

Qualitative Differences in Two-Year-Olds' Attention Seeking:
The Link Between Eagerness to Learn and Committed Compliance

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ABSTRACT

Qualitative Differences in Two-Year-Olds' Attention Seeking:
The Link Between Eagerness to Learn and Committed Compliance

Marie-Pierre M. Gosselin

Toddlers' eagerness to collaborate with parents across both discipline and teaching contexts has important implications for socialization. However, little is known about what leads to individual differences in children's readiness to be socialized. One possibility lies in children's positive expectations of parent responsiveness. The current study attempted to measure these child expectations through observations of the quantity and quality of attention seeking during parent unavailability. Two-year-olds and their parents ($N = 102$) participated in an imitation task and in two compliance tasks. Overall, results showed a consistent interaction between the quality and the quantity of attention seeking, with quality being particularly important at high levels of attention seeking. Although children's social expectations did not mediate the link between toddlers' eagerness to learn and committed compliance, there was a strong positive correlation between eagerness to learn and children's positive and confident attention seeking. Implications are discussed in terms of the role of the quality of attention seeking in toddler's readiness to be socialized.

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Qualitative Differences in Two-Year-Olds' Attention Seeking:

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Socialization is the process by which children acquire the appropriate social and behavioral codes prescribed by their society and culture. With the exponential increase in mobility and in vocabulary associated with the second year, toddlerhood is typically the period during which parents begin the transmission and teaching of rules and skills that will help their children learn how to adequately regulate their own behaviors.

Nevertheless, parents and other role models are not the only contributors to socialization, as the process is also affected by the quality of children's involvement. While noncompliant and oppositional behaviors may pose significant management problems to parent teaching and discipline, a child's eager motivation to collaborate with the parent may contribute to the ease of the socialization process. The aim of the present study was to examine and characterize toddlers' motivation to interact with the parent in an attempt to explain children's compliance and motivation to learn from, and with, their parents.

Child Compliance and Eagerness to Learn

The quality of child cooperation with parent discipline has been intensively studied in the form of child compliance. In search for early contributors of children's healthy socialization outcomes, Kochanska and Aksan (1995) distinguished between two qualitative forms of compliance. They proposed the term 'committed compliance' to refer to a child's enthusiastic and self-sustained cooperation to maternal requests. In contrast, 'situational compliance' has been used to describe children who respond to parental discipline only in a half-hearted manner, and whose complying behavior is contingent on regular parental directives. Aside from the behavior qualities distinguishing

committed from situational compliance, these forms of compliance can also be differentiated based on their developmental pathways, with only committed compliance being a precursor to the internalization of rules and moral codes (Kochanska, 2002; Kochanska & Aksan, 1995; Kochanska, Forman, Aksan, & Dunbar, 2005; Kochanska & Murray, 2000).

More recently, research has shown that a child's eagerness to be socialized is not limited to the discipline domain, as it may also apply to teaching experiences, and more specifically, to parent-child imitation activities. Toddlerhood is thought to be a crucial period for the development of imitative learning (Tomasello, Carpenter, & Call, 2005). Most studies of imitation have been concerned with identifying developmental milestones rather than with discovering the sources of individual differences, or with investigating the role of relationships in children's imitative motivation and performance (e.g., Killen & Uzgiris, 1981; Sibulkin, & Uzgiris, 1978). Uzgiris (1991) has argued that imitation should be credited for its role in the socialization process as a promoter of mutuality and reciprocity. Because imitation necessarily involves a social interaction, this process should be viewed in terms of the interchange between the model and the observer involved. In daily interactions, parent and child engage in a variety of behaviors that are mutually reciprocated. These mutual exchanges, in addition to promoting the acquisition of various skills and behaviors, may also foster a sharing context in which both child and parent are actively involved.

Recent work on individual differences in imitation suggests that the quality of the caregiver-child relationship may be an important contributor to the child's eager and accurate performance in an imitation task (Kochanska, Forman, & Coy, 1999).

Measuring toddlers' mother-oriented motivation in an elicited imitation task, Forman and Kochanska (2001) found that eagerness to learn from and with the mother was associated with high levels of committed compliance in a discipline context. Responsive imitation at 14 and 22 months also predicted the child's conscience at age three and four (Forman, Aksan, & Kochanska, 2004).

Research on children's eager collaboration has important implications for the coherence of child responsiveness across different types of socialization contexts. However, apart from research with autistic children, the role of children's social motivation or eagerness to engage in interactions with others, in explaining child responsiveness has rarely been studied (see Rogers, 2006 for a review). While an overall amount or strength of social orientation has been shown to play a role in children's imitative performance (Goggin, 1974; Ross, 1966), the quality of children's social motivation may also be a determining factor in explaining why some children may be more likely than others to replicate a caregiver's actions.

The concept of child responsiveness has previously been described by Maccoby and Martin (1983) as receptiveness to socialization. Although they argued that some children may be predisposed to be more responsive than others, Maccoby and Martin (1983) attributed most of the child responsiveness trait to early responsive parental care. One possible factor contributing to child responsiveness comes from child expectations of responses in the course of social interactions (Figure 1). Based on past experiences

Insert Figure 1 about here

with the primary caregiver, the child forms expectations about the parent's response and about the likelihood that social interactions will be pleasurable. Thus, children who have repeated enjoyable experiences with their primary caregiver may be more motivated to embrace the parent's agenda, which would facilitate the acquisition of rules and skills. Although Maccoby and Martin (1983) suggested that these expectations represent the source of child responsiveness, there has been little empirical effort to characterize these expectations in toddlerhood.

Although some have suggested that children's eagerness to learn from parents reflects a child's desire to please the parents and to enjoy a positive interaction with them (Forman et al., 2004; Kochanska et al., 2005; Maccoby & Martin, 1983), the opposite is also possible. Children's prompt motivation to interact with the parent may also reflect a child's anxiety to please (Kochanska, 1991). That is, children who are uncertain of parent's attention and who expect interactions from the parent to be inconsistent or unpredictable, may be motivated to please the parent in an attempt to reduce their fear of abandonment or their fear that the parent will not pay any attention to them. A child may thus follow parental requests because parent's approval and responsiveness are contingent on the child's appropriate behavior.

If child responsiveness is determined by children's expectations of parent response, then it should be possible to observe qualitative differences in children's social bids when the parent's availability is restricted. These differences may be difficult to observe in proximal parenting contexts, in which parents are required to pay attention to their child, and where parental behaviors may influence child behaviors. However, a parent-busy context may offer a means to examine how the quality of child social

expectations may contribute to child responsiveness. Children who seek the parent's attention because they expect to share a pleasurable interaction should exhibit positive and confident patterns of attention seeking, and these behaviors should relate positively to children's eagerness to be socialized. The attention-seeking quality of children who are threatened by the parent's unavailability should be characterized by negative affect and low confidence.

The nature of child social motivation has been previously studied in the form of dependency and social mastery (e.g., Combs & Wachs, 1995; Goggin, 1974; Ross, 1966). Attachment research has also shown that attention-seeking patterns play an important role in determining the quality of attachment security between a child and a primary caregiver (Ainsworth, 1979). The remainder of this review will situate the distinction between children's eagerness and anxiety to please the parent and how it fits within the previous and current theoretical accounts of children's parent-directed behaviors.

Dependency

In the present study, social responsiveness was defined in terms of a young child's tendency to respond eagerly and positively across multiple contexts involving parent-child interactions. Although some have argued that children's positive expectations lead to child responsiveness (Maccoby & Martin, 1983), early dependency research viewed attention-seeking attempts as undesirable outcomes of a dependency drive. Dependency was defined as a child's need for approval, comfort, and attention (Sears, Maccoby, & Levin, 1957). While the psychodynamic perspective linked dependency with an oral fixation occurring within early mother-child interactions, the social learning tradition explained individual differences in dependency in terms of the processes by which infants

learn to associate their mothers' presence and care to other biological and psychological drives and needs (Bornstein, 1992). Through the laws of reinforcement, dependent behaviors that were initially found in the context of the mother-infant relationship would generalize to other relationships, thus explaining undesirable outcomes such as pervasive attention seeking, helplessness, and immaturity (Ainsworth, 1969; Abramson, Seligman, & Teasdale, 1978).

The association between dependency and compliance has been avidly researched. The basic assumption was that highly dependent individuals, because of a strong need to please others, would be more likely to comply with demands. While this idea has been partially supported in studies with adults (Biaggio, Godwin, & Baldwin, 1984; Bornstein & Masling, 1985), the use of questionnaire and projective measures largely limited the extent to which researchers were able to replicate this association in childhood. In addition, these studies only inferred the underlying existence of a desire to please others, and neglected behavioral measures of dependency and compliance.

These developmental and empirical limitations were addressed in early social learning studies. Of particular relevance for the current study is the dependency research on children's imitative learning. In a classic study, Ross (1966) combined observational measures of 4-year-olds' attention-seeking patterns in the preschool to form a behavioral scale of dependency. Included in the scale were observations of child proximity-seeking and help-seeking behaviors, as well as combined forms of negative and positive attention seeking. By recording the types of actions preschoolers would imitate, Ross (1966) found that dependent children more frequently reproduced a model's irrelevant actions, which consequently led them to be less effective than more independent children at performing

actions that were necessary to attaining a specific goal. Unfortunately, the findings were limited because of the lack of differentiation in the measures used for the dependency construct. More specifically, dependency was operationalized as the amount of attention seeking exhibited by the child, but failed to distinguish between qualitative forms of social behaviors. Goggin (1979) studied a similar age group, but distinguished between emotional (comfort-seeking and negative attention-seeking) and instrumental dependency (request for help or approval within the context of a learning task). Making this distinction, Goggin (1974) found a positive association between imitation of irrelevant actions and the levels of children's emotional dependency and positive attention-seeking behaviors in a classroom setting.

Research on dependency has led to important insights into the reasons for individual differences in social learning. Nevertheless, due to the broad use of the concept, it is unclear how dependency would relate to child responsiveness. While social bids may be important indicators of a child's underlying motivation, the measurement of dependency has largely relied on a constricted number of behaviors, and has failed to acknowledge the importance of affect. The heterogeneity and inconsistencies in the measurement of dependency combined with a rising interest in attachment research have contributed to the decline of the construct beginning in the 1970s. Nevertheless, insights from dependency research may still be useful in helping to explain why children may react differently to a caregiver's unavailability.

Attachment

At the time when dependency began to fade from scientific interest due to inconsistent findings, the ethological attachment theory of Bowlby (1969) became a more

effective framework by which to understand the child's need for the caregiver's attention. Although attachment and dependency both consider children's attention-seeking patterns as external markers of some internalized construct, these two concepts differ in the context-specificity and the fundamental reasons given for children's social bids. While dependency would predict that highly dependent children would fulfill their need for attention through repeated contact with various social agents, attachment theory would be specifically concerned with the child's attention seeking in the mother-child relationship. Attachment theorists define these attention-seeking bids as a child's overt signs for a natural and universal tendency for young infants to be attached to their primary caregivers (Ainsworth, Blehar, Waters, & Wall, 1978). Thus, behaviors such as proximity maintenance and close contact that were formerly viewed as immature or undesirable, were now seen as adaptive mechanisms, promoting children's safety and well-being. In this conceptual framework, the organization of attention-seeking patterns is of particular relevance to the quality of the attachment characterizing the caregiver-child relationship. The desirable outcome of early mother-child interactions is a secure attachment. Children who are securely attached have confidence that their needs will be attended to, and this confidence in the caregiver's response allows them to use the caregiver as a secure base from which to explore and learn from the environment (Ainsworth, 1979; Blehar, Lieberman, & Ainsworth, 1977).

Attempts at understanding the link between security of attachment and child cooperation have, at their core, the quality of caregiver responsiveness (Stayton, Hogan, & Ainsworth, 1971). Through repeated exposure with a caregiver, children develop internal representations about the way interactions should typically occur. This internal

working model allows the child to make predictions about the quality of ongoing and future interactions with a caregiver. Thus, a child whose caregiver has been a reliable source of support and comfort is likely to develop confident and positive expectations that the caregiver will also be available and supportively responsive in future interactions. In contrast, a caregiver who has been inconsistent in providing care and safety is likely to leave the child with uncertain expectations about the caregiver's availability. Inconsistencies in parental care are typically associated with an insecure resistant attachment.

Although child expectations may play a role in a child's motivation to collaborate with the parent, the organized behavior patterns underlying internal working models have typically been measured within the paradigm of the Strange Situation at around age one (Ainsworth & Bell, 1970). Thus, little is known about these patterns of behaviors in toddlerhood, and how the quality and quantity of these behaviors corresponding to children's expectations contribute to children's eagerness to be socialized.

Sroufe (1992) argued that through repeated experiences with a responsive caregiver, securely attached infants learn to share and enjoy positive social interactions, which makes them more trusting and suited to positively interacting with their environment. Thus, the child's confidence in the caregiver's care and attention leads to the development of confidence in the self in the presence of the caregiver. In turn, this extends to the child's own feelings of self-confidence (Sroufe, 1992).

Attachment provides a useful framework to understand why children differ in the quality of their social behaviors. Although attachment could predict that a child's positive expectations of parent response could explain children's eager collaboration with

the parent (Matas, Arend, & Sroufe, 1978), these expectations have rarely been studied in toddlerhood. One way to measure child expectations of response is to examine the quality of attention-seeking attempts when the parent's attention is partially restricted. Children who expect to share a positive interaction with the parent should show high levels of confidence and positive affect in attempting to get the parent's attention. In contrast, a child who is uncertain and anxious about the caregiver's responsiveness should likewise be highly motivated to get the parent's attention, attention-seeking behaviors should be more negative and less confident.

Despite the important role of relationship factors in understanding why children may demonstrate different levels of responsiveness, children's individual characteristics may also contribute to children's eagerness to collaborate with parents. More specifically, some children may possess a disposition or inborn tendency to enjoy and seek social interactions, leading to a strong motivation to positively interact with others. This tendency may in turn have consequences on children's responsiveness to socialization.

Sociability

Sociability represents a temperament dimension defined as a child's preference to be with others rather than being alone (Buss, Plomin, & Willerman, 1973). Typically, sociable children seek to share activities with others, and are thus actively involved in the continuous flow of exchanges specific to social interactions. Kagan (1998) has conceptualized sociability and shyness as part of the broader construct of behavioral inhibition. Whereas sociable children are found at the low end of the continuum, shy children are perceived as exhibiting elevated levels of inhibition in the face of unfamiliar stimulations (Kagan, 1998). Although this dichotomy may hold in unfamiliar contexts

(Buss et al., 1973; Rickman & Davidson, 1994), it is unclear how the construct of behavioral inhibition may be applicable to understanding individual differences in children's bidding directed towards a well-known interaction partner.

Contrary to Kagan's dichotomy, Buss (1989) argued for the distinctive nature of sociability, defined as children's active seeking of social stimulation and responsiveness from others. Sociable children, thus, enjoy interactions with others and are enthusiastic social partners. Although this description suggests that sociable children may be especially likely to collaborate with social partners, sociability is not expected to be relationship-specific, as the concept reflects a global child characteristic rather than an aspect of relationships.

If child responsiveness represents a child's disposition to engage positively and confidently in social interactions, then attempts at initiating and maintaining positive social activities should be stable across contexts and across interaction partners. However, because temperamental measures are typically obtained from parent reports, and given that these measures do not perfectly coincide with behavioral measures (Kagan, Reznick, & Snidman, 1989), it is somewhat difficult to evaluate how observations of parent-directed bids relate to the conceptualization of sociability. Bates (1989) further argued that, for some purposes, temperamental dimensions may be too broad to account for individual differences in child behaviors and suggested that the development of specific dimensions would be more effective in describing the mechanisms underlying a child's social behavior.

Perhaps a more precise way to look at children's social motivation is to develop specific observational measures of children's attempts at influencing the course of social

interaction. This is what research on social mastery motivation has attempted to achieve using various behavioral measurements. b

Social Mastery Motivation

Social mastery motivation presents a distinct account of the underlying reasons for children's social behaviors. Social mastery is defined as children's motivation to have an impact on their social environment (MacTurk, 1985). In order to fulfill this social drive, children with high levels of social mastery will persistently seek an adult's attention. The measurement of social mastery is, therefore, one of quantity rather than one of quality, sharply contrasting with the style of measurement used in attachment research. However, the inconsistent links of social mastery with other related constructs, including attachment and sociability, suggest that the quality of children's behaviors should not be overlooked. Based on a factor analysis of the convergent validity of social mastery, Combs and Wachs (1995) redefined the construct as an "*active positive social orientation*". From their analysis, this factor showed strong positive loadings with three observational variables of children's mastery. The first variable was a measure of the child's preference for interactions (with examiner or caregiver) rather than the toys. The two other variables were measures of the frequency of positive affect and of the toddler's initiated contact with the examiner. Interestingly, a second factor, entitled "*Object involvement with parent*", was represented by strong positive loadings on children's seeking and maintenance of an interaction with the parent as well as on the time spent at attempting to get the parent involved in an activity. Negative affect also loaded negatively on this factor. These findings point to important considerations regarding the nature of child social behaviors.

Based on these findings, Combs and Wachs (1995) argued that attention-seeking behaviors cannot be considered to be solely based on the frequency of occurrence. Rather, the affective quality of these bids represents an important indicator of the child's underlying motivation to influence the course of social interactions. Unfortunately, little, if any, published work on social mastery has followed up on this claim.

The observed differences in the quantity and quality of attention-seeking behaviors across social partners suggest that children's social motivation may be moderated by a relationship factor. More specifically, children who are eager to engage the parent in their ongoing activities may not do so equally with a stranger. Thus, the parent-child relationship represents a special context in which a child's attempts at getting the parent's attention cannot be subsumed by a more global social mastery construct.

Summary

Dependency, attachment, temperament and social mastery constitute the four major areas of research on the consequences and antecedents of a child's parent-directed behaviors. While these concepts have been useful to present the child as an active participant in the socialization process, and in describing the importance of qualitative distinctions among children's social bids, there has been little research on the actual quality of child attention seeking. The present study was designed to examine the nature of children's social motivation by measuring the extent to which the child was eager to interact with the parent. More specifically, children's expectations of parent responsiveness were examined through the quantity and the quality of children's social behaviors when the caregiver was unavailable.

The Current Study

The overall aim of this study was to extend the work on child and relationship factors contributing to children's eagerness to comply and learn from their parents. While social expectations have been suggested to account for children's eagerness to interact with the parent across socialization contexts (Maccoby & Martin, 1983), the quality of these expectations has never been empirically verified. In the present study, children's positive expectations were operationalized as positive and confident attempts at interacting with the parent when the parent's availability was restricted. Because more active forms of attention-seeking behaviors may reflect a child's desire to involve the parent in a joint activity, these behaviors were expected to be associated with positive child outcomes in the discipline and teaching domains. However, the quality of social behaviors was expected to be a more important manifestation of children's social expectations.

If children differ in their motivation to please the parent, then it should be possible to observe differences in patterns of children's attention-seeking behaviors when the parent is unavailable. One of the objectives was to differentiate between various underlying constructs that have been suggested to account for children's social behaviors. It is argued that though different children may exhibit equally strong motivation to interact with their parents, the quality of their behaviors may reflect different motivational purposes. From this perspective, it should be possible to distinguish between children who are motivated to interact with the parent because they fear abandonment (dependency), from children who display high levels of positive affect when seeking the parent's attention because they expect a positive parental response (social mastery).

Another important objective of the study was to determine the role of qualitative differences in children's attention seeking in explaining child responsiveness. More specifically, it was expected that children's positive social expectations would mediate the link between children's eagerness to learn from parents and committed compliance (Forman & Kochanska, 2001; Forman et al., 2004; Maccoby & Martin, 1983). Both a person-centered approach and a dimension-centered approach were used to understand the meaning behind these associations.

Method

Participants

One hundred and nine 2-year-olds ($M = 26.40$ months, $SD = 1.73$ months, 57 boys) and their primary caregivers participated in this study. Parent-child dyads were recruited in the context of a larger study on children's collaborative learning via letters to daycares and through posters and newspaper ads in the Montreal, Quebec community.

All parents spoke either English (62.7%) or French in the home and the majority of them were mothers (93.1%). The sample was predominantly from white European descent (68.6%) but also included participants from African (3.9%), Hispanic (2%), Asian (2.9%) and mixed or other (21.6%) cultural backgrounds. A majority of the primary caregivers had a university education (64.7%), and families lived in various economic conditions (12.7% below \$25,000; 18.5% between \$25,000 and \$50,000; 25.5% between \$50,000 and \$75,000; 23.5% between \$75,000 and \$100,000, and 15.7% above \$100,000).

All but three dyads attended two videotaped lab visits approximately one or two weeks apart ($M = 10.68$ days, $SD = 6.61$). In addition, camera recording problems made

the observational coding impossible for four participants (for two participants, this was during their first visit and for the other two this was during their second visit). Thus, the final sample used for the analysis included 102 parent-child dyads for which complete data were available.

Procedure

Parent-child interactions were videotaped for the 65- to 80-minute period corresponding to each session, and all measures reported were coded from the videotaped interactions. Each session included a period during which the parent was busy completing a questionnaire, as well as an imitation activity involving the parent's demonstration of six different sets of action sequences. Interactions also included parental requests for clean up after play ('Do' context) and for not touching a set of attractive toys ('Don't' context), as well as other activities not included in the current investigation. To thank children for their participation, they were given a coloring book after the first visit, and a bouncing ball after the second visit. Parents were paid \$20 at the completion of each visit. Figure 2 shows the order of all the tasks as well as their duration for each visit.

Parent unavailable. In a room furnished as a living room but including the 'temptation toys' (see below), parents were asked to complete a questionnaire about their child's temperament. They were told that this was meant to mirror a home situation when

 Insert Figure 2 about here

they were busy and had to monitor their child's behavior simultaneously. A few toys were available to the child. These toys were meant to be relatively uninteresting or too

difficult for 2-year-olds to master by themselves, and included a viewmaster, children's books, and a small puzzle. The child and the parent were then left together for 11 minutes at each visit.

Imitation activity. During both visits, parent and child participated in an imitation activity involving six distinct tasks of three, four and five steps (Appendix A). Most tasks were based on Bauer's work on memory development (e.g., Bauer & Mandler, 1992; Bauer & Hertsgaard, 1994). These tasks were initially designed to be novel to the child to avoid confounding familiarity with imitative performance. Each set of actions led to a specific goal and included a step that was irrelevant to goal attainment. This irrelevant step was always the second step in the sequence. For example, in the *tube* set, parents were asked to first put a cube covered with Velcro in a vertical tube, then scratch the side (irrelevant action), and finally take a stick with Velcro attached to it to get the cube. After receiving an instruction booklet depicting each task, parents were instructed as follows: *"Here are six different sets of actions that we would like you to demonstrate to your child. You may notice that some of the actions are odd or unusual, but it is important that you do each step in the order that is presented to you because this is part of what we are interested in. Please do each set completely and then try to have your child imitate you. When she is done or had enough, you can move on to the next set. It might also be a good idea to keep the material that is not required away from the child so as to avoid any distractions."* Using the drawings in the instruction booklet, the experimenter verbally described the first action sequence and answered any questions the parent had. Dyads were given up to 25 minutes to complete the six tasks. If all six tasks were not completed during this time frame, parents were asked to try to have their child complete them at the

end of the session. During the second visit, participants were given a new group of three action sets, as well as three from the previous visit. The order in which the tasks were presented was counterbalanced across participants. For half of the sample, these new sets were presented first followed by the familiar sets. In this study, however, only the imitation tasks that were novel to the dyads were analyzed.

Parental Rules. The Do context consisted of a clean-up task following a free-play period. Dyads were given seven minutes to clean up. Parents were asked to make the task the child's responsibility and the dyads were given a 7-minute period to clean-up. All parents were told: "*We know that typically, most two-year-olds don't really like to clean up, but try to make your child's job as much as possible, and do as you would do it at home when you want your child to do something.*" about the reticence typically shown by 2-year-olds at completing this task, but they were asked to enforce the rule as they would do it at home when they wanted their child to do something.

For the Don't context, the child was exposed to a shelf with a large number of attractive and interesting toys for various lengths of time. These toys are referred to as the temptation table (TT) (Appendix B). Before the introduction to the room containing the TT, parents were instructed as follows: "*The room we are about to enter has a shelf with toys on it. Please point them out as off-limits to your child as soon as we enter the room, even if this is not something you would typically do when you do not want your child to touch something.*" After the parent pointed to the toys and mentioned the prohibition rule, the experimenter left the room, and the dyads were left together for five minutes. During the first session, children were exposed to the forbidden toys on four occasions (introduction, snack, parent-busy and gift), for a total exposure time of 27 minutes. The

exposure during the second session lasted 32 minutes and was divided into four activity blocks (re-introduction, parent-busy, story-telling, snack).

Behavioral Coding and Data Reduction

Figure 3 summarizes the contexts and measures of the current study. Except for the coding of the imitation task, all sets of variables were coded by four different coding teams, each composed of two undergraduate students who were blind to the study hypotheses. Undergraduates were trained by a graduate student until acceptable reliability was obtained (kappas above .65, and intraclass correlation above .80). The coding of the child motivation and performance during the imitation task was completed by a coding team comprised of a graduate student and an undergraduate student. For each coding system, one primary coder was assigned the majority of the cases, with regular meetings with the second coding member to ensure uniformity of coding. Reliability coefficients obtained can be found in Table 1. Disagreements were resolved through discussion between team members.

Child Attention Seeking During Parent Unavailability: Behaviors and Quality Ratings

Children's attempts at getting the parent's attention were coded based on videotaped observations made during the parent-unavailable segment. The behavioral

Insert Figure 3 about here

codes and qualitative ratings of attention-seeking behaviors were recorded by distinct pairs of coders.

Codes for Discrete Attention-Seeking Behaviors

Children's attention bids were recorded while the parent was occupied with the completion of a questionnaire (Appendix C). The presence of a child's initiating attempt at getting the parent's attention was coded in 5-second intervals for a total of 22 minutes per child across both visits. This interval length was chosen to calculate a close estimation of the overall proportion of attention seeking displayed by children for a given parent unavailable segment. Once the occurrence of each attention bid was recorded for each 5-s interval, proportion scores were computed based on the number of intervals during which a given behavior was observed relative to the total number of codable intervals when the parent's attention was involved in the questionnaire task.

Child behaviors that were not clearly directed toward the parent were not coded as attention-seeking behaviors. To avoid a possible confound with child compliance, bids that were directed toward the prohibited toys were not coded. Additionally, because the study hypotheses required the observation of the child's reactions to the parent's unavailability, child bids that occurred while the parent ceased responding to the questionnaire and gave continuous attention to the child were not coded. For each behavioral measure, a proportion score was computed by dividing the number of intervals coded with a given behavior divided by the total number of intervals where the parent was unavailable and when no bids were directed towards the prohibited toys. Due to the infrequency of some of the codes and because the goal was to record the overall number of behaviors displayed by each child, we used intraclass correlations (ICC) to determine the accuracy of independent coders at detecting mean differences between children on each behavioral code. Although ICCs are usually the only These coefficients of generalizability yielded relatively strong values, ranging from .81 to .99 (see Table 1).

Showing, pointing, sharing. This code was given when the child attempted to get the parent's attention focused on an object or toward him or herself by showing or pointing to a target. A child who gave an object to the parent also received this code.

Interference. A child's attempt at interfering with the parent's action of completing the questionnaire was given an interference code. Interference was defined as a child's behavior that, if successful, would render the parent's task difficult, if not impossible (asking for the pen, putting hands on questionnaire).

Leaving room. Attempting to leave the room was coded as an attention bid for each interval during which the child put their hand on the door knob.

Vocalizing. In each interval, the presence of the child's vocalization directed toward the parent was recorded. Child vocalizations, such as crying, screaming, talking and singing, were included in this category. To minimize the possibility of self-talk and other forms of vocalizations not directed toward the parent, a vocalization code was only assigned when another attention bid occurred within the same 5-second interval. This coding method had the advantage of improving the objectivity of the measure but may have led to the exclusions of certain parent-directed vocalizations, especially if a related attention-seeking behavior occurred in the previous 5-second interval.

Looking. Children were observed for the number of times they looked at the parent. Looking included the child watching the parent's hands, or any attempt at making eye-contact with the parent.

Contact seeking and maintenance. The amount of physical contact children initiated (contact seeking) and maintained (contact maintenance) with the parent was coded separately. The contact seeking code consisted of any child's attempt at making

direct physical contact with the parent. Physical contact that was maintained beyond initiation was coded as contact maintenance in subsequent intervals until the child ceased contact.

Proximity seeking and maintenance. Two proximity codes were developed to measure children's proximity seeking and maintenance. A child who made a clear attempt at reducing the distance between the parent and self was coded as proximity seeking. Proximal distance was defined as a distance that would allow the child to touch the parent if desired. If the child remained close to the parent for more than five seconds, a proximity maintenance code was assigned to all subsequent intervals until the child moved away from the parent.

Qualitative Ratings

The quality of children's attempts at getting the parent's attention was coded in 1-minute intervals during the parent-unavailable segments (see Appendix D). Coders were asked to watch an interval and make a global judgement that best represented the quality of the child attention bids using five descriptive scales designed to capture the child's affect, intensity, persistence, and confidence when social bidding. A 1-minute length for the intervals was chosen because it allowed raters to acquire a global view of the quality of the child social bids, and permitted multiple ratings to be made at different time points during the parent-busy segments. All ratings were made on a 6-point scale. Once again, because the final measure of the quality of children's social behaviors was an average of the quality ratings through parent unavailable segment, ICC was used as a reliability measure to calculate coders' accuracy to detect existing mean differences between children. For the classification rating, we used the *kappa* reliability coefficient because of

the categorical nature of the variables. All the coefficients were above .85 (see Table 1). Intervals that did not involve any child attempts to obtain the parent's attention were not coded.

Positive affect. For each interval during which the child tried to get the parent's attention, coders were asked to judge the degree to which positive affect was representative of the child's social attempts. A code 0 was given when the child was dull, tired, or when the child's posture and attitude reflected passivity and boredom throughout most of the interval. A code 1 was attributed when the child participated in an activity but without clear signs of positive affect or enjoyment. When the child was energetic and deeply involved in an activity, with signs of interest and deep concentration, coders were instructed to give a code 2. A code 3 was given when the child showed clear and frequent, but low level signs of enjoyment in an activity (e.g., half smiles, brief smiles). A code 4 was given when the child showed clear signs of positive affect, sometimes smiling or laughing, although positive affect did not dominate the interval. Finally, coders assigned a code 5 when positive mood dominated the interval, with long-lasting and intense episodes of enthusiasm and great pleasure.

Negative affect. Coders were instructed to indicate the level of negative affect present when the child exhibited attention-seeking behaviors. When the child showed no negative affect, coders assigned a code of 0 to this interval. Note that although positive and negative affect were expected to be negatively correlated, the scales were distinct from each other. Thus, a child may show no negative affect, but may still be relatively low on positive affect if there are no clear signs of pleasure or enjoyment. A child who showed one brief episode of low intensity negative affect (e.g., whining, frowning) was

given a code 1 for this interval. A code 2 was attributed when the child had a few brief and non-intense episodes of negative affect or when the child displayed frustration towards objects, which was easily resolved by appropriate parental response. A code 3 was given when the child remained tired, unhappy, or unsatisfied throughout a large chunk of the interval, or when a frustration episode toward an object reached high levels of intensity, despite parental response (e.g., the child threw objects on the floor). A code 4 was coded when the child displayed at least one moderately intense (e.g., crying, screaming) and somewhat long-lasting episode (more than 10 seconds) of negative affect that was directed toward the parent. Finally, a code 5 was given when the whole interval was characterized by persistent, long-lasting and intense negative affect episodes.

Intensity. For each parent-busy segment, coders judged the overall intensity of the child attention-seeking patterns, which could range from highly passive (code 0) to highly intense (code 5). A code 0 was given when most of the child's bids were unimodal and made in a very subtle way (e.g., leaning back on the parent, looking without vocalizing). A code 1 was given when the child bids were low in intensity and when they were likely to go unnoticed by the parent (low parent-directed vocalizations, subtle pointing and looking). When the child bids were generally low in intensity except one episode when the child makes a clear attempt at getting the parent's attention, then coders gave a code 2. The child who tended to address the parent with moderately intense bids (i.e., bids that had the potential to trigger parental response) was given a code 3 for this interval. These bids were mostly multimodal and were clearly directed toward the parent (e.g., looking accompanied by vocalizing and pointing while addressing the parent). When the intensity reached above-average intensity, and a few of the child bids had the

potential to trigger a parent's immediate response, coders gave a code 4. Finally, a code 5 was given when the majority of child attempts at getting the parent's attention involved highly active, loud and intense bids (e.g., throwing an object at the parent, putting an object in front of the parent's face while loudly saying "Mommy, look!").

Persistence. Judgements of the overall persistence of the child at getting the parent's attention were made based on whether the child's attempts were maintained for as long as needed to obtain parent response. Because parental response had a role in determining whether a child bid was persistent or not, it had to be integrated in the coding of persistence. When the child bids were never sustained, were isolated and expressed only once, coders assigned a code 0. A code 1 was given when most of the child bids ceased before the parent's response, except in one occasion when the child briefly repeated the bid. When the child maintained a few bids for a brief period of time but persistence was not characteristic of the child bids during the interval, coders assigned a code 2. A code 2 was also given if the parent responded to all the bids, but these bids were made in a somewhat passive manner. If parental response was prompt and frequent, coders assigned a code 3 when the bids were active and obvious so as to trigger parent's response. A code 3 was also given when one of the child's bids was highly persistent or when nearly half of the child bids were sustained until the parent responded to the child. When several of the child bids were persistent, and long-lasting, and represented a significant portion of the interval, coders gave a code 4. A code 5 was assigned when bids were always sustained and made in a continuous fashion throughout the whole interval (e.g., the child gives an object to the parent, and keeps repeating "mommy" until the

parent responds) or when the child bid increased in intensity in the absence of parent response.

Confidence. For each segment, coders were instructed to select the code that best represented the overall confidence apparent in the child attention-seeking patterns, which could range from highly uncertain (code “0”) to highly trustful (code “5”). A code 0 was assigned when the child’s attempts at getting the parent’s attention were hesitant and/or forceful while often being accompanied by negative affect. A child who was distressed and who sought the parent’s attention for comfort, reassurance, or in such a way as to elicit a negative reaction from the parent was also assigned a code 0. When a few of the child bids were forceful or hesitant, or were meant to elicit a comforting reaction from the parent, coders assigned a code 1. A code 2 was given when one of the child’s bids appeared somewhat hesitant or was somewhat forceful. A code 3 was assigned when the child appeared to have confidence in the parent’s response: the child addressed the parent in a somewhat neutral or slightly positive tone, and exhibited at least one behavior with the potential to engage the parent in an activity. A code 4 was given when the child frequently shared activities with the parent, and actively looked for parent’s help and approval when needed, although these activities may not have dominated the interval. Finally, a code 5 was given when the child appeared to want to involve the parent in a positive activity, and these sharing attempts clearly dominated the interval. The child showed high levels of motivation to share and enjoy an activity with the parent. The child initiated and maintained repeated interactions with the parent, which were made in a highly playful, and pleasurable way.

Classification. Classification ratings were made by the team of coders assigned to the global scale ratings. These classification ratings were meant to be an overall reflection of the quality of the child's attempts at getting the parent's attention, and were also designed to validate the global qualitative measures of children's social behaviors. Coders were instructed to classify the child in one of four mutually exclusive categories based on the child's social orientation (frequently interacting with the parent) and confidence level (engaging interaction positively), yielding the following categories: "Passive-disengaged" (low social orientation, low confidence), "Object Orientation" (low social orientation, high confidence), "social-mastery orientation" (high social orientation, high confidence), and "highly dependent" (high social orientation, low confidence). Because these classification ratings were meant to determine whether qualitative measures had face validity, no further instructions were provided to the coders.

Imitation Measures

Two child measures were coded during the imitation activity (Appendix E). Children's accuracy score relative to the parent's demonstration for each set of actions was composed of two measures. A performance score was obtained by computing the proportion of the child's correctly performed actions over the number of demonstrated actions. This performance measure met satisfactory criteria of reliability (Table 1).

Ratings of the child's motivation during the imitation tasks was coded in 30-second intervals, and was meant to be a measure of the eagerness to learn from the parent. This interval length was chosen because it allowed coders to make a judgement of the child's motivation while allowing multiple ratings for each of the individual imitation tasks. Coding was based on attention, affect, cooperation, and sharing. Coders were

instructed to rate the child's motivation using four mutually exclusive codes. An interval was assigned a code of "0" when the child showed no desire to learn or cooperate with the parent, or remained uninvolved with the imitation activity for most of the interval. A code "1" was given when the child was partially involved with the ongoing imitation task, but focused mostly on the object and showed signs of impatience (trying to grab the object away from the parent). The child's overall motivation was judged to be fair but not good. A code "2" was assigned when the child's motivation was judged to be good, such as a child who waits to be given the toys and follows the parent's instructions and guidance in an appropriate manner. A score of "3" was assigned when the child showed clear signs of wanting to learn from and with the parent within a given interval. The child made eye contact with the parent and closely followed parent's demonstration and guidance. The child expressed clear signs of enjoyment and seemed delighted to share the activity with the parent. For this measure, reliability *kappa* was only marginally acceptable, yielding a value of .65 (based on 21 segments). However, the computation of the *ICC* revealed that coders were highly accurate at detecting mean differences between children and between tasks (Table 1), and percent agreement was acceptable (77% but went up to 99.8% if agreement also included one-point disagreements).

Committed compliance

Compliance was measured based on Kochanska's coding system (Kochanska & Aksan, 1995, see Appendix F) and integrated observations from both the Do and the Don't contexts on the first and second visit. The main criterion for coding committed compliance was the child's eagerness and enthusiasm in following parental directives,

without need for repeated parental demands. In both contexts, reliability *kappas* yielded acceptable value (Table 1).

Two teams of coders who were unaware of the study hypotheses coded compliance in the Do and Don't contexts respectively. In the Do context, a single compliance code was assigned for each 30-second interval of the clean up task. A committed compliance code was given when the child willingly and happily picked up the toys during most of the interval, and maintained on-task behaviors with minimal or no parental guidance. For each child, a proportion score was obtained by counting the number of intervals coded as committed compliance over the total number of intervals included in each session for the Do task. The proportion of committed compliance was then averaged across both sessions.

In the Don't context, coders first identified any instances when the child's behavior or attention was directed toward the temptation table. Compliance was coded in the following 30-second intervals until the child's attention was no longer geared toward the prohibited toys. Committed compliance was coded when the child looked at the toys but refrained from touching them, or when the child verbally repeated the rule ("no" or "don't touch") while respecting the parent's prohibition rule.

Results

Our first objective was to determine whether specific patterns of attention-seeking behaviors could be identified among children. More specifically, we hoped to identify the specific patterns of attention seeking behaviors that would distinguish children high in social mastery motivation from children who were high in dependency. This was done using two different complementary approaches; latent class analysis (LCA) and factor

analysis. We then examined whether these different patterns of responses to parent unavailability would predict children's eagerness to learn from their parents and committed compliance.

Our second objective was to determine which aspects of children's social behavior would best explain the positive link between children's eagerness to learn and committed compliance. We examined the quality and the quantity of attention-seeking behaviors, and their interaction as possible mediators of a child's positive behaviours in the discipline and teaching domains.

Determining the Structure of Social Responsiveness using Latent Class Analysis

Latent class analysis (LCA) was used to examine whether children could be classified in distinct groups based on the quantity and quality of their attention-seeking behaviors. LCA is a statistical technique that allows the researchers to discover the classification structure of cases in a data set. LCA statistically evaluates how well two latent classes describe the overall data set. Then, a 3-class model is assessed, and the model fit is compared across the two models. The same procedure is repeated until adding classes worsens the model fit. Four criteria were used to determine the appropriate number of clusters: (1) lower Akaike Information Criterion than the other models; (2) minimization of potential classification error; (3) no class constituting less than 5% of the total sample; and (4) the most theoretically-driven solution. The analysis was performed using the Mplus program. Due to halo effects^a present in some of the coding measures at session 2, only the social behaviors of session 1 were used. The four criteria yielded a 4-class solution.

^a At session 2, the patterns of correlations were somewhat different depending on whether the same person had coded both the imitation activity and the parent-busy segment. Thus, for validity purposes, we did not include this data in further analysis.

Table 2 displays the means and standard deviations of each latent class on each of the attention-seeking variables. Group 1 or the ‘low social’ children constituted approximately half of sample. These children were average on nearly all of the attention-seeking measures, but somewhat lower than average on persistence and intensity. Group 2 seemed to represent a ‘social mastery’ group, and included 17 children. These children were above average on affectively positive and confident attention bids, while showing a relatively high amount of attention seeking. The social bids from children classified in Group 3 tended to be somewhat negative, and lacking in confidence and positive affect. The number of bids in this group was somewhat average, with a slight tendency for these children to display attempts to leave the room and looking at their parent. This group seemed to represent a ‘dependent’ group of children. The last group was composed of 7 children who displayed highly negative, intense and persistent bids, while being low on positive affect and confidence. This group was the ‘highly dependent’ group. The number of bids displayed by these children was high, except for showing behaviors.

One-way ANOVAs were performed on each of the attention-seeking variables to determine how groups differed in the quantity and the quality of their attention-seeking behaviors. A main effect of group was found for nearly all the attention-seeking variables indicating that most of the variables were efficient at differentiating among the latent groups (see Table 2). Post-hoc analyses revealed that the ‘social mastery’ group had higher levels of intensity and persistence than the ‘low social’ group, $F(3, 103) = 5.84, p < .001$, and $F(3, 103) = 8.75, p < .001$. The former group displayed more showing and vocalizing behaviors than the latter group, $F(3, 103) = 4.10, p < .001$, and $F(3, 103) = 8.17, p < .001$ respectively. They were also more likely to remain in close proximity to

the parent, $F(3, 103) = 4.12, p < .001$. This social mastery group was also significantly higher than the dependent and highly dependent group on positive affect, $F(3, 103) = 4.66, p < .001$ and confidence, $F(3, 103) = 7.08, p < .001$, and $F(3, 103) = 12.57, p < .001$, while displaying lower levels of negative affect, $F(3, 103) = 7.13, p < .001$, and $F(3, 103) = 13.35, p < .001$. There was no significance difference in the quantity of attention-seeking behaviors between the dependent group and the social mastery group, except that children in the dependent group were less likely to direct vocalizations at the parent, $F(3, 103) = 4.84, p < .001$. In regards of the differences in the amount of attention seeking between the social mastery group and the highly dependent group, the social mastery group tended to express more showing and pointing behaviors, $F(3, 103) = 3.65, p < .01$ but were less likely to maintain contact with the parent, $F(3, 103) = 4.18, p < .001$.

Validation of the Latent Groups

To determine the face validity of the latent groups, we compared the group membership obtained in LCA (low social, social mastery, dependent, highly dependent) to the expected 4-group classification frequency that was part of the coding system (object oriented, social mastery, dependent, and passive disengaged). A significant pearson chi-square test revealed that the relationship between the two classification variables was significant, $X^2(9, N = 107) = 82.92, p < .001$, indicating that the frequency of cases was not distributed randomly across cells. Table 3 shows the distribution of children across groups. Most children who were classified by independent raters as object-oriented were classified in the low social group using the LCA, and so were children classified as passive-disengaged by the coders. LCA classified most children

with a dependent or highly dependent code in the dependent group. Similarly, although approximately half of the children who were coded as high in social mastery were found in the low social group of the LCA, the majority of children who were classified by the LCA in the social mastery group had been also coded as social mastery by coders.

Differences between Latent Groups on the Outcome Variables

It was expected that children who were high on social motivation due to positive expectation of parent responsiveness (social mastery) would be higher on cooperative motivation than those high in social motivation due to anxiety (dependent and highly dependent group). Thus, based on the LCA, we expected the social mastery group to be higher on eagerness to learn and committed compliance than the two dependent groups.

Child Eagerness to Learn from Parent and Imitative Performance

Mean levels of child eagerness to learn were significantly different across groups, $F(3, 106) = 10.63, p < .001$. Post-hoc analysis using the Bonferroni criterion revealed that overall, children in the social mastery group ($M = 1.92$) were significantly more eager to learn from their parents than children in the other groups, $F(3, 103) = 3.48, p < .01$ for the low social group ($M = 1.59$); $F(3, 106) = 4.24, p < .001$ for the dependent group ($M = 1.45$); and $F(3, 106) = 5.13, p < .001$ for the highly dependent group ($M = 1.13$). Children in the highly dependent group were also significantly less eager to learn than children in the low-social group, $F(3, 106) = 3.37, p < .01$. Because age was associated with children's eagerness to learn, $r(102) = .25, p < .05$, an ANCOVA was conducted to adjust for possible age effects contributing to group differences in children's eagerness to learn, $F(3, 107) = 9.58, p < .001$. Once again, there was a significant main effect for latent group on child eagerness to learn. Given the trend for girls to display slightly higher eagerness

to learn than boys, $t(102) = 1.93, p = .06$, a two-way ANOVA with gender and latent group was conducted. The analysis revealed no main effect for gender, $F(1, 107) = .29, p = .59$, nor any gender by group interaction, $F(1, 107) = .96, p = .41$.

With regards to children's actual imitative performance, a one-way ANOVA showed that there was a significant main effect of Group on how accurately children imitated their parent's actions, $F(3, 107) = 3.27, p < .05$. Post-hoc comparisons revealed a statistical trend for children from the social mastery group ($M = .76$) to perform significantly better than children from the highly dependent group ($M = .59$), $F(3, 106) = 2.68, p = .05$. There was also a trend for the mean imitative performance of the highly dependent children to be below the mean from the low social group ($M = .76$), $F(3, 106) = 2.48, p = .09$. No other difference was found between the groups on their performance scores.

Child Committed Compliance in Do and Don't Contexts

The proportion of committed compliance exhibited by children was compared across the latent groups. A one-way ANOVA showed that overall group differences in levels of compliance were marginal, $F(3, 107) = 2.30, p = .08$. Similar analyses were carried out for the Don't task, but no main effect of Group on levels of compliance were found, $F(3, 107) = 1.82, p = .15$.

Variable-based Approach to Child Social Mastery

While a person-oriented approach to the construct of child social mastery may help us identify a group of children who share common and positive ways of seeking the parent's attention, a variable-centred approach may be used to compute a social mastery dimension on which all children vary. Aside from validating the LCA solution, this

method further allows us to maximize variability in the social mastery dimension and examine its role in explaining the association between children's eagerness to learn from parent and committed compliance. First, two factor analyses were conducted for the quality and the quantity of attention-seeking behaviors respectively. For the quality ratings, three of the five ratings loaded strongly on the first factor, accounting for 80.71% of the total variance in the variables. More specifically, negative affect showed high and negative loading on the dimension (-.92), while positive affect and confidence showed strong and positive loadings on the dimension (.81 and .95, respectively). Overall, this factor solution seems to suggest the existence of a social mastery construct. To have a more complete and detailed picture of this social mastery dimension, another factor analysis was conducted with the quantity of attention-seeking behaviors displayed by children. The analysis yielded a 3-factor solution, accounting for 66.87% of the variance in the behavioral measures (see Table 4). Seven of the nine behavioral measures loaded on the same factor, which accounted for 33.51 % of the variance in all the behavioral measures. The positive loadings indicated that children who were high on this dimension tended to seek an extensive amount of attention from the parent.

The second factor, which accounted for 20.96% of the variance in the measures, was a little more complex. Behaviors such as attempts to leave the room and proximity seeking loaded negatively, and vocalizing and contact maintenance loaded positively on this dimension. That is, children who scored high on this dimension tended to vocalize frequently, and tended to maintain physical contact with the parent. Because the latter attention-seeking behavior produced the strongest factor loading, the second factor was

labelled as contact maintenance. Finally, the third factor accounted for an additional 12.40 % of the variance in the items, and consisted only of showing behaviors.

Given that these dimensions could represent different aspects of the child's social motivation, composite variables were created to see how well scores on these individual dimensions could explain the link between children's eagerness to learn and committed compliance (Table 5). An overall Quantity dimension was also created, by computing the sum of the standardized proportion scores on all behavioral measures, excluding leaving the room. This variable represented a more direct and unbiased index of the total amount of each child's attention bids.

Relations Between Social Mastery and the Outcome Variables

Table 5 shows the correlations between the composite measures of attention seeking and children's eagerness to learn, imitative performance, and committed compliance. The quality of children's attention seeking was negatively associated with the actual quantity of attention-seeking behaviors exhibited by the child: children who displayed frequent and persistent attempts at getting the parent's attention were rated low on confidence, and positive affect. Similarly, children who remained in very close contact from the parents also tended to display little positive affect and confidence, while being more likely to display negative affect. In contrast, children who displayed frequent showing behaviors were high on the social mastery dimension.

Child Eagerness to Learn from Parent

Looking at the outcome measures, children who were highly eager to learn from their parents tended to be high on the quality of their social behaviors, but low on the overall amount of attention bids directed toward the parent. There was also a positive

association between the showing dimension and the overall child motivation and performance during the imitation activity. Children who were high in eagerness to learn from parents were also high on committed compliance in the don't task.

Child Committed Compliance in Do and Don't Contexts

There was a nonsignificant trend for committed compliance in the do task to be negatively associated with the amount of attention seeking exhibited by the child, and positively associated with the quality of attention bids. Thus, children who displayed high levels of committed compliance in the Do task tended to exhibit few bids for attention during parent unavailability, but their bids were likely to be high in positive affect and confidence.

In the Don't task, committed compliance correlated positively with showing behaviors. Thus, children who displayed a high number of showing or pointing behaviors when the parent was unavailable were likely to show committed compliance in the Don't task. In contrast, children who displayed various and frequent attempts at obtaining the parent's attention tended to show low levels of compliance.

Test of the Mediation

A series of multiple regressions was performed to test whether the quality and the quantity of attention bids, as well as the interaction term between these two variables, would mediate the link between children's eagerness to learn and levels of committed compliance (Baron & Kenny, 1986). It was hypothesized that the quality of attention bids would be particularly associated with these measures of child responsiveness at high amount of attention seeking.

Condition 1

Given that gender was significantly related to the eagerness to learn, $r(102) = -.21, p < .05$, it was entered in the first step of the regression analysis to control for its effects. The first condition necessary to claim that mediation has occurred is that the independent variable predicts the mediator. Thus, a regression was performed to test whether eagerness to learn would predict attention seeking. Table 6 shows the effects of eagerness to learn on the mediators. The first condition was met for two of the three mediators. Children who were highly eager to learn from their parents tended to display high levels of social mastery, as measured by the quality of attention-seeking bids. Children's eagerness to learn also significantly predicted the interaction term between quality and quantity. To determine the direction of the interaction, a median split was computed on the quantity of attention seeking, and examined the correlations between the quality of attention seeking and eagerness to learn at low and high amount of attention seeking. For children who displayed few attention bids, there was no correlation between eagerness to learn and the quality of attention seeking, $r(51) = .23, p = .11$. In contrast, for children who sought more attention, there was a positive and strong relationship between eagerness to learn and social mastery, $r(50) = .57, p < .0001$. Figure 4 shows the interaction between the quality and quantity of attention seeking in predicting children's eagerness to learn. As can be observed, when the overall quantity of attention-seeking behaviors was high, the quality of attention seeking had a much stronger predictive power

Insert Figure 4 about here

over children's eagerness to learn, so that children who sought a lot of negative attention tended to obtain much lower scores than children who displayed a similarly large number of behaviors but who showed positive patterns of attention seeking.

Condition 2

The second condition of mediation is that the predictor be related to the outcome variable. Once again, gender was entered in the first step of the regression predicting committed compliance due to its effect on children's eagerness to learn, $r(107) = -.19, p < .05$. The second condition was clearly met for one of the two outcomes. Namely, children who were high on eagerness to learn from parents were also high on committed compliance in the Don't task. There was also a nonsignificant trend for eagerness to learn to positively predict committed compliance in the Do task.

Condition 3

To test the third and final condition of the mediational model, we carried out six regressions, one for each mediator predicting each committed compliance context. The objectives were first, to determine whether each mediator successfully predicted each compliance outcome, and second, examine whether eagerness to learn would no longer add predictive value to the equation. Given the consistent tendency for gender to be associated with both the mediators and the criterion variable, it was entered in the first step of all the regression analyses. Each regression examined the role of each attention-seeking measure in predicting whether a given mediator was a significant predictor of each committed compliance variable. Unfortunately, the third condition was not met for committed compliance in either task.

Final Test of the Mediation

We conducted a regression to examine the role of all three mediators simultaneously. Gender was entered first, and then the mediators and the independent variable were allowed to compete. Table 7 presents the results of this regression. None of the mediators predicted committed compliance in the Do task, and neither did eagerness to learn. In the Don't task, only eagerness to learn was a significant predictor of the level of committed compliance.

Discussion

The present study explored differences in children's motivation in an attempt to understand the mechanisms by which children become eager collaborators in the socialization process. We attempted to measure children's positive expectations of parent responsiveness by observing children's attention-seeking patterns during parent unavailability. Although these expectations have previously been suggested to be the source of children's general receptiveness stance to socialization (Ainsworth, Bell & Stayton, 1977; Maccoby & Martin, 1983), the current study represents one of the first direct attempts at observing the behaviors underlying these expectations in toddlerhood.

One of the objectives of this study was to characterize children's underlying motivation to please the parent. Overall, the findings suggest that the affective quality of attention bids may be important in determining the nature of children's social motivation. More specifically, two distinct qualitative patterns emerged among children who displayed frequent and numerous attention bids when the parent was unavailable. First, children who were high in dependency tended to show bids that reflected anxiety and negativity. Second, children high in social mastery tended to show highly positive and

confident bids. Only the latter group of children was also highly and positively motivated to interact with the parent in an elicited imitation task, and to some extent, in a discipline context.

This qualitative distinction was relatively consistent, even across different analytical approaches. That is, with a person-oriented approach, we identified groups of children who shared common patterns of attention seeking. A dimensional approach maximized variability among our measurements, and thus allowed measurement of the association between attention-seeking dimensions and socialization contexts. In both cases, the quality of attention-seeking behaviors was positively related to children's motivation and performance in an imitation activity. Children who showed attention bids that were confident and positive tended to display high levels of eagerness to learn from their parents, and also showed high levels of imitative performance. There was also a slight tendency for children high in the quality of their attention seeking to display high levels of committed compliance in both do and don't tasks. Thus, despite the lack of support for the mediational role of children's attention seeking, a steady association was found among the three variables, which is consistent with previous research on the link between committed compliance and responsive imitation (Forman et al., 2004; Forman & Kochanska, 2001).

One of the most robust and important findings of the current study was that the qualitative difference in children's attention seeking was particularly important when the number of bids was high. In the LCA, we found that overall, attention-seeking behaviors were frequent in both the social mastery group and the dependent groups as compared to the low social group. However, for the children who displayed numerous

attention bids, there were large differences in the quality of their attention-seeking behaviors. More specifically, children classified in the social mastery latent group showed higher levels of positive affect and confidence than the dependent groups. In contrast, although children in the low social group tended to be similar in the affective quality of their bids directed toward their parent, they tended to display less intense and less persistent bids than the three more socially-oriented groups, and also displayed fewer attention-seeking behaviors overall. In relation to the outcome variables, children in the social mastery group were more eager to learn from their parents than the low social group, while the highly dependent group was the lowest of all.

To further validate the findings obtained from the LCA, we created two attention-seeking dimensions for both the quality (social mastery) and the quantity of attention-seeking behaviors (sum of attention bids) displayed by children. While children who were high in social mastery tended to be eager to learn from parents in the imitation task, there was also a negative association between the amount of attention seeking and children's eagerness to learn. However, these associations were partly explained by the significant interaction between the quality and quantity of attention bids. When this interaction was examined, we found that for children who showed few attention bids, there was no correlation between the quality of attention seeking and eagerness to learn. In contrast, for children who displayed a large number of bids, the quality of attention That is, children who were highly eager to learn from their parents were children who were highly positive and confident in getting their parent's attention while their parent was busy, and who also showed a strong and frequent desire to interact with their parent. These results closely parallel those obtained from the LCA. This consistency across

analytical approaches brings support to the idea that both the quantity and the quality of children's attention-seeking behaviors are important in characterizing children's underlying motivation to interact with the parent. While counting the number of attention bids is insufficient to determine the type of motivation a toddler will exhibit in the face of parent unavailability, the quality of their social behaviors adds to the equation by further distinguishing between children who, although equally motivated, are eager or anxious to please the parent.

Individual differences in children's social behaviors have important theoretical and practical implications in regards to socialization. Young children's social behaviors have been the focus of diverse fields of research, including dependency, attachment, temperament, and social mastery motivation. All of these approaches offer different accounts of children's attention bids, and make claims about the underlying meaning of those behaviors. These accounts have different strengths and limitations, sometimes overlapping in their predictions and sometimes diverging. The current study attempted to address these issues by offering a direct and extensive empirical account of children's attention-seeking behaviors. The current findings suggest that social motivation constructs such as dependency and social mastery motivation can be distinguished, and that both may serve useful purposes in characterizing the underlying motivation of some children's social bids. Thus, children who are high in dependency and who are highly motivated to interact with the parent because of a fear of abandonment may exhibit frequent negative bids when the parent is unavailable. Although early dependency research found that dependent children may be more likely to imitate than nondependent children (Ross, 1966), our more specific conceptualization of dependency deviated from

these findings, with high dependency being associated with low levels of eagerness to learn, and low levels of imitative performance. In contrast, children who are high in social mastery, and who seek the parent's attention because of positive expectations of response, may show equally frequent, but highly positive and confident patterns of social behaviors. These children are more likely than others to imitate.

Thus, it appears that previous accounts of children's social behaviors deserve further examination, especially when the quality of attention-seeking behaviors is considered along with the quantity. The importance of the quality of social behaviors is not new to the literature on social motivation (Combs & Wachs, 1995), but has rarely been tested empirically. One exception is a study by Sroufe et al. (1983) examining children's attachment patterns and their relations to dependency measures. This study found that preschool children who were anxiously attached as infants were more likely to be rated as dependent by their teachers. That is, they were more likely to seek help and physical contact from the teacher, and displayed low levels of self-confidence. However, children who were securely attached were more likely than the anxiously attached children to seek teacher's attention in positive ways. These findings with preschool children are in line with the current study, and support the view that children's strong desire to interact with adults can be both anxiously or confidently driven.

Another recent study with older children has supported the idea that the need to please others may be best described as a two-dimensional construct (Rudolph, Caldwell, & Conley, 2005), and that these dimensions relate to distinct outcomes. More specifically, children who use peer approval to build positive images of themselves tend to report high levels of emotional well-being and global self-worth. In contrast, children whose self-

appraisals are based on avoiding peer disapproval (e.g., “*When other kids don’t like me, I feel bad about myself*”) experience more emotional distress, anxiety, and depression.

Thus, although little is known about the origins of this need for approval, this research points to the importance of considering both positive and negative forms of social approval seeking.

Despite the demonstrated influence of the types of social motivation exhibited by children on subsequent social interactions, the present study did not find support for the mediating role of toddlers’ social motivation in explaining the link between committed compliance and eagerness to learn from parents. This was partially due to the weak association found between overall committed compliance and children’s patterns of attention seeking during parent’s unavailability. There are several possible reasons that could account for the near absence of a relation between these two variables. The first of these reasons lies in the relation between imitation and children’s social motivation. Although we argued that children’s positive expectations would lead some toddlers to be more eager to imitate their parents than others, it is also possible that early imitation feeds into the development of positive expectations in a way that is independent of children’s levels of committed compliance. Imitation has been argued to be a contributor to mutual and enjoyable activities (McEwen, Happé, Bolton, Rijdsdijk, Ronald, A. et al., 2007; Uzgiris, 1991) but very few studies have analyzed the direction of effects between children’s enjoyment in a social interaction and imitation. In the current study, there was a clear and strong association between children’s social motivation and motivation to imitate. However, it remains to be determined whether imitation can foster the development of social expectations, rather than the other way around.

A second plausible explanation for the lack of a mediational model may lie in the existence of a suppressing variable unaccounted for in the current model. Thus, if the effect of this variable was reported, the association between committed compliance and children's social motivation would be strengthened. This would be the case if one variable was strongly associated with both imitation and committed compliance, but uncorrelated, or negatively correlated with children's social motivation. An example of this type of variable might be a temperamental dimension such as effortful control. Effortful control refers to the ability to control or inhibit a dominant behavior to execute a subdominant one correctly. Effortful control allows children to self-regulate their behaviors according to demands from their environment and has been found to be a good predictor of children's committed compliance (Kochanska, Coy, & Murray, 2001).

In discipline contexts, children are often asked to inhibit their desirable impulses, and to follow parental rules. For example, in the Don't discipline task, parents asked their children to refrain from touching a set of highly attractive toys, and in the Do discipline task, they asked the child to clean up, which also implied that the child had to stop playing with toys. Similarly, the elicited imitation task required children to sit quietly and observe their parents as they modelled the appropriate actions. Only after the parent demonstration was over were children allowed to play with the props. Thus, just as in the discipline contexts, effortful control could have been required for children to observe their parents carefully, and then perform the modelled actions. In contrast, effortful control may play no role in children's social motivation to interact with the parent. Because children high in social mastery and high in dependency both showed a relatively high and equivalent number of bids, it is unlikely that these children were exhibiting high

levels of effortful control. Although effortful control may have been more prominent among children in the low-social group, children in the social mastery group were higher in their eagerness to learn than the low-social group. Thus, this relation could not be accounted for by the temperamental dimension.

A third explanation for the lack of mediation lies in the skewed distributions of our measures of committed compliance. In the Do task, the overall level of committed compliance was quite low, with children showing committed compliance less than one quarter of the time. In contrast, a ceiling effect was observed in the Don't task, with children displaying committed compliance 79% of the time on average. The lack of normally distributed compliance variables may have made it more difficult to detect associations between variables. In this case, it may have resulted in a failure to find a significant link between committed compliance and children's attention seeking. This may consequently have led to our inability to detect a mediation effect for children's social motivation.

The current study offers strong evidence for the existence of distinct qualitative patterns of attention seeking among toddlers. In a relatively large sample of toddlers, we examined the number of bids that children directed to their parents while the parent was occupied. We also incorporated a measure of the quality of these bids, which gave us a more complete account of toddlers' underlying motivation to interact with the unavailable parent. Our confidence in these measures was supported by the use of two distinct analytical approaches, which yielded nearly identical results. Despite the lack of support for our mediational model, several of our hypotheses were confirmed in regards to the external validity of our measures of toddlers' social expectations. Because we were

interested in children's social responsiveness in general, these external variables consisted of not only one, but three distinct socialization contexts, including two discipline tasks and one elicited imitation task. Each of these contexts consisted of detailed observations of children's compliance and learning behaviors.

Despite our confidence in the observational measures of toddler's social behaviors, one limitation of the current study is the failure to include a longitudinal design. Thus, little is known about the origins of these attention-seeking patterns in infancy, or about the development of these behaviors later on in life. The absence of a longitudinal design limits the generalizability of our findings to a specific age range, and leads to an inability to detect developmental changes and to make temporal predictions about the associations between variables. The extent to which the results of the study can be generalized to the general population of children is also limited by our sample's uneven parent distribution. Given that the objective of the current study was to examine how children would react to their primary caregivers' unavailability, only parents who identified as primary caregivers were selected as participants. This resulted in our sample being constituted mostly of mothers. Thus, it is extremely difficult to verify whether the same patterns of results would be observed if the primary caregivers were fathers.

A third limitation to the current findings relates to the halo effect observed for the children's attention seeking during the second visit. More specifically, some of the data obtained from the children's second visit was coded by the same coder who coded imitation. This data was found to be significantly different than the data from other coders who were uninvolved with the imitation coding. Because of this halo effect, we decided to eliminate children's attention seeking at the second visit from all analyses, and

used only the data obtained from the first visit where patterns of correlations did not differ across coders. Although this greatly diminished the time during which children's social behaviors were observed, we ensured that the obtained results were not due to the same coders coding the two measures.

Although our concern was mostly with children's contributions to the socialization process, parent's teaching and discipline style should also be acknowledged as important contributors to children's social motivation. Thus, despite the argument that children's level of engagement will affect socialization outcomes, the larger picture is not complete without a thorough account of how parents might promote and encourage their child's desire to please in toddlerhood.

Conclusions and Future Directions

While we found strong support for the structure of children's social behaviors in toddlerhood, unanswered questions remain in regards to the development of these behaviors. Longitudinal studies are clearly needed to investigate the origins and developmental changes associated with toddlers' social behaviors, as well as to determine whether children's social motivation is relationship specific, and how this specificity may vary over time.

Despite the external validity of our measure of children's expectations of parent response, measuring an underlying construct always represents a challenge for researchers. Given the large proportion of children who were classified as having a low social orientation, it is perhaps possible that some of these children's stress levels were not affected by the parent being occupied by the questionnaire task. One ethical alternative to the current parent unavailability condition would be to involve the parent in

an activity that would require more of their continuous attention while still remaining physically present with the child. For instance, in our ongoing work, we will be asking parents to answer questions about their child over the phone rather than on paper. In addition to requiring the parent's full attention (parents must negotiate and navigate between the child and other adults), this task also allows us to observe the child's behavior when the parent interacts with another person who is not present in the room with them. It is hoped that this situation will create an improved context by which to ascertain children's true levels of expectations.

Another issue that should be investigated by future studies concerns the strong link found between children's positive motivation to interact with their parents, and their eagerness to learn from them. Because this relation is not the same as the variance shared by imitation and committed compliance, we need to discover more about how these variables relate to each other. Although it is possible that children's social expectations vis-à-vis parent responsiveness leads to more eagerness to learn from parents, future studies should also involve a test of directionality to get at the mechanisms underlying this association.

More generally, while our sample was sufficiently large and diverse to make claims about the social development of toddlers in general, further replications are necessary to determine the extent to which these findings can generalize to other populations, including high-risk samples. This will be especially important in determining whether the same classifications or characteristics are applicable to the lower end of the social motivation spectrum, for instance, in children with impaired social skills and motivation.

Discovering the factors underlying children's eagerness to learn and committed compliance will guide research to find interactive ways of promoting and strengthening children's motivation to collaborate with parents. Overall, the results of the current study extend scientific knowledge on toddlers' motivation to interact with the parent by providing an empirical account of their behaviors during parent unavailability.

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Table 1

Reliability Coefficients and Descriptive Statistics for the Study Variables

	<i>P Agree</i>	<i>ICC</i>	<i>Kappa</i>	<i>M</i>	<i>SD</i>
Attention Seeking					
Behavioral Codes^a					
Leaving the Room	.89	.96	-	.00	.01
Showing	.77	.94	-	.07	.05
Interference	.72	.96	-	.06	.08
Looking	.74	.98	-	.23	.16
Vocalizing	.83	.97	-	.36	.21
Seeking Contact	.59	.81	-	.05	.08
Maintaining Contact	.77	.95	-	.10	.18
Seeking Proximity	.58	.91	-	.02	.03
Maintaining Proximity	.89	.96	-	.63	.34
Global Codes^a					
Positive Affect	.81	.95	-	1.14	.59
Negative Affect	.76	.95	-	1.24	1.09
Intensity	.67	.87	-	2.87	.72
Persistence	.60	.88	-	2.41	.73
Confidence	.74	.91	-	2.72	1.02
Classification	.90	-	.80	-	-
Imitation^b					
Eagerness to learn	.77	.92	.65	1.58	.38
Performance	.88	-	.79	.74	.18
Committed Compliance					
Do ^b	-	-	.79	.24	.21
Don't ^c	-	-	.76	.79	.20

Note. Dashes indicate that the reliability *kappas*, and the mean and standard deviation were not estimated. *ICC* = intraclass correlation.

^aReliability was based on 20 cases. ^bReliability was based on 21 cases. ^cReliability was based 14 cases.

Table 2

Descriptive Statistics of Attention-Seeking Measures for each Latent Class

Attention seeking variable	F_{\ddagger}	Low social		Social mastery		Dependent		High dependent	
		$n = 60$		$n = 17$		$n = 23$		$n = 7$	
		M	SD	M	SD	M	SD	M	SD
Global Ratings									
Positive Affect	15.73***	1.26 ^a	.48	1.55 ^a	.69	.82 ^b	.36	.26 ^{bc}	.38
Negative Affect	111.48***	.67 ^a	.47	.88 ^a	.58	2.11 ^b	.61	4.11 ^c	.75
Intensity	39.90***	2.46 ^a	.48	3.26 ^b	.38	3.23 ^b	.58	4.29 ^c	.62
Persistence	64.84***	2.59 ^a	.37	3.50 ^b	.26	3.27 ^{bc}	.41	4.30 ^d	.55
Confidence	79.24***	2.71 ^a	.38	2.82 ^a	.45	1.90 ^b	.42	.53 ^c	.45
Behaviors									
Leaving Room	2.73*	.00 ^a	.01	.00 ^a	.00	.01 ^a	.02	.01 ^a	.03
Showing	7.35***	.06 ^a	.05	.11 ^b	.04	.08 ^{abc}	.07	.03 ^{ac}	.03
Interference	10.42***	.03 ^a	.04	.11 ^b	.11	.06 ^{ab}	.07	.16 ^{bc}	.18
Vocalizing	31.54***	.26 ^a	.15	.60 ^b	.18	.37 ^c	.14	.66	.20
Looking	5.72**	.18 ^a	.10	.27 ^{ab}	.18	.30 ^{ab}	.15	.33 ^{ab}	.30
Seeking Contact	5.91**	.03 ^a	.04	.06 ^{ab}	.06	.06 ^a	.04	.14 ^{bc}	.24
Maintain Contact	10.25***	.07 ^a	.14	.12 ^a	.17	.09 ^a	.13	.43 ^b	.36
Seek Proximity	.62	.02 ^a	.02	.02 ^a	.02	.03 ^a	.03	.04 ^a	.09
Maintain Proximity	7.14***	.54 ^a	.36	.90 ^b	.14	.60 ^{ac}	.31	.87 ^{bc}	.14

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

$\ddagger F(3, 103)$ for each dependent variable tested.

Letters in the exponents indicate significant differences among groups ($p < .05$).

Table 3

Frequency of Children in each Latent Group as a Function of Rated Classification

Latent group	Rated Classification			
	Object	Social mastery	Dependent	Passive disengaged
Low social	25	18	7	10
Social mastery	1	13	3	-
Dependent	1	-	22	-
Highly dependent	2	-	5	-

Note. $X^2 = 82.92, p < .001$

Table 4

Factor Loadings for the Behavioral Codes at session 1

Measure	Factor 1	Factor 2	Factor 3
1. Attempts to Leave	.44	-.49	
2. Showing			.87
3. Interference	.78		
4. Vocalizing	.64	.45	
5. Looking	.66		
6. Contact Seeking	.86		
7. Contact Maintenance		.69	
8. Proximity Seeking	.66	-.53	
9. Proximity Maintenance	.44		

Note. Factor loadings < .40 were not considered in the factor solution.

Table 5
Intercorrelations Among Study Variables

Measure	2.	3.	4.	5.	6.	7.	8.	9.
1. Quality factor of AS	.47**	.28**	.20‡	.00	-.36**	-.22*	.22*	-.28*
2. Eagerness to Learn	-	.55**	.16	.33**	-.25*	-.02	.25*	-.09
3. Performance		-	.16	.26*	-.18‡	.03	.23	-.01
4. Do Committed Compliance			-	.14	-.18‡	.01	.13	-.07
5. Don't Committed Compliance				-	-.22*	.22*	.21*	.06
6. Attention bid factor					-	.00	.00	.69**
7. Contact maintenance factor						-	.00	.58**
8. Showing factor							-	.41*
9. Total Quantity of AS								-

Note. AS = Attention Seeking. The Quality factor is a composite measure of positive loadings on positive affect and confidence, and negative loading on negative affect. The total quantity factor is a standardized sum of all attention-seeking behaviors, except leaving the room. Eagerness to learn and Performance were measured in an elicited imitation task.

‡ $p < .10$. * $p < .05$. ** $p < .01$.

Table 6

Test of the Mediation

Predictor	Mediator: attention seeking			Outcome: committed compliance	
	Quality	Quantity	Quantity X Quality	Do task	Don't task

First condition: Eagerness to learn predicting the mediators

.46*** -.08 .24* - -

Second condition: Eagerness to learn predicting committed compliance

.16‡ .30**

Third condition: Dimensions of attention seeking predicting committed compliance with a decrease in eagerness to learn.

a. Does the quality of attention seeking independently predict committed compliance with a concurrent decrease in the beta for eagerness to learn?

Quality AS	-	-	-	.17	-.07
Eagerness to Learn	-	-	-	.09	.34**

b. Does the quantity of attention seeking independently predict committed compliance with a concurrent decrease in the beta for eagerness to learn?

Quantity AS	-	-	-	.08	.18
Eagerness to Learn	-	-	-	-.12	.27*

c. Does the interaction between the quality and the quantity of attention seeking independently predict committed compliance with a concurrent decrease in the beta for eagerness to learn?

Quality X Quantity AS	-	-	-	.07	.05
Eagerness to Learn	-	-	-	.13	.29**

Note. AS = attention seeking.

The coefficients are the beta weights obtained from the regression analyses.

‡ $p < .10$. * $p < .05$, ** $p < .01$. *** $p < .001$

Table 7

Stepwise Regression for the Prediction of Committed Compliance Across Contexts

Predictors	<i>t</i>	<i>Beta</i>
Outcome: Committed compliance in the Do task		
Step 1		
Child Gender	.40	.04
Step 2		
Eagerness to learn	.71	.08
Quality AS	1.18	.15
Quantity AS	.14	.02
QualityXQuality	.42	.06
Overall $R^2 = .05$, $F(4, 92) = 1.03$, $p = .41$		
Outcome: Committed compliance in the Don't task		
Step 1		
Child Gender	-1.89	-.18‡
Step 2		
Eagerness to learn	2.94	.31**
Quality AS	-.73	-.08
Quantity AS	1.16	.14
QualityXQuality	1.26	.15
Overall $R^2 = .14$, $F(5, 101) = 3.32$, $p < .01$		

Note. ‡ $p < .10$. ** $p < .01$.

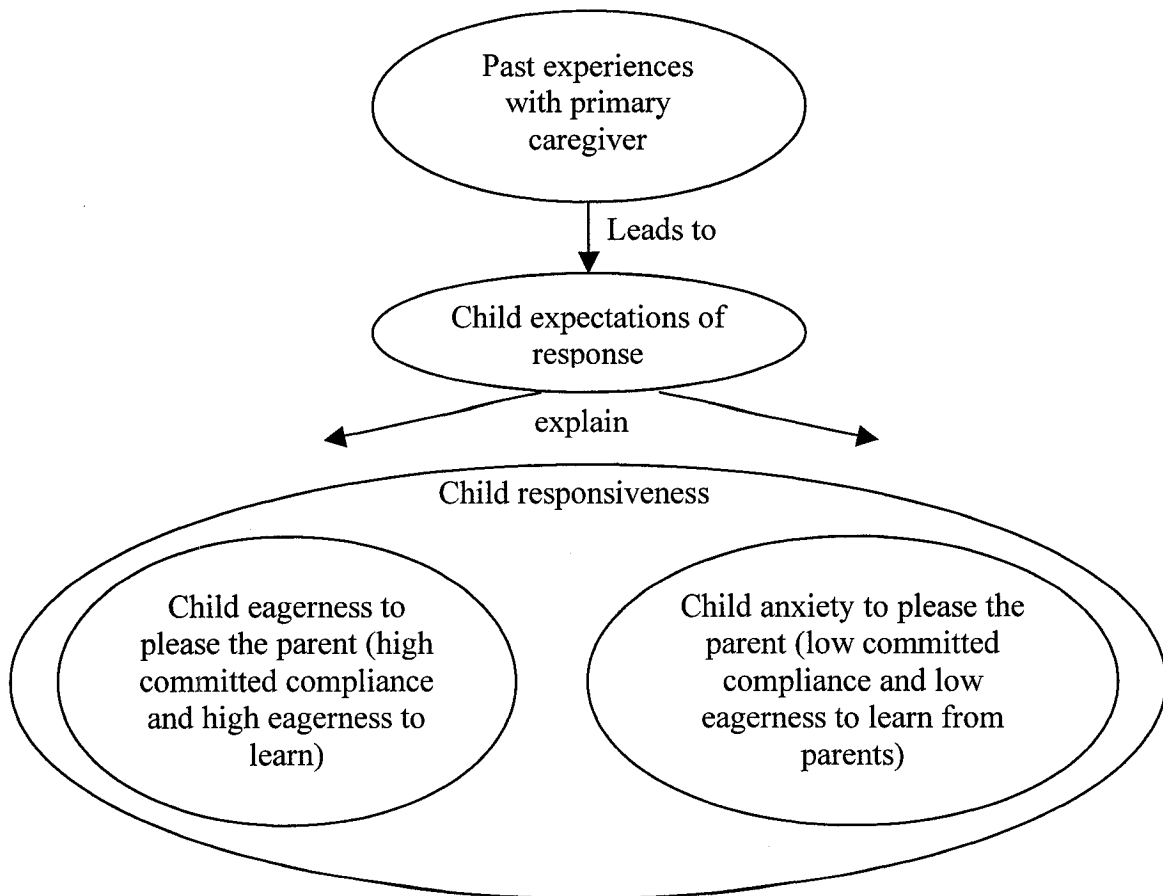
Figure Caption

Figure 1. Theoretical model.

Figure 2. Order and timing of task for each session.

Figure 3. Block diagram of the study measures and contexts.

Figure 4. Interaction between quality and quantity of children's attention seeking in predicting children's eagerness to learn from parents.



Session 1

Introduction to
prohibition rule
Don't context (5 minutes)

Imitation activity (15-25 minutes)

Free play (5 minutes)

Clean-up (7 minutes)
Do Context

Snack (8 minutes)

Block building (5 minutes)

Parent unavailable (11 minutes)

Gift (3 minutes)

Session 2

Introduction to
prohibition rule
'Don't' context (5 minutes)

Parent unavailable (11 minutes)

Block building (5 minutes)

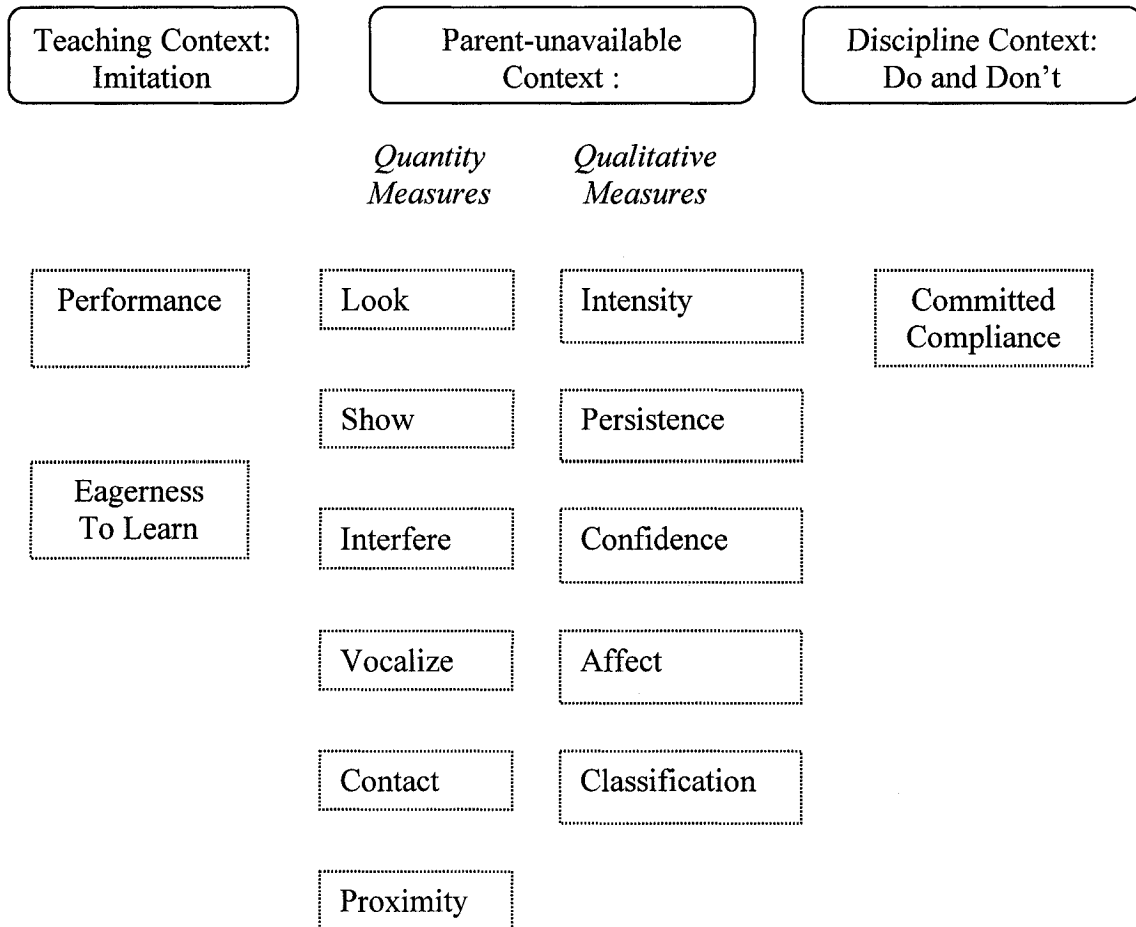
Free play (5 minutes)

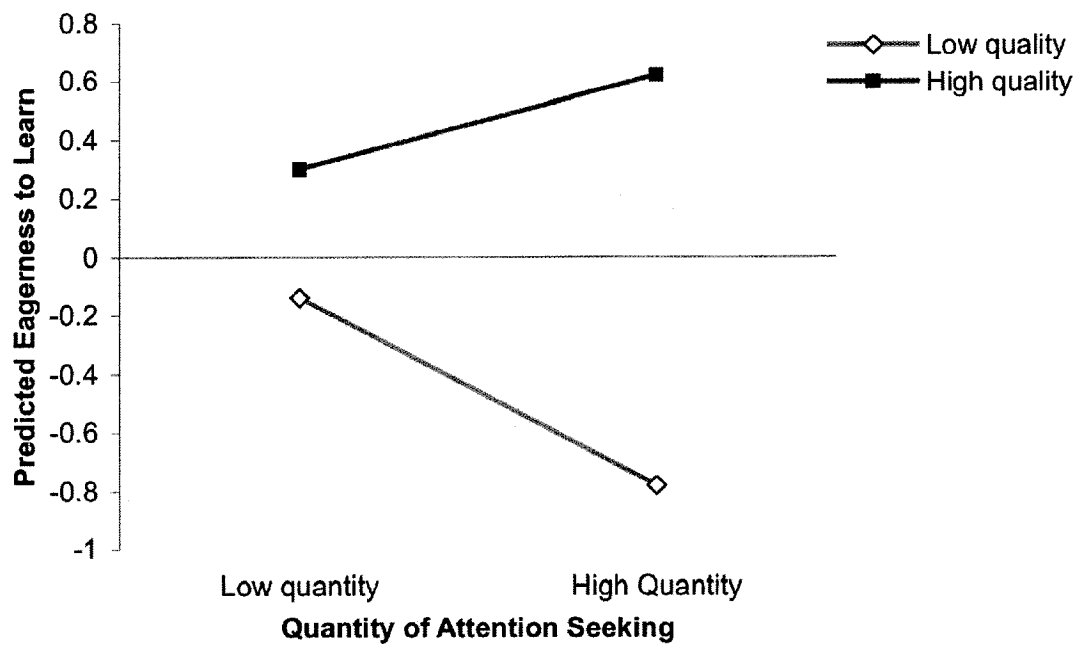
Storybook Reading (10 minutes)

Snack (8 minutes)

Imitation activity (15-25 minutes)

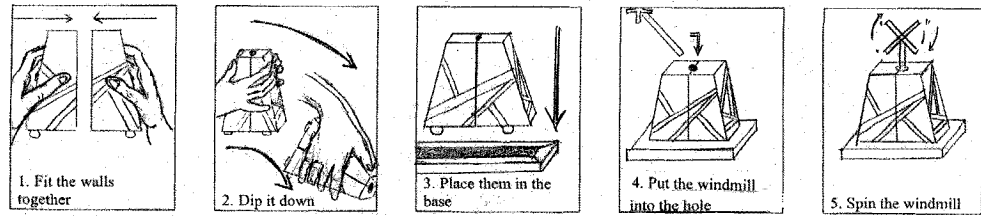
Gift (3 minutes)



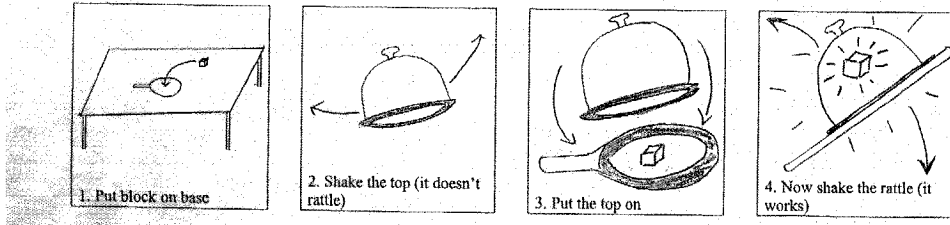


Appendix A

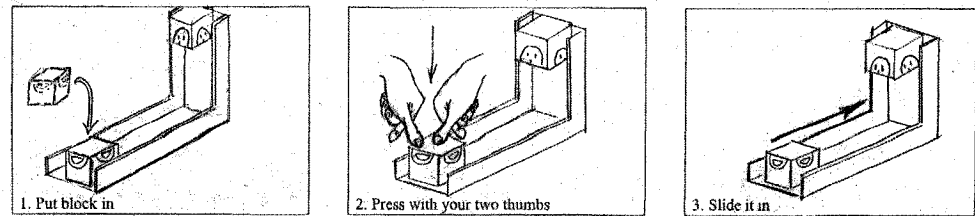
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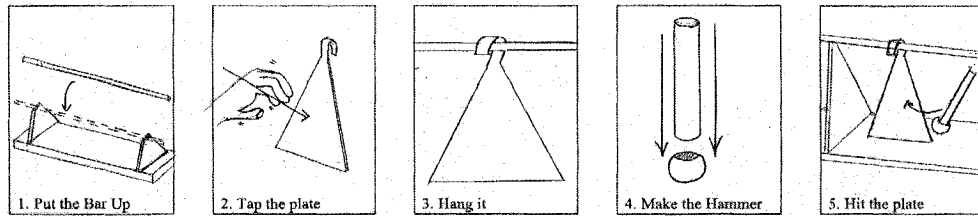
Rattle:



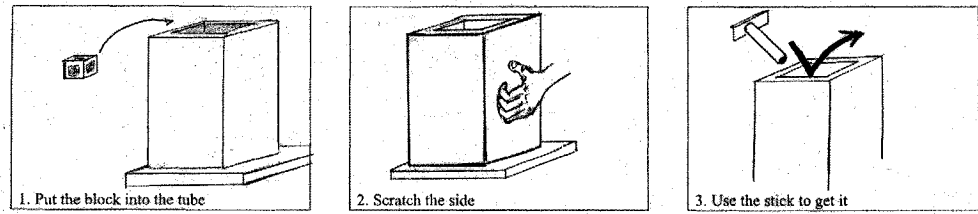
Smiley:



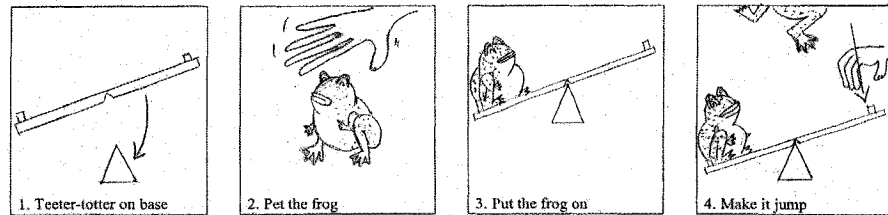
Gong:



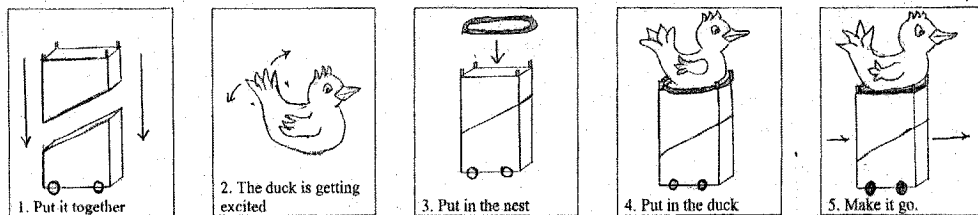
Tube:



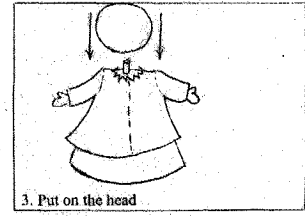
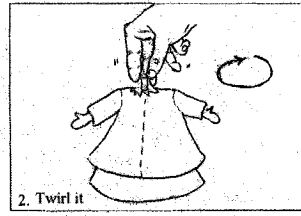
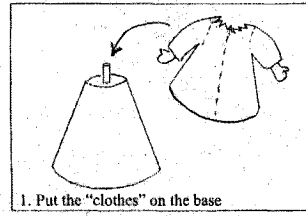
Frog:



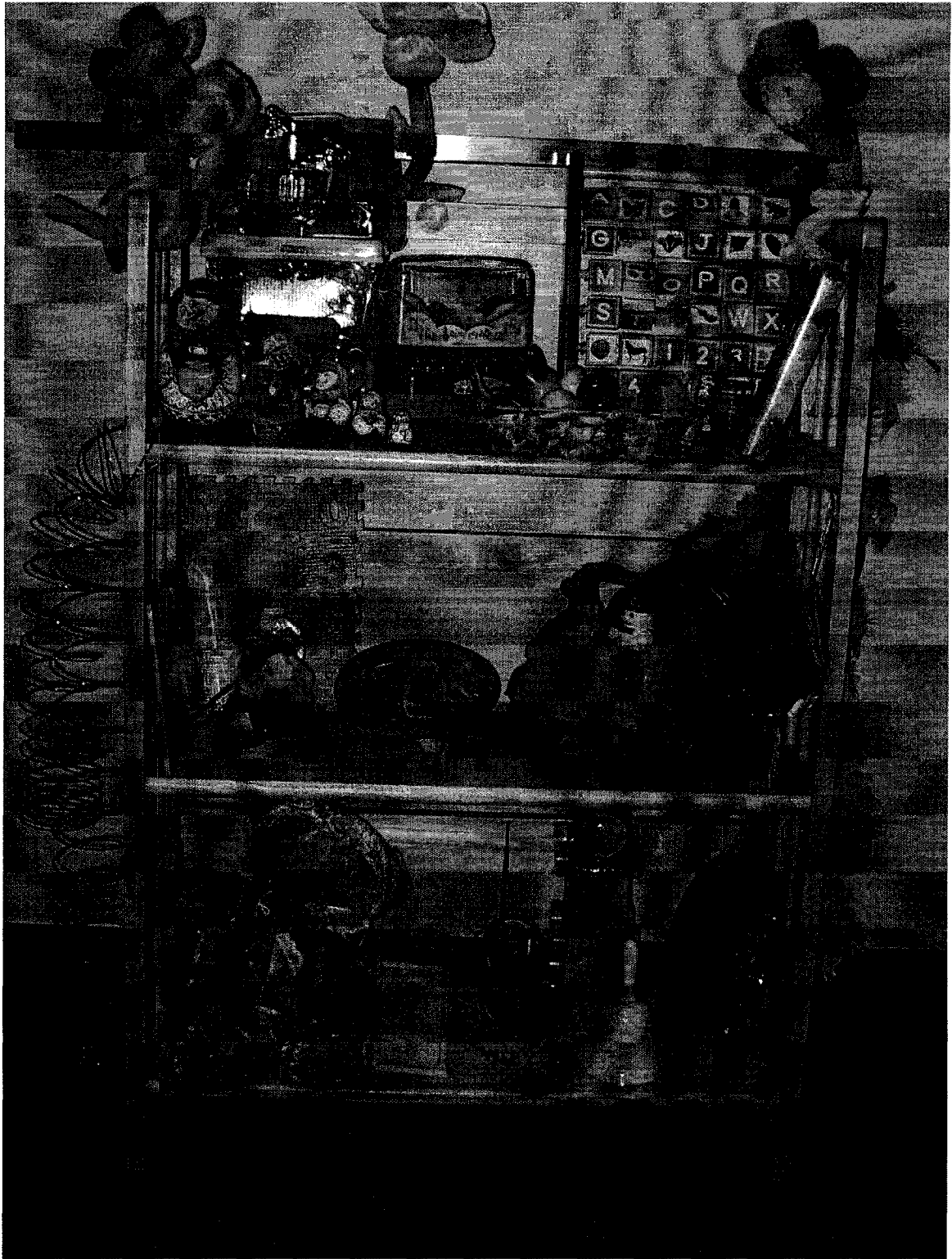
Duck:



Muppet:



Appendix B



Appendix C

Coding System:

Attention-Seeking Behavioral Codes

Introduction and Specifications

Context and Duration: The coding of attention bids takes place during the period where the parent is busy filling out the questionnaire. The coding starts when the experimenter leaves the room and says: "I'll be back in about 10 minutes" (at the syllable "'min'"), or at the last word pronounced by the experimenter, and ends when the experimenter opens the door at the end of the segment. Total coding time is 11 minutes per session, thus 22 minutes per child.

Definition of an attention bid: To be coded as an attention bid, a child's action must meet the following four conditions:

1) *Action is initiated by the child:* Child's actions that are made in response to the parent are not coded as attention-seeking behaviors. However, if the child's action is unrelated to the parent's bid, then this bid is considered to be an attention-seeking behavior. For example, the parent may ask the child "Who is that on the picture?" If the child responds by pointing to the picture, this is not a child's attention bid. However, if the child points to another unrelated object (e.g., puzzle), or asks a question unrelated to the parent's topic (e.g., "Mommy, can you help me?"), then this is coded as an attention bid.

2) *Action is directed toward the parent:* A child's behavior must be clearly directed to the parent. A child who engages in self-directed actions (e.g., self-talk during play) is not coded as a bid for attention. Also, vocalizations that are so low as to be unheard or unnoticed by the parent are not coded as attention bids.

3) *Action occurs while the parent is busy filling out the questionnaire:* The child's attention bids must only be coded when the parent is occupied filling out the questionnaire. If the parent gives up the questionnaire to provide continuous attention to the child, then the child's attention bids occurring during that period are not coded.

4) *Child bids are NOT directed to the temptation table:* Child's behavior that is related to the prohibited toys is not coded as an attention-seeking behavior. The child's actions directed toward the temptation table should be marked appropriately on the coding sheet (see exclusion codes).

Preliminary Instructions

Once a child's action is identified as a bid for attention, the coder must specify the category in which the bid falls. Any instances of a child's attention-seeking behavior must be recorded for each 5-second interval. By putting an "X" in a given cell, the coder indicates that this behavior occurred during the 5-second interval. Note that more than one behavior may be observed during one interval. For example, the child may point to an object while looking at, and touching the parent. In this case, the coder draws a "X" in the cells corresponding to the codes for "show / P", "Look", and "S contact".

Categories

- *Show /Point/Gives (Show / P):* The child points, shows, or gives an object to the parent. Pointing may not be limited to objects, for example, a child may point at the parent, or at self. On the coding sheet, indicate with an "X" whether the child does one of the following. If the child behavior persists above the 5-sec. interval, then continue coding the behavior in the next interval.

- *Interference (Interfere)*: Any child's attempt at interfering with the parent's action of filling out the questionnaire falls under this category. Interference is defined as a child's behavior that, if successful, would render the parent's task difficult, if not impossible. The objective criteria for interference is when one of the child's body part is over the questionnaire. For example, a child who takes the pen away from the parent or who physically comes in between the questionnaire and the parent is coded as interference. Note that success at interference is not a necessary condition for this code: a child who asks the parent to stop even if the parent continues the task is still coded at interference. If the child's behavior interferes with the parent's task of filling out the questionnaire, then put a mark in the cell corresponding to the interval during which this behavior occurred. Continue coding all subsequent intervals during which the child's interference persists.
- *Vocalization (Vocal)*: Any child vocalization, including talking, singing, screaming, and crying, that is directed toward the parent is coded under this category. To ensure that the child vocalization is directed toward the parent, vocalization must only occur when the child's talking is associated with another attention bid, such as looking, touching, or showing. In other words, talking that is not associated with another attention bid is not coded as vocalization. Once again, no code is given to vocalization that is directed to self or vocalization that is made in response to a parent's action (see condition 1 and 2).
- *Looking (Look)*: The child looks directly at the parent. Looking may involve initiating eye-contact or looking at the parent's hands or other body parts. This

code is given only when the coder can clearly see that the child is looking at the parent.

- *Contact Seeking (S Contact)*: This code is given when the child initiates physical contact with the parent or asks the parent to make such contact possible (e.g. “Take me Mommy”). Contact seeking is coded during the first interval in which the child initiates touch. Subsequent intervals during which the contact is maintained are coded as contact maintenance. A child who ceases contact with the parent, but who later seeks it again is coded as contact seeking when the child re-initiates touch. It is possible that the child will cease physical contact for a few seconds and will seek it again within the same interval. In this case, this interval should be coded as contact seeking, regardless of whether the previous interval was coded as contact seeking or contact maintenance.
- *Contact Maintenance (M Contact)*: The child who maintains physical contact with the parent for more than one interval is considered to be maintaining contact with the parent. Contact maintenance stops when the child stops touching the parent (e.g., the child removes hand from parent’s lap). To reiterate, physical contact that is maintained beyond initiation (contact seeking) is coded as ‘contact maintenance’.
- *Proximity Seeking (S Prox.)*: This code is given when a child makes a clear attempt at reducing the distance between the parent and self. In order to be considered in proximity from the parent, the child must be one arm-length from the parent. In other words, if the child were to stretch out her arm, she would make physical contact with the parent. For example, a child who plays on the other side

of the table moves to the parent's side. Note that proximity codes and contact codes are not mutually exclusive: it is possible that a child comes closer to the parent and also initiates physical contact. On the other hand, a child may move closer to the parent without necessarily initiating physical contact. For example, a child attempts to sit close to the parent but does not touch the parent. In this case, only a proximity seeking code would be given for the child's bid. On the other hand, if the child sits next to the parent in a way as to make direct physical contact, then both proximity and contact seeking codes are allocated.

- *Proximity Maintenance (M Prox.)*: This code is given when the child remains in proximal distance (one arm-length) from the parent and does not move away from the parent. This code is given only after a proximity seeking bid has been coded in the preceding interval and when the child remains close from the parent. Similar to the contact maintenance code, proximity maintenance stops being coded when the child moves away from the parent. A child who had been maintaining physical closeness but who moves away from the parent no longer receives a proximity maintenance. However, if the child comes back in close distance from the parent within the same interval, then a proximity seeking code is given. This may occur if the child moves away from the parent to get access to a toy and then quickly regains close proximity to the parent.
- *Leaves Room*: This code is given when the child attempts to leave the room where she is in. Coding starts when in the interval when the child puts her hand on the door knob and continues until the child stops touching the door knob.

Child Exclusion Codes

As mentioned above, a child's initiated actions are not coded if parent gives up the task of filling out the questionnaire and when the child's bids are directed toward the temptation table.

- *Parent Gives up Questionnaire (Gives up)*: Because attention-seeking behaviors must ONLY be coded when the parent is occupied, a parent who gives up the questionnaire to give full attention to the child prevents the coding of such behaviors. Coding of attention-seeking bids stops 20 seconds after the parent has given up the questionnaire and starts again when the parent goes back to it. On the coding sheet, draw a vertical line across the intervals during which the parent gives up the questionnaire, starting at the fifth interval after onset.
- *Bids Directed to Temptation Table (TT?)*: A child's actions that is directed toward the prohibited toys are not coded as attention-seeking behaviors. These may include the child pointing at or talking to the parent about the prohibited toys; directing verbal requests to the parent to go play with the toys; walking toward the temptation table while looking back at the parent. On the coding sheet, indicate instances of such behaviors by drawing a vertical line across the intervals during which the child's actions were directed toward the prohibited toys.

Appendix D

Global Ratings of Child's Responsiveness to Parent's Unavailability

Introduction and Specifications

Context and Duration: The coding of the child's qualitative responsiveness takes place during the segment where the parent is busy filling out a questionnaire. Coding starts when the experimenter leaves the room and says "I'll be back in about 10 minutes" (at the "min" syllable), and ends either at the 11th minute of coding time or when the experimenter re-enters the room (whichever comes first).

Definition of Global ratings: For each session, coders must make qualitative judgements of the child's social responsiveness to the parent's unavailability using the five scales described below. More specifically, coders must rate the quality of the child's attempts at getting the parent's attention when the parent's attention is primarily directed on filling out the questionnaire, in one-minute intervals. A bid for attention is defined as any child bid that is directed to the parent, and that have the potential to elicit a response from the parent.

Exclusions: Global ratings should ONLY be based on child behaviors occurring during parent's unavailability, and thus coders should avoid basing their global judgements on child bids occurring while the parent gives up the questionnaire. Most parents will typically give up the questionnaire for a few moments during the 11-minute segment. In cases where the parent's focus is away from the questionnaire for more than 20 seconds, coding child's qualitative bids should ceased until the parent goes back to the questionnaire. Mark the parent giving-up periods in the appropriate columns.

The global rating of the child's qualitative responsiveness to parent's unavailability should also exclude any bids directed to the temptation table. If appropriate,

indicate the time periods where the child orients toward the temptation table (see compliance coding system).

Global Ratings Scales

For each one-minute segment, coders must rate the quality of the child's attempts at getting the parent's attention using the following scales. Coders must indicate how well the description provided for each scale describes the overall quality of a child's attention bids on a 5-point scale.

Positive Affect

Positive affect dominates the child's attempts at getting the parent's attention. The child often smiles and/or laughs when attempting to draw the parent's attention. The child may direct enthusiastic bids to the parent. Vocalizations and mood are generally positive throughout the segment. On the following scale, coders must circle the number most appropriate to characterize the quality of the child's bids.

0	1	2	3	4	5
Not at all	Not Much	A Little	Somewhat	Characteristic	Very Characteristic

Negative Affect

The child's attention bids are accompanied by negative affect. The child appears sad, highly frustrated, distressed, or angry when initiating interaction with the parent. The child whines, cries, frowns, fusses, or displays other affectively negative behavior patterns.

0	1	2	3	4	5
Not at all	Not Much	a little	Somewhat	Characteristic	Very Characteristic

Intensity

For each segment, coders must select the code that best represents the overall intensity of the child attention-seeking patterns, which can range from highly passive to highly intense. A highly passive child is a child who tends to use dull, passive and uni-modality ways of getting the parent's attention (e.g., leaning back against the parent or looking at the parent without any vocalizations or affect). On the other hand, a highly intense code should represent a child who makes active attempts at getting the parent's attention. In other words, the child bids are obvious and have the potential to trigger immediate direct response from the parent. For example, the child may point to an object and shouts "Mommy, look!" or the child may climb on the table and look back at the parent.

0	1	2	3	4	5
Highly Passive	Passive	Somewhat Passive	Somewhat Intense	Intense	Highly Intense

Persistence

The child's attempts at getting the parent's attention are persistent and sustained throughout the whole parent-busy segment. Each bid is maintained for as long as it takes for a parent response to be obtained. For example, a highly persistent child may hand an object to the mom and say "mommy!", and regardless of whether the mom answers that she is busy or offers no response, the child will continue saying "mommy". High persistence can also be coded when the child bid that remained unattended changes in intensity (e.g., the child first says "mommy". The mom does not respond. The child start crying). Note that the child's bids need not to retain the same form: a highly persistent child may look at the mother for a few seconds, then make physical contact with the mother, and then give an object to her. The child may also be continuously looking at the

parent without engaging in any other forms of active attention seeking, which should still be coded as high persistence.

0	1	2	3	4	5
Not at all	Not Much	A Little	Somewhat	Persistent	Highly Persistent

Confidence

For each segment, coders must select the code that best represents the overall confidence transcended in the child attention-seeking patterns, which can range from highly trustful to highly uncertain. A highly trustful child wants the parent's attention rather than requires it. The child seems to expect a positive interaction with the parent: The child shares and wants to involve the parent in his/her ongoing activity or wants to be involved in the parent's ongoing task and appears confident that his/her attempts at getting the parent's attention will be successful. In contrast, a highly anxious child appears to have low confidence that his attempts will be successful: his requests for attention are hesitant or inappropriately forceful or odd. The child appears to need the attention rather than simply wanting it for enjoying interactions with the parent.

0	1	2	3	4	5
Highly Unsure	Unsure	Somewhat unsure	somewhat trustful	Trustful	Highly Trustful

Anchor points Global Ratings

Positive Affect

Code 0: The child's shows no signs of positive affect.

Code 1: The child's mood is neutral-negative, and expresses slight signs of boredom (e.g., whining, passivity).

Code 2: The child's mood is neutral, with no clear signs of positive affect, and may exhibit one or a few signs of negative affect.

Code 3: The child's mood is generally positive, and the child displays some signs of positive affect (e.g., smiling). Also give a code 3 if the child displays positive affect that is not necessarily directly directed to the parent, but behaves in a way that reflects his/her positive mood (e.g., a child who sings while playing with toys).

Code 4: When addressing the parent, the child smiles but somewhat lack the enthusiasm of a code 5.

Code 5: The child's mood is positive and at least one child's bid is accompanied by enthusiasm and intense positive affect (e.g., laughing while looking at the parent, showing or pointing accompanied by great enthusiasm).

** If the child doesn't make any bid for attention: Give a code if the child's mood remains neutral, and a code 2 if the child's mood expresses some signs of negative affect.*

** If the child makes only one brief bid for attention, coders must decide between a code 2 and 3.*

Negative Affect

Code 0: The child shows no negative affect.

Code 1: The child shows one episode of low intensity negative affect (e.g., whining, frowning, and boredom). Give a code if the child expresses boredom or frustration toward objects if no clear bid is directed toward the parent (e.g., the child hits the objects, bangs the puzzle pieces)

Code 2: The child shows a few episodes of negative affect. The child may express his frustration toward objects but those these actions are most often directed toward the parent (e.g., the child throws objects).

Code 3: The child displays at least one brief episode of negative affect, or the child's mood is generally negative but lack intensity.

Code 4: The child displays negative affect episodes, and may express a brief episode of negative affect but that is not maintained for more than a few seconds.

Code 5: The child's mood is generally negative, and episodes of prolonged and intense negative affect are common. (e.g., crying, screaming accompanied by negative affect).

**If the child doesn't make any bid for attention, then give a code 0.*

** If the child makes only one brief bid for attention, give a code 0 if the bid is not negative; give a code 1 if the bid expresses slight frustration or boredom; give a code 2 if the child's bid expresses clear negative affect.*

Intensity

Code 0: All of the child's bids are unimodal, and are made in a very subtle way. For example, the child leans back on the parent or looks at the parent with no vocalization. Note that self-directed vocalizations do not count as attention-seeking attempts. In cases when the direction of vocalization is ambiguous, coders must only look at vocalizations that are accompanied by another form of attention-seeking (e.g., looking or showing).

Code 1: Child bids are low in intensity and are likely to go unnoticed by the parent. The child may vocalize with a low voice, or point at something, without looking nor talking to the parent.

Code 2: Child bids are generally low in intensity except one episode when the child makes a clear attempt at getting the parent's attention. When the child makes only one bid for attention, and this bid is somewhat low in intensity, then give a code 2.

Code 3: The child seeks the parent attention by making somewhat intense attempts (e.g., multimodality actions such as looking + vocalizing), and have the potential to trigger the parent immediate response. There is no highly intense episode. If the child only makes one bid, but that this bid represents a clear attempt at getting the parent's attention, then give a code 3.

Code 4: The child makes obvious and active bids for attention but does not exhibit any high intensity episode like in a code 5. Give a code 4 if the child expresses at least one intense bid or multiple average intensity bids.

Code 5: The child makes active and loud attempts at getting the parent's attention. Bids are obvious and have the potential to trigger an immediate response from the parent. Give a code 5 when the child's bids, with at least one attempt that is highly loud and/or intense (e.g., pushing the parent, screaming, jumping on the parent)

Persistence

Code 0: The child's bids are never sustained. The child bids are spaced out, and expressed only once, even in the presence of no response.

Code 1: Most of the child's bids are spaced out and expressed once, except in one occasion when the child persists in his attempt.

Code 2: A few of the child bids are maintained until parent response, but the majority of the segment is characterized by isolated and unsustained attempts at getting the parent's attention. If the parent responds to every bid, but the child bids are low and made in a passive fashion, then give a code 2.

Code 3: The child's bids are most often sustained until parent's response, although

If the parent responds to every single child bid, but the child's bids are obvious, give a code 3.

Code 4: Most of the child's attempts are maintained until the parent gives attention to the child. The child repeats bid for attention for several occasions, but not in all instances.

Give a code 4 if the child persists when facing parent's threat or disapproval if this occurs on one occasion.

Code 5: The child bids are persistent and sustained as long as it takes to get the parent's attention. For example, the child repeats "Mommy", until the parent responds. Give a code 5 when the child repeats a bid or when the child continues to try to get the parent's attention using different means (e.g., the child looks at the mother for a few seconds, then makes physical contact with the mother, and then gives an object to her).

Confidence

Code 0: The child's attempts at getting the parent's attention are hesitant and/or inappropriately forceful, and are often accompanied by negative affect. The child wants the parent's attention for reassurance and comfort rather than wanting to share an activity with the parent. The child appears distressed and/or angry, and his/her behaviors reflect this state (e.g., the child tries to steal the pen from the parent in an aggressive manner, the child throws something at the parent).

Code 1: The child's bids are sometimes hesitant and/or forceful and may sometimes be accompanied by negative affect. Some behaviors have the potential to elicit a negative reactions from the parent or reflect the child's anger, distress, or frustration.

Code 2: The child seems somewhat uncertain about getting the parent's attention. On at least one occasion, the child seeks the parent's attention in a negative way, that is, by

making a bid that is likely to elicit a negative reactions from the parent. In cases when the child makes only a few bids for attention, but at least one attempt is made in a way so as to elicit comfort and/or a probable negative reaction from the parent, then give a code 2.

Code 3: The child appears to have confidence in the parent's response. The child's affective tone when addressing the parent is neutral or slightly positive. The child generally wants to involve the parent in a sharing activity.

Code 4: The child has confidence in getting the parent's attention. The child tends to make bids that are meant to involve the parent in an activity, and tends to make contact with the parent in a positive way, but not as intensely as a code 5

Code 5: The child wants to involve the parent in a positive activity. The child wants to share and enjoy an activity with the parent. The child initiates repeated interactions with the parent, which are made in a highly playful way.

If there is no clear bid for attention, give a code 3 when the child remains actively occupied with objects and give a code 2 if the child remains mostly passive during most of the interval.

*Do not code the interval when:

Parent gives up the questionnaire: If the parent is not filling out the questionnaire, from the start of the interval, and for 20 consecutive seconds, and continues for at least 45 seconds, do not code this interval.

Temptation Table: If the child behaviors are directed to the temptation table for more than 45 seconds, then do not code this interval.

Appendix E

Coding System:

Child Imitation Performance and Eagerness to Learn

Introduction

The coding of the child motivation and imitation performance takes place during the imitation activity, which may last from 15-25 minutes. Note that the child behaviors during transition periods (when the child and the parent change from one activity to the other) are not coded. Thus, any given imitation task starts when the parent takes out the first object necessary for the task, and ends with the first parental prompt for the end of the current task (e.g., the parent says to the child “All done?” or “Let’s try another one.” Or the parent may take the objects away from the child to put them away). For each imitation activity, coders must indicate which activity has been performed in the margin of the coding sheet. The child motivation and performance are recorded separately on the coding sheet.

Child Eagerness to Learn

Introduction

The child motivation is coded every 30 seconds. Intervals that are less than 15 seconds are not coded.

For each interval, coders must give a motivation code using the following 4-point scale. Coders must select the code that is most appropriate to the motivation of the child. Note that the following descriptions are guidelines and that coding each interval requires an overall judgment of the child motivation. Thus, although the child may not demonstrate a constant and equal level of motivation throughout a given interval, coders

must use the code that is the closest approximation of the overall quality of the child motivation to learn from, and with the parent for that interval.

Global Ratings

0 = The child is clearly not eager to learn from the parent. The child does not want to cooperate and share with the parent. The child may walk away or run around the room and does not get involved with the ongoing activity.

1 = The child is partially involved with the imitation activity but she focuses mostly on the object. His/her motivation to share with the parent is fair, but not good. The child is not really looking at the parent nor is he/she very involved in the learning process. The child may show impatience and/or may ignore the parent's instructions and guidance.

2 = Child overall motivation to share and collaborate with parent is good, but not great. The child is attentive but is mostly oriented toward the task and not so much with the parent. The child is somewhat responsive to mom, but lacks shared enthusiasm of a code 3.

3 = The child is clearly eager to learn from parent. There is a "spark" that seems to occur between the parent and the child. The parent and the child share enjoyment together. Positive affect clearly dominates the interaction.

Child Imitation Performance

Introduction

The coding of the child imitation performance begins with the child's first opportunity to complete all actions in a given task, and ends when the parents moves on to the next task (regardless of interval length). Coders must record all child imitative actions while

keeping track of the order in which these actions are done. Because 'imitation' implies that the child must reproduce an action that was previously performed by the parent, coders must also keep track of the actions that the parent demonstrates.

Performance Coding

When a child does an imitative action, coders must write down the letter corresponding to the appropriate action in the sequence for the particular imitation task (action 1 = A; action 2 = B, action 3 = C, etc.). For example, if the activity is 'muppet' and the child first puts on the head, then puts on the dress and then turns the base, coders must write down *C A B* in the following order. Note that letters are used in replacement of numbers to avoid confusion with the scoring of the performance for a given activity.

Performance Scoring Points

A child gets 1 point for every imitative action performed correctly, regardless of the sequence in which the action occurred. When an action is incomplete or performed partially, the child gets 0.5 points. Partial credits are given when the child verbalizes the action without doing the right action (e.g., the child says "pet the frog" but does not actually pet the frog), or when the child does an action in a way so as to prevent the proper continuation of the ongoing imitation task. For example, the child may put the two walls together to make the windmill, but one wall is upside-down. Coders must indicate incomplete actions by putting a parenthesis around the letter corresponding to the partial action (e.g., (A)).

The child does not get performance points during the parent teaching period. For example, if the activity is 'windmill', and the parent puts the wall together (action A), put them in the base (action C), puts the windmill in the hole (action D) and spins the

windmill (E). Then the child spins the windmill (action E), the child does not get any points. In cases when the parent demonstrates one action at the time but the child is not given all the material at any point, then the child gets a performance score of zero.

Coders must indicate child actions occurring during the teaching period by drawing a bar across the letter corresponding to the action (e.g., \overline{E}).

When the child does an action after being prompted by the parent, the child still gets full performance points for this particular action. Coders must indicate parent prompts by putting a vertical line (e.g., |) right before the prompted action. For example, if the child does *A*, and then is prompted by the parent to do *B*. After the prompt, the child does *B* followed by *C* without prompting. Coders would therefore write down A|BC.

Overall Performance Scores

Once all the child imitative actions have been recorded, coders must compute two performance scores for each imitation activity.

Performance Total

= # actions performed in an activity

total # of demonstrated actions

For example, let's suppose the activity is 'Tube'. The parent puts the block in the tube (action A), scratches the side (action B), gets the block with the stick (action C), and then hands the object to the child. The child does action *A* and *C*, but not *B*, so the child has a performance total score of 2/ 3.

Appendix F

May 2, 2000

Parent-Child Study

Child Compliance/Mother Discipline Project

Coding/Entry

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PART 1: “DO” (CLEANUP)

Child Compliance Codes

Notes: If child gets **Time Out (Code 1)**, mother necessarily has to get **either No interaction (Code O) or Social Exchange (Code 1)**. It is possible, however, for mother to get **Code 0 or Code 1**, but for the child to get a compliance code (for example, mother absorbed in a questionnaire but child cleaning up toys energetically, **Committed Compliance**, or, if shaky and wavering, **Situational Compliance** – for older children mostly), but not a noncompliance code.

For Codes 2-6, whenever the child’s verbal and actual behavior are contradictory, go with the latter.

Examples

Child responds sweetly “Yes, I will clean up”, but continues to play with toys and does not begin to clean, code passive noncompliance.

Child argues and protests, but continues to clean up nevertheless, code either committed or situational compliance, depending on the usual cues, such as the quality of the cleaning behavior.

Time Out (Code 1)

There is no on-task behavior on the part of the child. The mother may be aware of it, but she does not attempt to reorient the child back to the task; she may even be participating in play. In other words, mother has suspended the cleanup for the duration of that segment. Then, leave all the physical intervention codes blank.

Examples

An exchange that may have started out as an indirect route to get the child to clean up may turn into an educational exchange, e.g., mother is preoccupied with showing the child an object and trying to teach him/her the name of it. She becomes clearly more interested in the child's cognitive/language competence than in putting the toys away.

Mother is happy with the progress and uses time out as a positive break before the rest of the toys get picked up (e.g., reads book).

Mother uses time out to smooth uncooperative behavior, which may potentially become aversive and defiant (e.g., a brief break for affection, cuddling).

Mother is unaware of the off-task behavior; she attends to her own agenda and does not try to reorient the child to cleanup; she could not care less.

Mother has given up on trying to get the child to comply and has started cleaning up herself.

Mother picked up or engaged the baby after all the toys have been put in the basket. Often, mothers do that to prevent the child from going back to the basket. If the baby manages to go to the toys and get involved with them, you may need to resume the coding of cleanup after the string of Codes 1 (Time Out).

In sum, **Code 1, Time out**, is coded give child off-task behavior for a substantial portion of the segment and the total absence of maternal directives to clean up.

Committed Compliance (Code 2)

Committed compliance: Internalized and wholehearted behavioral compliance to the clean-up task. The maternal agenda functions as child's own and the child embraces/endorse the directive. When there is behavioral compliance, but

a lack of wholehearted endorsement of the maternal agenda, this will most likely be coded as Committed, Negotiated Compliance (see criteria for Code 2N).

Note: It is important to note the overall tendency of the mother in giving directives/ prompts regardless of the child's behavior. Some mothers continue prompting even if the child is actively putting toys away; some mothers reduce prompting when child is complying. This general tendency of the mother must be considered before a code is assigned.

Child stays on task with very few or no maternal directives. In other words, the child complies to the general directive through most of the segment. Child does not appear to need immediate maternal interventions/prompts to maintain task orientation. Clearly, the child has accepted the task as his/her own, and is actively involved in picking up toys.

With 13-15 month olds, however, it is often unrealistic to expect that they will keep up with the work with mother uninvolved. Committed compliance may be coded even if mother continues to be engaged with the child, for example, continues to clap or sing to keep the child's spirits up. Sometimes, mother is handing consecutive toys to the child to be put into the basket. Signs of committed compliance at this age include:

- child eagerly snatches toys from mom and throws/puts energetically/resolutely into the basket without signs of attention wavering.
- child beams and/or otherwise expresses positive emotion upon putting a toy(s) into the basket (claps, smiles).
- child picks up the toys that have not been picked up by the mother and throws them into the basket.

- overall, child appears oriented to the mother and to the chore, appears to feel that the cleanup is an interesting task, is intent on the activity, his/her attention does not slip away throughout most of the segment. Typically, the child appears positive and accepting of the task.

Other examples (some from older age)

When finished with picking up one set of toys s/he spontaneously seeks out another set of toys without immediate prompting by the mother.

Sometimes, child is cleaning up and appears clearly task-oriented. Yet, the mother continues to prompt. The coder feels, however, that even if mother ceased prompting, the child would nevertheless continue to clean up; then also use Code 2.

The child may maintain on-task behavior at a slow pace and may start counting the toys, or comment on different colors. These are not necessarily distractions on the part of the child as long as the flow of the cleanup is maintained.

Sometimes child is working but for a short while gets distracted. It is important to distinguish whether the distraction came from the mother (question, request, comment) or from the child (child got interested in a toy and ceased to clean up). If the distraction came from the mother, for example she began to question the child about the name of a toy, child should still get credit for Code 2. If the child's attention wavered spontaneously, Code 3 is more likely.

Committed, Negotiated Compliance (Code 2N)

For children 3 years old or older, behavioral compliance to maternal prohibitions was sometimes accompanied with verbal protestation. In this situation, it is clear that the child has not completely internalized the prohibition and attempts to change or influence

their mother's decision, but reluctantly continues to clean-up the toys. It appears, however, that the child is complying to the prohibition mostly because their mother is in the room, yet the child's behavior is not sustained by maternal control as in Situational Compliance (Code 3).

This code is given when the child's behavior conforms to the criteria for committed compliance, but he or she continues to protest or argue the maternal agenda to clean up the toys. Thus, if the child tries to negotiate cleaning up the toys two or more times during a 30-s segment, code this with Committed, Negotiated Compliance (Code 2N), as long as the child's behavior is compliant. This negotiation can take the form of a complaint regarding the clean-up task. For example, the child may be somewhat whiny or frustrated, saying "I'm tired. I want to go home" or "I didn't dump the toys out; the lady should pick them up. She spilled them." Any attempt to influence the mother so that it is not the child's job to pick up the toys ("Mommy, you help me clean up.") qualifies as 1 attempt. Note that these attempts are typically accompanied by displays of negative affect.

At times, the child may act in a compliant way, reluctantly, by tossing the toys into the bin but purposefully missing the bin with an intent to slow the process of clean-up. Other behavioral protestations may include actions such as kicking the toys around, pushing the toys around, running around the room without attending to the toys, or taking toys out of the bin that have already been put away. These behaviors will most likely be coded with situational compliance code or a noncompliance code. If the child does engage in this type of behavior (three times in one segment) and does not appear to "wholeheartedly" embrace the maternal agenda, yet stays on task for the majority of the segment, code his or her behavior with Committed, Negotiated Compliance (Code 2N).

Situational Compliance (Code 3)

Receptive to maternal agenda, but not fully internalized; Cooperative in principle, but responsive only to the immediate maternal control; Work sustained by the mother's control; Attention slippages common; Half-hearted

Child appears generally task-oriented and willing to comply, but needs prompting occasionally and/or frequently. Child may tend to get distracted without frequent prompts. The distractions do not come from the mother, but result from the child's shifting attention to play or another activity. There may be some reluctance, but no overt resistance, to accept the cleanup agenda. It may appear that the child's patience is running out, but s/he is trying to be compliant. Child may look as if s/he would rather do something else, and compliance is half-hearted and lacking the positive motivational flavor typical for committed compliance.

Mother may attempt to turn the cleanup into play in order to elicit cooperation by saying, for example: "Let's make baskets", or "Let's see who can put more toys away", etc. Child may then start picking up as part of play. Child is cooperative and good-natured, receptive to mother's interventions, but the cleanup is not his/her genuine agenda. Thus, Code 2 may not be given.

Typical for situational compliance are attention slippages; for example, while carrying a toy to the basket child begins to play.

Also, if the mother continually hands the toys over to child to be thrown to the basket, and child throws them in, but somehow his/her heart is not in it, and as soon as mother slows down or stops, s/he also stops, code as situational compliance.

Passive Noncompliance (Code 4)

Passively reluctant to accept maternal agenda; Not cooperative; Non-receptive to maternal agenda; Ignoring directive

Child does not comply unless prompted. When prompted, the most likely response is to ignore the directive. Most typically, child may either continue to play in silence, talking to him/herself (goes “deaf”) or may attempt to initiate some other conversation; may talk about the toys, lie on the floor, etc. The behavior is irrelevant to the task and the content of maternal directive. If there is any minimal compliance, it is reluctant and resistant to prompts. In 13-15-month-olds, getting toys out of the basket is coded as passive noncompliance (unless with saying “No” non-aversively, then overt resistance, or with anger, then defiance). Trying to leave the room is also considered passive noncompliance (if without anger). Code 4 corresponds to passive noncompliance in other systems.

In some segments, the baby will put some toys in the basket and take some out. To decide between some form of compliance vs. noncompliance, consider whether more toys went in or out (unless it is clear that the child spent much more time doing one of these things).

Overt Resistance (Code 5)

Overtly rejecting maternal agenda; Non-aversive protest present

Child does not comply unless prompted. If prompted, the most likely response is overt refusal to clean up, and/or negotiation (in a non-aversive manner). Code 5 encompasses refusals and negotiations, as defined in other systems. Code 5 is not used if there is any trace of anger or affectively aversive expression in body language, tone, etc. Then, Code 6 (defiance) is appropriate. Shaking head (“no”) is also resistance.

Note: Overt resistance rarely lasts through most of the segment (thus, using the criterion of predominant response would yield extremely low rates of occurrence).

Therefore, the requirement that a behavior must last through most of the segment is relaxed. If an overt oppositional response is clearly present and articulated, or happens more than once in a segment, and there is no substantial compliance (thus clearly child is rejecting the agenda), then the segment should be coded as overt resistance. If there is a brief and poorly articulated behavior (e.g., shakes head) in the overall context of another behavior, (e.g., passive noncompliance) use the other code as predominant.

Other examples (some for older age)

“No, I told you I don’t want to clean up”; “Let’s play bowling first”; “It’s not my job to clean”; “You do it”; “You clean up”; “No, thank you”.

Defiance (Code 6)

Defying/rejecting maternal agenda; Protest/resistance accompanied by anger

Child does not comply unless prompted. If prompted, the most likely response is to resist by defiance, with poorly controlled anger, overt expression of frustration in body language, voice, etc. The child may start crying, whining, kicking toys around, having a temper tantrum, doing exactly the opposite of what s/he has been told. Basically, any resistance behavior, if accompanied by anger or other negative affect, is coded as defiance. Trying to leave the room or taking toys out of the basket, if accompanied by fussing or whining is defiance. Code 6 is often defined as defiance or whining in other systems.

Note: Like overt resistance, defiance rarely lasts through most of the segment (thus, using the criterion of predominant response would yield extremely low rates of defiance).

Therefore, the requirement that a behavior must last through most of the segment is relaxed. If an angry, oppositional response is clearly present and articulated, and there is no substantial compliance (thus clearly child is rejecting the agenda), even if brief, the segment should be coded as defiance. If it is not particularly strong (e.g., mild whining, fussing), it needs to last for a predominant part of the segment to be coded. If there is a brief and poorly articulated behavior (e.g., low intensity whine, fuss) in the overall context of another behavior, e.g., passive noncompliance, use the other code as predominant.

Note: IF child gets **Time Out (Code 1)**, mother necessarily has to get **either No interaction (Code 0) or Social Exchange (Code 1)**. It is possible, however, for mother to get **Code 0 or Code 1**, but for the child to get a compliance code (for example, mother absorbed in a questionnaire but child cleaning up toys energetically, **Committed Compliance**, or, if shaky and wavering, **Situational Compliance** – for older children mostly), but not a noncompliance code.

Note: If mother's control is coded as **Code 0 or Code 1** (No Interaction or Social Exchange), maternal physical intervention codes are left BLANK. If mother is controlling the child using exclusively verbal techniques, use **Code 0 for physical (No Physical)**.

PART 2: "DON'T" (PROHIBITED TOYS)

A system that combines an episodic and time-interval approach is employed to capture the same categories: child compliance/noncompliance, global style of maternal control/ influence, and maternal physical interventions. **An episode begins when the**

child looks at/points/approaches/talks about/touches/plays with the objects on the TT, or when the mother comments about the TT (here, we assume that the child's attention will quickly follow). Once an episode starts, each 30-sec segment is coded. Thus, an **episode** consists of one or more **30-sec segments**. The first episode coded should be the initial prohibition given by the mother upon the entry into the Living Room.

Episode Onset

If the child looks only, without touching or clearly approaching TT, an episode is coded only if s/he also ceases the ongoing behavior and reorients to TT. If the child looks in a fleeting manner, and continues with the ongoing behavior without “missing a beat” (e.g., on the way to the “legal” shelf gazes briefly at TT without pausing), then it is not considered an episode. Record the start time on the coding sheet, and set the timer.

If the child and/or mother are talking about the temptation table, but not looking at it, code this as being oriented to the table. How to decide whether or not to mark an episode's onset is borderline cases (mostly when the child looks in a direction that is not clearly that of TT, but we suspect that s/he may be looking there):

- (1) Use the available cues from the mother. If she says, for example, “No, no”, or similar, or if she rolls her eyes as if anticipating a confrontation, code as the episode's onset. If mother gives no signal of this kind, the probability of coding an episode is lower. Also, if mother defines for us the child's attention focus as other than TT (e.g., “yes, nice Ernie”), do not code an episode.
- (2) Observe the child's body. If, for example, s/he continues to drink and swing his/her feet, or similar, without any sign of slowing down or ceasing the

ongoing movement, the coding of an episode is less likely. If any of such signs occur, the coding of an episode is more likely.

- (3) If a child takes some of the toys from the table and places them in another position, code any look or glance at these “misplaced” toys as being oriented to the TT.

Note: All the above conventions should also be used in deciding whether or not an episode continues in each consecutive 30-sec segment.

Episode Offset

Once the child reorients away from the TT at any point during a given segment, and does not return his/her attention/activity to TT by the end of that segment, observe the next 30-sec segment to confirm whether the child’s reorientation indeed continues, or whether s/he returns to TT. If the child does return back to the TT, the coding of the episode continues. If the child does not return, and remains reoriented to a new activity, then that additional 30-sec segment is not coded, and the episode is considered completed at the end of the previous segment.

Each segment is coded on the basis of the predominant quality of child’s and the mother’s behavior. However, there are a few conventions that must be noted. The judgment of segments when the behaviors escalate is based on the behaviors during the last half of the segment. For example, if the child shifts from Code 2 (committed compliance) in the first 5 seconds to gentle touch until the 10th second, and finally shows Code 5 (overt resistance) for the last 20 seconds then s/he receives a code of overt resistance. If the child shifts continually between two categories then assign the higher category. For example, if the child shifts between situational compliance and passive

noncompliance throughout the segment then the child receives a code of passive noncompliance.

Child Compliance Codes

Other (Code 1)

This is a very rare code, used if the child's attention is on TT (temptation table) and mother actively suspends the prohibition; gives permission to touch the toys as a result of some bargain, negotiation, or asks the child to put away a TT toy where it belongs during the cleanup, or during play a TT toy gets knocked down unintentionally and mother tells the child to pick it up, then Code 1 is appropriate. However, episodes of this kind may turn into "proper" exchanges related to the prohibition in which case the appropriate mother and child categories should be used. It should not be used if mother simply does not react to the child's touching TT toys.

For Codes 2-6, the coder must consider both the quality of the child's behavior involving the TT toys (no touching, self-correction, gentle touch, deviation), as described in the RTT coding system, and whether or not mother intervened. Looking/ no touching and self-correction reflect more internalized compliance, and receive typically Code 2 (committed compliance). Gentle touch reflects typically shaky compliance (Code 3, situational compliance). Deviation reflects Code 4 (noncompliance).

The final codes, however, depend also on the presence or absence of maternal intervention. For example, if the child is playing gently with TT toys throughout the segment and mother does not intervene, the child gets Code 3, situational compliance, because there is some evidence of (shaky and partial) acceptance of the prohibition. If,

however, the child is playing gently, mother intervenes, but the child continues to play gently, the child gets Code 4, passive noncompliance.

For Code 2, committed compliance, or Code 2N, negotiated committed compliance, there may be no gentle touch or deviation. Only looking/ no touching and self-correction are allowed, and they have to come “from inside”: if mother is holding child forcefully, and child is struggling to touch but fails, then of course Code 2 may not be given, even though there was no touching in the segment. Generally, not touching that is clearly due only to the fact that child is restrained, but he is very close to the table and if his arms could grow a few inches he would certainly be touching, is equivalent to touching. For committed compliance, there has to be evidence of self-control coming from inside, and the absence or else quick termination of touching even though child is not restrained physically and could continue to touch (e.g., is not in mother’s arms).

Committed Compliance (Code 2)

For Code 2 to be assigned to a segment, there must be looking/ no touching of the toys by the child, except for self-correction. Self-correction means touching lasting no more than 2 seconds cumulatively for the 30-s segment, and voluntarily terminated, which is allowed (if the termination or prevention of touching is due to maternal direct Physical restraint, Code 2 may not be given). If the child touches the toys for less than 2 seconds, and ceases immediately in response to maternal verbal control, and does not resume touching in that segment, Code 2 may be considered. If child touches the TT toys in a manner that would be described as gentle touch or deviation in the RTT system (any touch that is more than self-correction because it lasts more than 2 seconds cumulatively), Code 2 may not be given. Committed compliance assumes some degree of internal “will”

on the part of the child. Committed negotiated compliance assumes behavioral compliance to the prohibition, but the child attempts to influence others to change the rule, thus lacking the quality of embracing, whole-heartedly, the maternal agenda.

Child makes no attempt to touch/play with the toys, may comment or ask questions about the TT, look, approach, attempt to self-explain the reasons for the prohibition. For example, s/he may point to the toys and say: “No, no”; “Look, tchiou tchiou train!”; “This is a fun toy”; “I like gumballs”, but without touching/playing. The behavior parallels the categories of “looking only/not touching” in the RTT coding. Self-correction (including touching up to 2 seconds) is also allowed. If mother intervenes and child is diverted away from the table willingly and without any resistance, not ever having touched anything within the 30-s segment (or having touched for less than 2 seconds), code as committed compliance.

The child may also attempt to negotiate but only verbally and without any attempt to touch/reach the table. For older children (over 3 years old), determine if this negotiation should be coded with the compliance code, Negotiated committed compliance. For younger children (under 3 years old), this kind of negotiation is coded as committed compliance typically when the mother is far away from the child so that her immediate physical intervention is not possible. This same negotiation, however, may be coded as noncompliance when the mother is physically holding the child.

Conventions

- (a) If the child does not touch any of the toys, but it is due only to forceful maternal restraint against his/her will, use the appropriate noncompliance code or, on occasion, a situational compliance code (please remember that this is

equivalent to touching, therefore may be subject to a successful distraction).

For example, if the child attempts to free the arm by pushing the mother away, then Code 6 (defiance) should be used.

~~(b) If the child does not touch any of the toys when the mother uses only verbal control without any physical restraint, Code 2 is appropriate, since the child shows self-regulated compliance towards the prohibition. Also, if in response to maternal exclusively verbal control, the child ceases touching before 2 seconds elapse and does not resume in that segment, Code 2 may be appropriate. Deleted from original coding system.~~

(b) If the child needs frequent reminders (at least 3 in segment), and the feeling is that without the parent he/she would touch the toys, then code 3 is appropriate.

(c) When there is evidence of oppositional exchange between mother and child regarding the TT within an episode, there may be segments when the ensuing interaction continues to be oppositional but not explicitly about the TT. The child may cease deviation towards the table. In such cases a noncompliance code should be considered. The presence of good will underlying the absence of deviation is used as the distinguishing factor for Code 2 versus one of the noncompliance codes (child accepts the prohibition).

(d) Similarly, in the absence of maternal intervention, Code 2 should not be given to a child who ceases playing with the prohibited toys simply due to waning interest in those toys. This is clearly not an issue of the child's internalized restraint. Thus, if the child loses interest in the prohibited toys after playing with them for more than 2 seconds, but less than 15 seconds, child compliance

should be coded as a 3. If the child plays longer than 15 seconds, code the episode with the appropriate noncompliance code.

- (e) In the absence of maternal intervention, if the child gently touches the objects for less than 2 seconds and then corrects him/herself later in the same segment, Code 2 is appropriate. However, if the gentle touch continues throughout the segment then Code 3 is appropriate
- (f) If the child protests maternal prohibition but nevertheless does not attempt to touch the objects, code Committed compliance (Code 2). For exception to this with children over 3 years old, see code 2N.
- (g) *If the child ignores the verbal parental interdiction at least twice in a row and continues or attempts to continue playing with the toys, then code 4 is appropriate. However, if he/she reorients away from the TT for at least 10s between single "ignoring" episodes, then consider code 3.*
- (h) *If the child is not visible on camera, the coder should not infer his actions. No code should be given,*
- (i) *If the child expresses clear negative affect for 4s or more during a segment, then code 6 is appropriate. Otherwise, the dominant code for the rest of the segment should be considered.*

Negotiated Committed Compliance (Code 2N)

For children 3 years old or older, behavioral compliance to maternal prohibitions was frequently accompanied with verbal protestation. In this situation, it is clear that the child has not completely internalized the prohibition and attempts to change or influence their mother's decision, but reluctantly refrains from touching the toys. It appears,

however, that the child is complying to the prohibition mostly because their mother is in the room, but his or her behavior is not sustained by maternal control as in Situational Compliance (Code 3). Thus, during the portion of the session in which the mother is given a task and becomes busy, the child will frequently approach the prohibited toys and may even engage in self-corrected touching.

This code is given when the child's behavior conforms to the criteria for committed compliance, but he/she continues to protest the maternal prohibition. Thus, if the child touches three or more toys, but the cumulative touch is less than two seconds, then assign this code (2N) to the segment rather than a committed compliance code (Code 2). Or, if the child tries to negotiate playing with the toys two or more times during a 30-s segment, code this with Negotiated committed compliance (Code 2N), as long as the child's behavior is compliant. Do NOT assign this code unless the child behaviorally conforms to the maternal prohibition. This code reflects a lack of wholehearted endorsement of the maternal agenda.

Other examples: If the child complains, while behaving compliantly, and does not go along with maternal attempts to distract him or her from the table, code this segment as Committed negotiated compliance. In this case, children may say "I don't LIKE these other toys" or "I don't want to play with the ____ (valid toy)" in response to mother's attempts to distract them. Any combination of verbal protestation and self-corrected touching indicates a negotiation on the child's part.

Situational Compliance

If mother did intervene: Child ceases to deviate immediately after the intervention, but s/he may need frequent reminders. In other words, the child is in general willing to

comply and is receptive to maternal agenda, but the agenda does not yet function autonomously. The behavior prior to mother intervention has to be either gentle touch or full-blown play (but not self-correction, less than 2 seconds – that would have been coded as Code 2, committed compliance; see also convention a). If the child touches the toys but is then successfully distracted in the segment and turned away on his/her own, then use Code 3. If the child loses interest in the prohibited toys after playing with them for more than 2 seconds (without maternal intervention), but less than 15 seconds, child compliance should be coded as a 3.

If mother did not intervene: Child touches gently the TT objects, and continues to do so throughout the segment (more than 2 seconds). S/he neither plays in a full-blown way (that would be passive noncompliance, Code 4) nor self-corrects (that would be committed compliance, Code 2). There is then some evidence of partial compliance to the prohibition, but self-regulation is very shaky and prone to slippages.

Passive Noncompliance (Code 4)

If mother did intervene: Child continues to deviate after the maternal intervention, but s/he does not attempt overtly to refuse, offer explanations, ask reasons, and/or protest. Instead, the child ignores the mother, goes “deaf” (passive noncompliance, passive reluctance). If there is physical maternal restraint and the child frees his/her arm matter-of-factly without pushing the mother away or being angry, and continues to attempt to get to the toys, use Code 4. Child behavior before maternal intervention may be either gentle touch or full-blown deviation (and see convention a) – child does not get any credit for playing gently after maternal intervention, because the mother did tell him/her to stop.

If mother did not intervene: Child simply plays with objects in a full-blown fashion (but if the child uses only gentle touch, s/he gets some credit, and is given Code 3, situational compliance).

Overt Resistance (Code 5)

If mother did intervene: Child overtly resists the maternal agenda by refusing or attempting to negotiate/justify the deviation, for example: “But these are so pretty; just once, mom” (and touches); “No, Julie never said I could not touch them; we can play with the fishing thing”. The resistance is not aversive, however (refusals and negotiations). Simple refusals like “no”, shaking the head sideways, etc., should be repeated at least twice within a segment to receive Code 5. However, a single, clearly articulated statement of refusal is enough to warrant the Code 5. Again, this code is not given if there is any trace of anger or affectively aversive expression in body language, tone, etc. Then, Code 6 (defiance) is more appropriate.

If mother did not intervene: Child plays/touches objects saying out loud: “I want to”, “I will play”, “I won’t break them” etc. This code is very rare; a more likely code is Code 4.

There are no requirements regarding this form of touching, although deviation/touching must occur, that involves the TT, as long as child overtly protests. If there is no touching of the prohibited toys, then the child’s behavior is coded, regardless of the presence of the child’s verbal protests.

Defiance (Code 6)

If mother did intervene: Child responds in an overt and affectively negative fashion (e.g., cries, throws/pushes/shoves objects, hits/pushes away mother, has a tantrum,

etc.) Child may deliberately intensify deviation. In other words, the child defiantly rejects maternal agenda. When the mother physically removes the child from the TT, or blocks the way to the objects, the response of the child is a determining criterion for Code 6 or some other code. If the child simply frees his/her arm without pushing mother or expressing anger, Code 6 should not be used. Then the use of a lesser code is appropriate (typically Code 4).

If mother did not intervene: Child touches/plays in a defiant way, e.g., looking triumphantly/rebelliously at the mother. This is also rare, the more likely code is Code 4.

There are no requirements regarding the form of touching, although deviation/ touching must occur for this code, that involves the TT, as long as the child protests with anger. If there is no touching of the prohibited toys, then the child's behavior is coded, regardless of the presence of the child's verbal protests.