responses (active, as 3 responses was the median number of responses for the sample) and “four or more directive responses” (very

**Table 1** Parent behavior categories

| Behavior category                    | n (%)     |
|--------------------------------------|-----------|
| Non-directive                        | 6 (14)    |
| Active (<4 responses)                | 24 (55.8) |
| Very active (four or more responses) | 13 (30.2) |

active). Table 1 presents the distribution of the parents in the three categories.

Upon reviewing the patterns of parental behavior responses across all four segments, it became apparent that the non-directive parents tended to be non-directive throughout the entire gift task. The very active parents, in contrast, were directive in almost all of the segments, with the maximum number of responses occurring in the second segment, involving just the parent and the child.

### Segment Specific Description of Parental Behavior

In the first segment (during which the researcher explained the gift task to the child), the most common parental behavioral response was “rephrasing the researcher’s instructions” ( $n = 22$ ). The parents used simpler words to rephrase the instructions, made sure that the child had understood by asking him or her to repeat, or translated the instructions in the child’s native language. Many of the nonverbal reactions also occurred during this segment ( $n = 14$ ). These reactions included nods, gestures to indicate surprise, or facial expressions to suggest the preference for the more attractive gift.

Of the four segments used in the present study, the second segment was the most relevant to analysis of parental behavior as it was the one in which only the child and the parent were present, and may be considered the best opportunity to observe any parental influence on children’s delay outcome. Table 2 describes the occurrence of parental reaction across all four relevant segments, as well as the rates of parental reactions in this particular segment.

A common behavioral response of the parents in the second segment was “distracting the child by engaging in conversation or activity”. Most of these conversations revolved around the activities in preschool, such as how the child had spent the day at school. Distraction activities included exploring the gift-task room, observing the bulletin board in the room, and reading or counting material on it. Some examples of distracting statements are: “I want to hear about your new class today”, “Did you sing any songs at school today?”, “What do you want to do after getting home?” Equally frequent was the response of “participating in child-led activity or conversation”. Nineteen out of the 43 parents also rephrased the instructions during this

**Table 2** Parental response across all segments and in the second parent–child segment

| Response  | Frequency total (%) | Frequency segment 2 (%) |
|---|---------------------|-------------------------|
| Rephrasing researcher’s instructions                            | 31 (72.1)           | 19 (44.2)               |
| Encouraging the child to wait for the more attractive gift      | 17 (39.5)           | 9 (20.9)                |
| Encouraging the child to go for the ordinary gift               | 1 (2.3)             | 1 (2.3)                 |
| Physically stopping the child from taking ordinary gift         | 0                   | 0                       |
| Moving the ordinary gift away from the child                    | 0                   | 0                       |
| Suggesting strategies to or eliciting strategies from the child | 4 (9.3)             | 4 (9.3)                 |
| Distracting the child by engaging in conversation or activity   | 29 (67.4)           | 26 (60.5)               |
| Participating in child-led activity or conversation             | 32 (74.4)           | 26 (60.5)               |
| Passive response (lack of any response)                         | 1 (2.3)             | 1 (2.3)                 |
| Nonverbal reaction  | 14 (32.6)           | 0                       |

segment to make sure that the child still remembered them. It was expected that the parents would show more obvious positive reactions for the more attractive gift during this portion of the procedure, however, only 9 parents directly encouraged the child to wait for the more attractive gift during the second segment. Examples of these reactions were: “You are doing a good job waiting”, “Don’t you want the fancy bag?” Parents did not offer much direct assistance for the waiting task by suggesting or eliciting waiting strategies. Only 4 parents showed this reaction, all of which were in the second segment. One such example was a parent who scaffolded the child’s experience by suggesting “Why don’t we sing songs while we wait for the gift?” There was only one parent who encouraged the child to go for the non-preferred gift (unsurprisingly, the child went for the ordinary gift without waiting for the more attractive one).

The third segment consisted of the presence of the stranger with the parent and the child. Few parental behavioral responses existed in this segment, the most frequent being “participating in child-led activity or conversation” ( $n = 14$ ) in the manner described above. The last segment which included the reunion of the parent and the child included little interaction related to the Gift Task. Once parental behavior was coded for each of the four segments, the 3 classifications of parental style were derived as described previously (shown in Table 3).

**Parental Behavior and Delay Outcomes**

As depicted in Table 4, delay of gratification outcomes for the children of active parents indicated that active

**Table 3** Parental style categories and corresponding gift task responses

| Gift task response  | Parental style            |                     |                          | $\chi^2$ | <i>p</i> |
|---|---------------------------|---------------------|--------------------------|----------|----------|
|   | Non-directive ( $n = 6$ ) | Active ( $n = 24$ ) | Very active ( $n = 13$ ) |          |          |
| Rephrasing researcher’s instructions                          | 0                         | 18                  | 13                       | 14.9     | 0.001    |
| Encouraging the child to wait for preferred gift              | 0                         | 7                   | 10                       | 12.6     | 0.002    |
| Encouraging the child to go for less attractive gift          | 0                         | 0                   | 1                        | 2.4      | 3.07     |
| Physically stopping child from taking less attractive gift    | 0                         | 0                   | 0                        |          |          |
| Moving the less attractive gift away from the child           | 0                         | 0                   | 0                        |          |          |
| Suggesting to or eliciting strategies from the child          | 0                         | 0                   | 4                        | 10.2     | 0.006    |
| Distracting the child by engaging in a conversation/ activity | 0                         | 17                  | 11                       | 3.5      | 0.175    |
| Participating in child-led activity or conversation           | 5                         | 19                  | 8                        | 1.7      | 0.434    |
| Passive response  | 1                         | 0                   | 0                        | 6.3      | 0.043    |

**Table 4** Children’s delay of gratification classification across the parent style categories

|              | Parent behavior category |        |             |
|--------------|--------------------------|--------|-------------|
|              | Non-directive            | Active | Very active |
| Non delayers | 1                        | 6      | 9           |
| Delayers     | 5                        | 18     | 4           |
| Total        | 6                        | 24     | 13          |

$\chi^2 = 8.3, p < 0.05$

interventions by the parents may be associated with children’s delay capacity. For the active parents, 3/4 of the children were delayers. The results also suggest, however, that some children could delay their gratification even with non-directive parents. It is important to note that the non-directive category did not necessarily indicate total absence of any reaction from the parent. These parents also included those who did not initiate any reaction but merely followed the child’s activity or conversation. The delay

outcomes of children with very active parents, however, were in the opposite direction; about 2/3 of the children with very active parents were non-delayers.

#### Parental Behavior and Child Temperament

Temperament reports obtained from the children's preschool teachers yielded separate scores for Emotionality, Activity, Sociability, and Impulsivity on the EASI (Buss and Plomin 1975). The scores for Emotionality, Activity, and Sociability did not yield significant correlations with parental activity style during the gift task, however, children's Impulsivity ratings were significantly correlated to parental activity level (Pearson  $r = 0.353$ ,  $p < 0.05$ ). This supports the possibility that parent behavior is related to children's self-control. ANOVAs were also computed for the EASI questionnaire scores and the 3 parental behavior style categories. Results indicated a significant difference between the groups in their emotionality score ( $F = 3.11$ ,  $p < 0.05$ ), which suggests that the mean scores for teacher-rated child emotionality were higher in the group of children with very active parents as compared to those of active and non-directive parents.

#### Discussion

The aim of the present study was to extend prior research on social factors contributing to the delay of gratification in young children. Barring the exception of a very few, most of the relevant studies that have focused on mothers in the delay situations have merely concentrated on the presence or the absence of the mother or on parenting style. This study adds to the existing literature by analyzing the specific behavior of the parent during the delay task and its association with the delay outcome.

Silverman and Ippolito (1995) have suggested ways in which caregivers can influence the delay behavior in children. By using the principles of negative reinforcement or punishment, caregivers can work towards eliminating undesirable or impulsive behavior in children. In contrast, they can also encourage delay behavior by supporting the children in making choices about his or her actions. They suggest that children who are aware of caregiver's goals for the child's behavior, and who are given the opportunity to choose to delay their gratification without direct caregiver demands being voiced, are more apt to delay successfully when delay is explicitly demanded. The present analysis of parental behavior during the Gift Task revealed that about half of the parents (55.8 %) were classified as active. The most common behaviors used to classify these parents were "rephrasing the researcher's instructions", "participating in child-led activity or conversation" and "distracting

the child by engaging in conversation or activity". It is noteworthy that even the very active parents did not exhibit many behaviors that specifically encouraged children's use of delay strategies.

#### Associations with Children's Delay of Gratification

Overall, there were more delayers in this sample than non-delayers. This could be attributed to sample-specific qualities. Both the sampling sites were childcare facilities in university settings. It is possible that the young children at such facilities have some exposure to delay situations, e.g., waiting turns while doing a group activity. It is likely that these experiences put the children at an advantage during the laboratory gift task over children who have not yet experienced the self-control demands of group learning environments.

The behavior of parents during the gift task was associated with the delay outcomes in children. Within the group of children with active parents, there were more delayers than non-delayers. In contrast, the trend was opposite within the group of children with very active parents. This suggests that there is an optimal level of involvement on part of the parent that helps the child to wait, but beyond this point, involvement may be detrimental to a successful delay outcome. An alternative explanation might be that parents tend to be more directive when the child is less likely to delay.

These results support an association between parental activity and child's delay capacities as found in previous research which indicates that children of mothers, who are "less directive" in their approach, are better at delay task. Silverman and Ippolito (1995) found that the children of mothers low in directiveness during the free play had better delay abilities during later delay task. These mothers used less intrusive interaction styles and provided plenty of positive feedback. Silverman and Ragusa's (1990) assessment of the compliance tasks also reveal that low maternal directiveness and maternal encouragement of independence in children predicted superior delay performance.

#### Limitations and Implications for Future Research

The study lacked diversity in demographic characteristics; further research with a broader demographic group of children is necessary. Additionally, only parental behavior during the Gift Task was examined here. Several other parental characteristics such as parental warmth and parental control in other contexts also can be studied for their impact on delay behavior in young children.

The behavior of the parents in the present study was associated with impulsivity in children. This was evident from the significant positive relationship between the

activity level of the parents and the teacher-reported impulsivity in children. This result does not, however, give any information about a causal relationship between the two. It is difficult to determine whether it is the impulsivity in children that increases the parental activity level or is it the higher parental activity that increases impulsivity in children. Is it that these parents are over involved because the children are impulsive, or is it that the children tend to be impulsive because of the excessive involvement of the parents? Further research is required to answer this question.

Finally, the findings of this study are relevant for effective delay interventions for children at home. Such interventions would include coaching the parents to foster delay in children by modifying/structuring the environment at home; providing a balance of directive behavior, opportunities for independent discovery and appropriate reinforcement.

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## References

- Bandura, A., & Mischel, W. (1965). Modification of self-imposed delay of reward through exposure to live and symbolic models. *Journal of Personality and Social Psychology*, 2, 698–705.
- Bronson, M. (2000). *Self-regulation in early childhood*. New York: Guilford Press.
- Buss, A. H., & Plomin, R. (1975). *A temperamental theory of personality development*. New York: John Wiley and Sons.
- Cournoyer, M., & Trudel, M. (1991). Behavioral correlates of self-control at 33 months. *Infant Behavior*, 14, 497–503.
- Eshel, Y., & Kohavi, R. (2003). Perceived classroom control, self-regulated learning strategies, and academic achievement. *Educational Psychology*, 23, 249–260.
- Fabes, R. A., Eisenberg, N., Jones, S., Smith, M., Guthrie, I., Poulin, R., et al. (1999). Regulation, emotionality, and preschoolers' socially competent peer interactions. *Child Development*, 70, 432–442.
- Feldman, R., & Klein, P. S. (2003). Toddlers' self regulated compliance to mothers, caregivers, and fathers: Implications for theories of socialization. *Developmental Psychology*, 39, 680–692.
- Funder, D.C., Block, J. H., & Block, J. (1983). Delay of gratification: Some longitudinal personality correlates. *Journal of Personality and Social Psychology*, 44, 1198–1213.
- Gauvain, M., Fagot, B., Leve, C., & Kavanagh, K. (2002). Instruction by mothers and fathers during problem solving with their young children. *Journal of Family Psychology*, 16, 81–90.
- Grolnick, W. S., Bridges, L. J., & Connell, J. P. (1996). Emotion regulation in two-year-olds: Strategies and emotional expression in four contexts. *Child Development*, 67, 928–941.
- Hess, R. D., & Mcdevitt, T. M. (1984). Some cognitive consequences of maternal intervention techniques: A longitudinal study. *Child Development*, 55, 2017–2030.
- Jacobsen, T. (1998). Delay behavior at age six: Links to maternal expressed emotion. *The Journal of Genetic Psychology*, 159, 117–120.
- Jacobsen, T., Huss, M., Fendrich, M., Kruesi, M. J. P., & Ziegenhain, U. (1997). Children's ability to delay gratification: Longitudinal relations to mother-child attachment. *The Journal of Genetic Psychology*, 158, 411–426.
- Kochanska, G., Murray, K., & Coy, K. C. (1997). Inhibitory control as a contributor to conscience in childhood: From toddler to early school age. *Child Development*, 68, 263–277.
- Kopp, C. B. (1982). Antecedents of self-regulation: A developmental perspective. *Developmental Psychology*, 18, 199–214.
- Lagattuta, K. H. (2005). When you shouldn't do what you want to do: Young children's understanding of desires, rules, and emotions. *Child Development*, 76, 713–733.
- Magnusson, D., & Endler, N. S. (1977). Interactional psychology: Present status and future prospects. In D. Magnusson & N. S. Endler (Eds.), *Personality at the crossroads: Current issues in interactional psychology*. Hillsdale, NJ: Erlbaum.
- Mischel, W. (1974). Processes in delay of gratification. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 7). New York: Academic Press.
- Mischel, W. (1983). Delay of gratification as process and as person variable in development. In D. Magnusson & V. Allen (Eds.), *Human Development—An Interactional Perspective* (pp. 149–165). New York: Academic Press.
- Mischel, W. (1990). Personality dispositions revisited and revised: A view after three decades. In L. A. Pervin (Ed.), *Handbook of personality* (pp. 111–134). New York: Guilford Press.
- Mischel, W., & Ebbesen, E. (1970). Attention in delay of gratification. *Journal of Personality and Social Psychology*, 16, 329–337.
- Mischel, W., & Moore, B. (1973). Effects of attention to symbolically presented rewards on self-control. *Journal of Personality and Social Psychology*, 28, 172–179.
- Mischel, W., Shoda, Y., & Rodriguez, M. L. (1992). Delay of gratification in children. In G. Lowenstein, & J. Elster (Eds.), *Choice over time* (pp. 147–164). New York: Russell Sage Foundation.
- Mittal, R., Russell, B. S., Britner, P. A., & Peake, P. K. (2012). Delay of gratification in two- and three-year-olds: Associations with attachment, personality, and temperament. *Journal of Child and Family Studies*. doi:10.1007/s10826-012-9600-6.
- Moore, B., Mischel, W., & Zeiss, A. (1976). Comparative effects of the reward stimulus and its cognitive representation in voluntary delay. *Journal of Personality and Social Psychology*, 34, 419–424.
- Nisan, M. (1974). Exposure to rewards and the delay of gratification. *Developmental Psychology*, 10, 376–380.
- Peake, P. K., Hebl, M., & Mischel, W. (2002). Strategic attention deployment for delay of gratification in working and waiting situations. *Developmental Psychology*, 38, 313–326.
- Raikes, H. A., Robinson, J. L., Bradley, R. H., Raikes, H. H., & Ayoub, C. C. (2007). Developmental trends in self-regulation among low-income toddlers. *Social Development*, 16, 128–149.
- Schack, M. L., & Massari, D. J. (1973). Effects of temporal aids and frustration on delay of gratification. *Developmental Psychology*, 8, 168–171.
- Sethi, A., Mischel, W., Aber, L., Shoda, Y., & Rodriguez, M. (2000). The role of strategic attention deployment in development of self-regulation: Predicting preschoolers' delay of gratification from mother-toddler interactions. *Developmental Psychology*, 36, 767–777.
- Silverman, I. W., & Ippolito, M. F. (1995). Maternal antecedents of delay ability in young children. *Journal of Applied Developmental Psychology*, 16, 569–591.

- Silverman, I. W., & Ragusa, D. M. (1990). Child and maternal correlates of impulse control in 24-month-old children. *Genetic, Social, and General Psychology Monographs*, *116*, 435–453.
- Vaughn, B. E., Kopp, C. B., & Krakow, J. B. (1984). The emergence and consolidation of self-control from eighteen to thirty months of age: Normative trends and individual differences. *Child Development*, *55*, 990–1004.
- Vaughn, B. E., Kopp, C. B., Krakow, J. B., Johnson, K., & Schwartz, S. (1986). Process analyses of the behavior of the very young children in delay task. *Developmental Psychology*, *22*, 752–759.
- Yates, G. (1974). Influence of televised modeling and verbalization on children's delay of gratification. *Journal of Experimental Child Psychology*, *18*, 333–339.