TODDLER COMPLIANCE AND PARENTING STRATEGIES

IN A TOY CLEAN-UP TASK

By

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STRATEGIES

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Abstract

This study examined the relationship between discipline strategies used by parents and noncompliance in a non-clinic sample of toddlers in a proactive, toy clean-up task. Specifically, the study examined the relationship between child noncompliance and scores on the Child Behavior Checklist (CBCL 2-3) and Eyberg Child Behavior Inventory (ECBI). Additionally, this study examined the relationship between parent behavior and rates of child noncompliance, particularly examining the effectiveness of both questions and directives in gaining child compliance. Sixty-six mother and child dyads participated by completing the CBCL 2-3, the ECBI, and a "waiting room" laboratory observation. Correlational analyses with Bonnferoni corrections were used to examine the hypotheses of this study. Results indicated a positive correlation between active noncompliance and the Externalizing T-Score of the CBCL. Secondly, maternal directives for toys and praise were significantly correlated with rates of the child picking up appropriately. Maternal questions were not significantly correlated with picking-up appropriately. Maternal verbal prompts, physical prompts, and directives regarding the child touching forbidden objects or leaving the area were negatively correlated with child passive noncompliance. Use of highly controlling strategies, such as verbal and physical prompts were positively correlated with child negative affect and high rates of active noncompliance (touching forbidden objects and leaving the area). A discussion of further research includes techniques to examine causal factors in child noncompliance.

TODDLER COMPLIANCE AND PARENTING STRATEGIES IN A TOY CLEAN-UP TASK

INTRODUCTION

Child noncompliance often starts in childhood, and can have severe repercussions for the child later in life. By the time a child is two years of age, important parent-child interactions are taking place. Parents of toddlers are developing their style of discipline with the child, and discipline encounters occur at a high rate (Minton, Kagan, & Levine, 1971). These discipline encounters set the stage for other experiences in the child's life. Higher rates of overly harsh and controlling parental discipline are associated with children who tend to exhibit more non-compliant behaviors. This noncompliance will also generalize to other situations and other people, affecting the child's relationships with siblings, parents, teachers, authority figures, and peers (Anastopoulos, Shelton, DuPaul, & Guevremont, 1993; Frick, Lahey, Loeber, Stouthamer-Loeber, Christ, & Hanson, 1992; Humphreys, Forehand, McMahon, & Roberts, 1978; Len, 1988; Vuchinich, Bank, & Patterson, 1992). Furthermore, research suggests that excessive noncompliance could place the child at risk for abuse, conduct problems, and criminal deviance later in life (Forehand & McMahon, 1981; Kendziora & O'Leary, 1993; Len, 1988). Noncompliance accounts for the largest number of referrals to mental health centers (Forehand & McMahon, 1981). By helping parents discover more effective ways of handling child noncompliance when the child is young, the child may be more likely to develop his or her full potential later in life.

Definitions of compliance.

The definitions of "compliance" and "noncompliance" vary throughout the research. Compliance has been defined as "obedience to a parent's initial request or directive during control interventions" (Kuczynski, Kochanska, Radke-Yarrow, & Girnius-Brown, 1987, p. 802). Forehand and McMahon (1975) seemed to incorporate the child's distractibility into the definition of compliance. They defined "initiated compliance," as the behavior which occurred "when the child left the activity in which he was engaged within 5 seconds after the maternal command and initiated a response towards the toy specified in the command." Also, in an attempt to specify compliance even further, certain researchers, such as Forehand and McMahon (1975) and Roberts (1978), only recorded compliance if obedience occurred within a specific time-frame from when the command was issued. Schaffer and Crook (1979, 1980) broke down compliance into three dimensions or phases: orientation to the task, contact with an object, and the extent to which the child carried out the mother's command. This approach acknowledges that a number of different behaviors may actually make up what people term "compliance."

Noncompliance also is defined differently in the existing research. It can be seen as an active process, such as direct refusal of a command or increasing rates of forbidden behaviors, or a passive process of just not doing the specified activity, ignoring the command, etc. (Barkely, 1987; Kuczynski et al., 1987). As discussed above, noncompliance can be construed as a time issue. For example, children who do not respond to their parents' redirection within a number of seconds could be labeled as behaving noncompliantly. Theoretically, since a number of different behaviors, or

phases, constitute compliance (Schaffer & Crook 1979, 1980), noncompliance could be viewed in terms of a continuum, or degree of disobedience, rather than a discrete category of compliant versus noncompliance.

Directives

A directive is an imperative statement that tells the child to perform an action or engage in a behavior. These may be explicit ("Jane, pick up the block") or implicit ("There's a block over here"). Forehand and McMahon (1977) differentiated between two types of commands. The first type is termed an alpha command. The alpha command is immediate (issued within 5 seconds of noncompliance), brief, and specific, and phrased in terms of "do statements." The second type of command described is a "beta command." Beta commands tend to be delayed or given too quickly, so that the child is unable to comply. Additionally, they are often vague, lengthy, and phrased in terms of "don't statements," which often fail to specify the intended behavior. Alpha commands tend to be more effective in eliciting appropriate behavior from the child than beta commands. Alpha commands have been found to increase child compliance, and beta commands have been found to be associated with behavior problems.

Pfiffner and O'Leary (1994) also examined some of the same characteristics as Forehand and McMahon did with "alpha" and "beta" commands. In a sample of 40 children, ages 18-31 months, they compared commands that were immediate (delivered less than 3 seconds after onset of misbehavior), short (less than 7 words), and firm (sharp or neutral voiced) to those which were delayed (delivered more than 3 seconds after the onset of misbehavior), long (8 or more words), and gentle (in a coaxing voice after the onset of misbehavior) in a laboratory setting. Two types of situations were employed: a

"free play situation," in which maternal nurturance was varied as children engaged in free play, and a "transgression" situation, in which objects that the child should not touch were introduced to the existing paradigm. Mothers received instructions for the two types of commands through a "bug-in-the-ear" device. Results indicated that when commands were immediate, short and firm, they were significantly more likely to result in child compliance than when the commands were delayed, long, and gentle. However, neither of the command types was effective in teaching or encouraging alternate, pro-social behaviors. Furthermore, the immediate, short, and firm commands were associated with increased negative affect in the child, and hence were more aversive, particularly if high maternal nurturance occurred before the commands.

Lytton (1980) examined the effectiveness of commands and other strategies during child-parent interactions with a group of 136 Caucasian boys, aged 25-35 months. The mean age was 32 months. The task consisted of a 3-hour unstructured interaction between the parents and the children in the home before the child's bedtime. The analyses indicated that when commands were combined with more positive strategies, such as praise and suggestions, there was higher child compliance than when commands were combined with more punitive, controlling techniques, such as physical punishment and criticism. So although directives in general tend to be effective with this age range, the effectiveness appears to be increased when combined with positive strategies, such as praise.

Other studies have also found a relationship between maternal affect and command effectiveness. Kochanska and Aksan (1995) examined child compliance to maternal requests in children aged 26-41 months. The researchers examined "do tasks"

and "don't" tasks. In the "do" task, the child was required to pick up a set of toys, and in the "don't" task the child was prohibited from touching a set of prohibited objects. Both types of tasks were examined at home and in a laboratory situation. The researchers found a positive correlation between compliance and direct commands (do statements) that were delivered in a gentle manner for these children. Additionally, the results indicated prohibitions (don't statements) that were stated using positive affect (warmth) were useful for gaining compliance. The absence of positive affect was demonstrated by the parent using a neutral, sad, angry, or irritated tone of voice. Commands and prohibitions in which the mother and child did not share positive emotions were not associated with compliance, rather they were correlated with child resistance and defiance.

Wasserman, Allen, and Solomon (1986) also examined the use of commands, physical strategies, and higher control strategies with two-year-old children in a laboratory setting. Following a 30-minute play session, mothers were asked to have their children clean up the playroom. They compared a group of normal, healthy children to a group of children who had or were at risk for physical disabilities. They categorized mother control strategies into four areas: general commands, such as "Let's clean up;" specific commands (those which indicated a particular object location, and action); positive strategies (using games, modeling, and physical guidance); and negative strategies (bribery, pleading, threats, punishment). Their results indicated that the control group mothers tended to use more positive strategies and fewer negative strategies than mothers did in the at-risk groups. Interestingly enough, mothers of the at-risk children were more successful in getting the room clean, although mothers in this group were

twice as likely to pick up the room themselves. In terms of compliance to control strategies, specific commands were clearly the most effective. General orders and negative strategies were negatively correlated with child compliance.

Commands may also become more effective when noncompliance is followed by a time-out session for the child. Roberts, McMahon, Forehand, and Humphreys (1978) investigated parent-instruction-giving in 27 children, ages 3 to 7. Mothers were randomly assigned to one of three training groups: 1) command training, where parents were taught to give alpha commands; 2) command plus time-out training, where alpha commands and time-out procedures were taught; and 3) placebo training, or a baseline condition. Following the pre-training, toys were made available for children to play with and mothers were given instructions to "control and direct" their children's behavior in their own style. Results indicated a significant increase in child compliance for the command training, and treatment effects were greatly increased for the time-out training. These findings may indicate the importance of manipulating the antecedents of a child's behavior, which in this case was through alpha commands, as well as the consequences of a child's behavior (i.e. time-out procedures).

Reid, O'Leary, and Wolff (1994) also found results relating to the combination of commands and other techniques, such as distraction. The researchers observed 24 children, aged 17 to 39 months, and their mothers in a laboratory play situation. Mothers were assigned to one of two groups: 1) distraction-reprimand, and 2) reprimand-distraction. During each phase, mothers were fed instructions through the bug-in-the-ear device following their child's noncompliance. Results indicated that when reprimands were given individually, they were much better in controlling the child's behavior than

when the distractions were given individually. Also, when mothers implemented reprimands immediately before distractions, children were more compliant than when mothers implemented distractions immediately before reprimands. Furthermore, when reprimands preceded distractions, the children exhibited higher amounts of negative affect (whining, crying, yelling, etc.) than children who received distractions before reprimands. Reid et al. (1994) discussed the possibility that reprimands help to ensure initial compliance by clearly communicating maternal expectations, while distractions preserve child compliance.

A combination of methods, particularly both positive and negative techniques, may be the most effective. Rosén, O'Leary, Joyce, Conway, and Pfiffner (1984) studied the importance of consequences in maintaining on-task behaviors in a classroom setting. The children in the study were 8, second- and third-graders with special education referrals for hyperactive behaviors. Results indicated that when positive consequences, such as praise, smiles, hugs, etc., were used in conjunction with mild negative consequences such as directives, loss of privileges, and time-outs, high levels of on-task behaviors resulted.

Additionally, delivery of commands seems to be an important factor in child compliance. Rosén et al. (1984) replicated the same study with another group of 8, second- and third-grade children, for the purpose of comparing "prudent negative consequences" (reprimands issued in a calm, concrete, and consistent manner) to "imprudent negative consequences" (reprimands issued in a loud, emotional, inconsistent manner). The results suggested that when verbal statements were issued in a calm, concrete, and consistent manner, they were far more effective at maintaining on-task

behavior than those issued loudly, late, nonspecifically, or inconsistently. Children responded to the imprudent consequences by laughing at the teacher, and by becoming verbally sassy and sarcastic. Thus, it seems negative consequences, such as reprimands or commands are not always effective in maintaining behavior, and not only depend upon the length, timing, and specificity as Forehand and McMahon suggested, but upon delivery factors, such as volume, emotion, and consistency.

Questions

Another technique parents use to engage children in compliant behavior are questions, or interrogatives. An interrogative usually takes an indirect form ("Chris, can you pick up the block for me?" "Would you like to pick up the toys before you go?"). Although the parent's intentions for the child are specified, they usually take an implied form. Taken literally, the parent's question actually requires a verbal reply of "yes" or "no" by the child. There are mixed results on the effectiveness of questions as compared to directives concerning compliance rates. Age of the child and the type of compliance that the parents require may affect these results.

Schaffer and Crook (1980) examined a number of mother control techniques related to compliance in a lab setting. The task consisted of the mother of the child actively engaging the child in playing with a number of age-appropriate toys. The researchers compared two groups of children: 15-month-olds and 24-month-olds. They measured three types of child compliance: orientation compliance (the success of directing the child's attention to the designated object); contact compliance (the establishment of physical contact with the object); and task compliance (the extent to which the child carried out the task prescribed by the mother). The results indicated that

imperatives were the most effective technique, with a 34% compliance rate for the 24-month-old group and a 17% compliance rate for the 15-month-old group. Imperatives were more likely to increase task compliance than interrogatives, which had a 17% compliance rate for the 24-month-olds and a 13% compliance rate for the 15-month-olds. Additionally, significantly higher rates of task compliance and contact compliance were found when orientation compliance had already been met. Orientation compliance was accompanied by a physical prompt about 40% of the time, which exerted a marked effect on compliance. Lastly, there was an overall age effect upon compliance. The older children were more likely to comply with their mother's requests and directives than the younger group of children. The distinctions between different types of compliance in this study proved to be meaningful because the distinction promotes understanding of how different strategies may increase compliance in different situations.

Nelson and Stockdale (1984) attempted to replicate Schaffer's and Crook's results, specifically addressing the different types of maternal responses to noncompliance. They examined the relationship between mother control techniques and child compliance for children ages 3-6. The same structured play setting was used, in which the mother engaged the child in interacting with a variety of toys. Correlational analyses of their results indicated that mothers use more interrogatives and fewer imperatives as their children age. The data also suggested a relationship between the type of maternal technique and the child's degree of involvement in the task. For example, mothers were more likely to give declaratives when the child was not attending to the task and interrogatives when the child was attending to the task. Age also seemed to play an important role. Interrogatives were more effective than directives for older children,

whereas there were no differences regarding compliance for the younger children. Additionally, the data indicated that older children were less likely to be controlled through commands, and were more receptive to interrogatives than were younger children.

McLaughlin (1983) examined child compliance to parental control techniques with a preschool-age sample, ages 1.5, 2.5, and 3.5 years, with both parents in a home situation. The mothers were asked to play with the children using a standard set of toys, as well as some of the children's own toys. The results indicated that the older children (2.5-year-olds and 3.5-year olds) had significantly higher compliance rates in response to indirect controls (i.e. interrogatives, suggestions, etc.) rather than imperatives (directives, commands, warnings). The opposite finding was true for the 1.5-year-old children. This group of children had higher compliance rates to direct, rather than indirect controls. In other words, the older groups of children appeared to be better able to understand and respond to indirect commands than the younger group of children. Age effects also existed for verbal prompts given by the mother to obtain the child's attention. McLaughlin found that mothers used more controls to gain attention rather than to elicit action in older children, whereas there were no significant differences for attention versus action controls in the younger children.

Lytton and Zwirner (1975) studied child compliance in a preschool sample (25-35 months) in a natural setting. No structured tasks were utilized, but one parent was required to be in the room with the child when observations were being conducted. The results indicated that parental suggestions ("Would you like to...?") were more likely to be effective than command-prohibition (direct commands) or reasoning in gaining

compliance. Physical actions (i.e., spanking, slapping) and negative actions (i.e., yelling, threatening) by parents were particularly likely to be followed by noncompliance.

Warnings

There is a scarcity of research systematically studying the use of warnings to control child noncompliance. Although it is often mentioned as a component of discipline methods, it often fails to be examined for its individual effectiveness. Similarly, there may be a relationship between the lack of emphasis paced on warnings by researchers, and how often parents use these techniques in the home. Minton, Kagan, and Levine (1972) measured the number and type of "anticipation sequences," or warnings, used by mothers with a group of 27-month-old children during home observations. Results indicated that the rate of warnings was indeed low, and was most often directed at the fear of the child's personal danger or destruction of household items. The researchers did not measure the effect of warnings on child compliance.

A study by Roberts (1982) is the primary study for the use of warnings on noncompliance. In this study, Roberts combined a warning with a time-out procedure, comparing the effects of warned versus unwarned time-out on child noncompliance. Roberts defined a warning as a "verbalized label of the time-out contingency, delivered by the parent after child noncompliance to an initial command" (p. 38). In other words, the warning restated the original command and specified a consequence for noncompliance.

The subjects of the study were 24 children, ages 2 to 6, referred for treatment of conduct disorders. The subjects were assigned to one of three groups: no-warnings, warnings, and standard treatment. In the no-warning group, the mother immediately

responded to noncompliance with a time-out. In the warning group, the mother responded to noncompliance with a warning, such as "If you don't put the _____ in the _____, you will have to sit in the corner." If the child was still noncompliant after the warning, the mother then implemented time-out. In the standard treatment group, the mother implemented the warnings used in the warning group, but also immediately praised the child for compliance. The time-out consisted of three stages: placing the child in time-out; ignoring the child's crying and whining until the criteria for quiet were met; and spanking the child for leaving time-out.

Results indicated no significant differences between groups. Thus, warned and unwarned time-outs were equally likely to control noncompliance. The addition of praise did not increase the effectiveness of the warning. Children in the unwarned group were sent to time-out significantly more often and had more spankings than either of those groups which used warnings. Therefore, the warning seemed to decrease the number of punitive parent-child interactions, while maintaining the same amount of compliant behavior.

Another study has found positive results for warnings combined with other techniques. Scarboro and Forehand (1975) examined the effectiveness of a warned time-out for noncompliance with a group of 24 children, with an average age of five and one-half years. The ages ranged from four years, nine months to five years, eleven months. The researchers conducted a comparison based on an out-of-room time-out compared to a within-room time-out. Mothers were instructed to issue a warning (i.e. "If you do not _____, I am going to take away the toys; if you do not _____, I am going to take the toys and leave the room"). If the child did not initiate compliance within 5

seconds after a command or maintain compliant behavior for any 5-second time frame, the mother administered one of the two warnings. Relative to the control group in which mothers issued the same commands but did not use time-out, the two time-out groups had increased compliance. However, it is unclear how much of the compliance could be controlled for by the warning itself, or how much could be attributed to the effects of the time-out.

Although both Schaffer and Crook (1980) and Nelson and Stockdale (1984) measured prohibitive techniques, such as threats and warnings, used by the mother, neither of these studies isolated their effect on noncompliance. Unfortunately, this variable is an important one for study, although the definition of compliance appears to have been based on opinion rather than on data from well-controlled studies. When combining warnings into a category with other variables, conclusions can only be drawn about the category as a whole, rather than a warning's individual effect upon noncompliance.

Because of the limited study on warnings, it is difficult to ascertain the importance of different variables used in administering a warning. One such variable is the actual follow-through of the consequence. In the study done by Roberts (1982), a consequence was consistently given when the child did not adhere to the warning. However, it is possible that in other settings under less controlled circumstances, the consistency and presence of a negative consequence may be lacking, and therefore the effectiveness of a warning is decreased.

In a study by Pfiffner and O'Leary (1987), an all-positive approach to child off-task behavior in an academic situation was implemented in a 5-week remedial summer

school program. Eight children in grades 1-3 participated. Results indicated that positive consequences alone were not enough to maintain sufficient on-task rates of academic accuracy at acceptable levels. When negative consequences were reinstated, there was an immediate increase in appropriate behavior and academic accuracy. A positive approach appeared to be successful in maintaining the appropriate gains following the gradual removal of the negative consequences. Based on these same principles, warnings also may not prove to be effective unless they have a history of being followed by clear, consistent negative consequences. This concept is in need of further study and documentation through systematic research of the variables involved in effectively using warnings.

Summary

Child noncompliance often starts when the child is a toddler, and influences the child later in life (e.g. Humphreys et al., 1978; Len, 1988; Vuchinich et al., 1992). Ineffective parenting strategies can worsen or maintain noncompliance (e.g. Kendziora & O'Leary, 1993). Given the existing research on discipline strategies and noncompliance, a number of conclusions can be drawn. First of all, commands have been determined to be an effective strategy with toddlers if they are brief, specific, delivered in a calm voice, consistent, and tell the child what to do. The effectiveness is maximized when used with positive strategies such as praise and reinforcement, particularly if noncompliance is followed-up by mild negative consequences, such as time-outs, distraction, or reprimands. Secondly, interrogatives have had mixed results for a toddler-aged population. They tend to be more effective for older children (over the age of 2.5 years), and if the child is already oriented towards the task. Some research has found higher

rates of effectiveness in a natural, as opposed to a laboratory setting. Lastly, warnings as a discipline strategy need to be researched more systematically. Limited data have shown that warned time-outs are just as effective as unwarned time-outs in a controlled laboratory setting. More research needs to be done with regard to consequences following a warning, settings, long-term effectiveness, and non-clinical samples of children.

Critique

A number of improvements and additions could be made to the existing research in the area of child-noncompliance. Firstly, researchers need to operationally and differentially define discipline techniques more clearly. For example, a number of studies mention that parents use discipline strategies such as bribes, threats, or warnings (e.g. Nelson & Stockdale, 1984; Schaffer & Crook, 1980). However, since these techniques were not central to the researchers' hypotheses, rarely were they clearly defined. Unfortunately, when examining discipline strategies, such as warnings, it is difficult to differentiate what the researchers stated as a threat from what other studies have defined as a warning. Furthermore, one is unable to determine other factors surrounding the threats, bribes, etc., listed in these studies, such as clear, definable consequences for child compliance.

Secondly, a number of studies grouped together "positive discipline strategies" (praise, reinforcement, etc.) and "negative discipline strategies" (threats, bribes, pleading, physical punishment, reprimands) (Schaffer & Crook, 1980; Nelson & Stockdale, 1984). In order to establish validity for these groupings of discipline techniques, the researchers should have established data, based upon statistical techniques and carefully collected

data, explaining why these techniques belong together. A factor analysis of a discipline survey or an individual analysis of each of the techniques would be ideal to determine how each technique affects compliance. This is particularly true regarding warnings. The term "threat" is often combined with the "negative control strategies," but with the dearth of research on warnings this conclusion is nearly impossible to make.

A third area for future research in compliance research is the age of the child. Currently, most of the research studying child discipline has used preschool-aged children and older (Forehand & McMahon, 1977). Very little experimental research has examined discipline strategies in toddlers. Developmentally, it is important for parents to use techniques that will be most effective at early ages in order to strengthen the parent-child bond and establish a strong foothold in child compliance. As discussed earlier, this is quite important in early childhood, when child noncompliance is high, and parent-child interaction patterns are being formed (Minton et al., 1971).

A fourth critique is the variability of the setting and tasks used to measure these constructs. Many of the studies (McLaughlin, 1983; Nelson & Stockdale, 1984; Schaffer & Crook, 1980) primarily examined child engagement in their surroundings, and not prohibiting them from doing a task. Based on the different nature of the tasks, different results are bound to emerge. Additionally, data collected in an unstructured laboratory setting are also going to differ from those collected under structured conditions. Few studies employ both types of situations in order to compare results.

Hypotheses

The aim of this study is to examine the relationship between parental discipline techniques and toddler compliance during a proactive, toy clean-up task through a

number of multi-modal measures. Parental strategies, such as questions, verbal prompts, directives, praise and nonverbal strategies (modeling, physical prompts, etc.) will be measured to see how they affect child compliance and noncompliance. Measuring rates of the child picking up the toys appropriately will assess for child compliance. Child noncompliance will be assessed by measuring negative affect (defiance, crying, whining, etc.), toy contact (a type of passive noncompliance in which the child plays with the toys rather than picking them up), and other forms of misbehavior (leaving the area and touching forbidden objects).

This study is very important in that it examines how the average mother disciplines her child, and what discipline methods are the most effective in gaining compliance. This study, in particular will determine effective techniques in proactive tasks. Proactive tasks, in which the parent is telling a child what to do are very common, and oftentimes include parent and child conflict. However, little literature exists that studies these types of situations. The findings could prove to be invaluable to reducing tension and conflict for parents in these types of situations, possibly preventing future relationship problems or more punitive interactional patterns.

Additionally, this study will determine whether questions or directives are superior in gaining child compliance. Although it is common for parents to ask their children to do things, very little research has systematically looked at maternal requests with young children. In fact, some parents fear using more directive techniques, lest they be overly harsh or punitive, particularly if both questions and directives get similar rates of compliance. In the past, certain parent training methods have even encouraged asking children to do things, in order to teach them manners and properly involve them in

activities. However, many of these methods have not been scientifically evaluated as far as their usefulness. It is possible, for example, that if questions are ineffective at gaining child compliance, it could further increase parent-child frustration, arguing, and increase problems in their relationship. Consequently, close methodological study is necessary in order to advocate effective parenting techniques and strategies.

Lastly, this study will examine toddler-aged children's reactions to discipline strategies. Much of the existing research, particularly with questions and requests, has been done with older children after they have been identified with behavioral problems. Many people have used the recommendations of these studies, assuming they will apply to the average toddler-aged child, not taking into account the vast cognitive, social and emotional development toddler-aged children experience during this time. Following this study, parents will be able to choose effective discipline strategies for toddler-aged children based upon strong scientific data. Hopefully, by using highly effective discipline strategies when the child is toddler-aged, behavioral problems when the child is older may be prevented or greatly reduced.

There are three main purposes of this study. First, this study will attempt to determine if mothers' reported rates of long-term child noncompliance, as measured by the Eyberg Child Behavior Inventory (ECBI) and the Child Behavior Checklist/2-3 (CBCL/2-3), are correlated with observed rates of noncompliance (negative affect, leaving the area, touching forbidden objects, and toy contact) and compliance (picking-up appropriately). If correlated, the construct validity of the measures would be strengthened, offering practitioners options for identifying "at-risk" behavior. Secondly, this study will examine the relationship between observed parental strategies (questions,

verbal prompts, directives, praise, modeling, physical prompts, etc.) upon observed rates of child compliance (picking-up appropriately) and noncompliance (negative affect, leaving the area, touching forbidden objects, and toy contact). Thirdly, research has indicated that toddler-aged children appear to have higher compliance in response to maternal commands than maternal questions (McLaughlin, 1983; Nelson & Stockdale, 1980; Schaffer & Crook, 1980). This study will study the rates of child compliance and noncompliance with both maternal directives and questions within a proactive task, identifying the patterns of parent-child interaction for each. By determining if either questions or directives have a stronger relationship to child compliance, better parenting techniques can be developed.

METHODS

Participants

Participants were recruited from newspaper advertisements, posters on campus and in the community, psychology courses, day-care centers, physicians' offices, and birth announcements collected from the local newspaper. None of the child participants was currently receiving psychological treatment or displayed any developmental delays. Mothers received extra credit in their psychology course or received coupons from local businesses. Children received a small prize.

Sixty-six mothers and their children (32 girls and 33 boys) participated in the study. Sixty of the 66 mothers completed the demographics questionnaire information. Average age for mothers was 27 years, ranging from age 20 to age 38. Ninety-seven percent (n=58) of the mothers were Caucasian. One of the mothers was of Asian descent, and one mother was African-American. Average educational level for mothers was 14.83

years, ranging from 12 to 17 years. Forty percent of the mothers were single parents (24 out of 60). Twenty percent of the mothers had never been married (12 out of 60) and twenty percent of the mothers were divorced (12 out of 60). The remaining 60 percent of the mothers (36 out of 60) were married. The average age for the mother's spouse was 33 years, ranging from 22 to 48 years. The average educational level for the mother's spouse was 15.46 years, ranging from 10 to 17 years of education. Ninety percent of the mother's spouses were Caucasian (36 out of 40).

Twelve participants (20%) had a total family income of less than $800 per month, seven had an income of $801-$1000 per month (12%), seven (12%) had an income of $1001-$1500 per month, nine (15%) earned $1501-$2000 per month, 8 (13%) earned $2001-$2500 per month, and 17 (28%) earned over $2500 per month. Family socioeconomic status was determined using the Four Factor Index of Social Status (Hollingshead & Redlich, 1975) with index scores reflecting "social strata" based on level of education and occupation of the head(s) of the household. Index scores, which combined occupational and educational data, ranged from 12 (described as unskilled laborers and menial service workers, including students and homemakers) to 66 (major business and professional occupations). One-third of the families (n=20) were classified at the highest stratum, major business and professional occupations.

Average age for the children was 35 months, ranging in age from 24 months to 45 months. Ninety percent (54 out of 60) of the children were Caucasian. One of the children was Native American, and five of the children (10%) were African American. Forty-seven percent of the children had at least one sibling, 10% had two siblings, and 3% of the children had three siblings. Forty percent of the children had no siblings at the

time the study took place. None of the children was receiving psychological treatment or identified by his/her mother as having behavioral problems.

Materials

Demographic Questionnaire

Mothers completed a demographics questionnaire used for descriptive purposes. The questionnaire included age, ethnic background, and gender of each family member, as well as parents' education level, occupation, and income. The questionnaire also assessed the child's development (e.g., age at which various milestones were attained) (see Appendix A).

Child Behavior Checklist/2-3 (CBCL/2-3)

The CBCL/2-3 (Achenbach, 1992) is a 100-item, three-point rating scale which assesses the behavioral and emotional characteristics of two- and three-year-old children. The measure yields T-scores for Externalizing and Internalizing behaviors, as well as a Total Problem Score. The CBCL/2-3 has well-documented reliability and validity. The CBCL/2-3 has adequate test-retest reliability (greater than .82 for the broad-band measures) (Crawford & Lee, 1991). Concurrent validity has been established with other child behavior measures, and adequate discriminant validity has been demonstrated in distinguishing between nonreferred and clinic-referred children (Spiker, Kramer, Constantine, & Bryant, 1992). Both the CBCL Total Problem T-score and CBCL Externalizing T-score were used in this study as indices of child misbehavior reported by the mother.

Eyberg Child Behavior Inventory (ECBI).

The ECBI (Burns & Patterson, 1990; Eyberg & Ross, 1978) is a 36-item scale, which identifies specific behavior problems in 2- to 16-year-old children as reported by their parents. The ECBI yields two scores: an Intensity score and a Problem score. The Intensity score is a sum of 36 items, using a seven-point rating scale, of how frequently a behavior occurs. The Problem score is a sum of 36 items, using a two-point rating scale, which measures the parent's interpretation of whether the child's behavior is a problem. The ECBI is significantly correlated with observations of parent-child interactions and with Externalizing scores on the Child Behavior Checklist/2-3 (Boggs, Eyberg, & Reynolds, 1990). The ECBI has adequate reliability and validity for discriminating between children with and without behavior problems (Boggs et al., 1990). Both the ECBI Intensity score and the ECBI Problem scores were used in this study as an index of child misbehavior reported by the mother.

Apparatus

During the toy clean-up situation, a Panasonic VHS video camera, model AG-1250-P, was used to record the mother and child behaviors. A Panasonic color monitor, Model # BTS1300N, was used by the experimenter to observe the ongoing interaction while in the adjacent room. A bug-in-the-ear TM device (Model B-312, Farrall Instruments, Inc.), consisting of a microphone and hearing aid set-up, was used to allow the experimenter to prompt the mother to tell the child when it was time to pick up the toys and where to put the bin when the child was finished.

Waiting Room

The 17' by 8' room was furnished to resemble a waiting room, with chairs, low tables, toys, a telephone, and forbidden objects (see below). Toys on the floor included a puzzle, a plastic car, plastic blocks, and a shape box. A bin was placed on the floor next to the toys. The area was marked off with a baby gate and masking tape on the floor to ensure that the participants stay in view of the camera and to determine the exact point at which the child left the area.

Forbidden Objects (FO)

Objects that were not considered appropriate for toddler-aged children's play were placed on tables around the room. Forbidden objects included: a tape recorder; a pencil caddy with pencils, erasers, and plastic clips; a sealed jar of candy; a colorful transistor radio; and a hanging wind chime.

Observational Code

An observational code was designed to record the mother and child behaviors seen in the videotaped interactions. The coded behaviors were chosen to correspond with the parenting strategies and types of child misbehavior identified in the reviewed literature.

Nine maternal behaviors were coded. These included directives for toys (Dt), directive for forbidden objects or leaving the area (Df), questions for toys (Qt), questions for forbidden objects or leaving the area (Qf), modeling (MA), praise (P), verbal prompts (VP), interactions (I), and physical prompts (PP). Five maternal behaviors (directives-toys, directives-forbidden objects/leaving the area, questions-toys, questions–forbidden objects/leaving the area, and physical prompts) were coded for the number of new

instances per interval. Maternal behaviors coded by the percentage of occurrence included modeling, interaction and praise.

Five child behaviors were coded. These included contact with a forbidden object, leaving the area, toy contact, picking-up appropriately, and negative affect. Child behaviors coded by percentage of occurrence included picking up appropriately (PA), toy contact (TC), and negative affect (NA). The number of new instances per interval was coded for FO and LA (see Appendix E for a more detailed description of the observational code).

To obtain interobserver agreement, three undergraduates who were blind to the hypotheses of the study independently coded the toy clean-up phase for maternal and child behaviors. Randomized pairs of the observers were trained until they reached a criterion of 90 percent agreement. Observers viewed each tape twice, once to code the maternal behaviors and again to code the child behaviors. Intervals in which one or more disagreements existed were then marked on the coding sheets by the experimenter and the observers independently reviewed all behaviors for the intervals with disagreements. If the observer determined that his or her original coding was incorrect, s/he changed the coding to be consistent with coding definitions. If the observer determined that his or her original coding was accurate, s/he left the coding as originally done.

Percent agreement (between observers) with kappa corrections were calculated for each of the measured maternal and child behaviors for 100% of the observations. These calculations were reliability measures to assess the accuracy of coding. Agreement using kappa averaged .95 for maternal behaviors (range .91 to .97) and .96 for child behaviors (range .89 to .99).

General Protocol

Each mother and child met in the anteroom of the laboratory. A research assistant played with the child while the experimenter read an overview of the study from a script and obtained informed consent (see Appendix C for the consent form). After consent was obtained, the experimenter explained the use of the bug-in-the ear for the first phase of the protocol (which included the toy clean-up). The experimenter handed the mother a clipboard of questionnaires and escorted the mother and child into the "waiting room." The experimenter and the assistant remained in the anteroom and observed the pair on the video monitor. Communication with the mother over the bug-in-the-ear was given to prompt the mother to tell the child to pick up the toys and where to put the bin when the child was finished.

Toy Clean-Up

When the mother entered the anteroom, she was instructed to tell the child to pick up the toys on the floor. She was allowed to use any strategy she liked to get the child to pick up the toys, but was instructed she could not pick them up herself. The toy clean-up phase was constructed to last 10 minutes or until the child picked up all of the toys.

Debriefing

The assistant played with the child while the mother was interviewed and the experimenter responded to any questions or concerns. A general statement introduced the debriefing, such as, "At the end of the study, we like to get your feedback. What did you think?" The mother was also asked specific questions, such as, "Was the study realistic? Did your child behave in his or her typical manner?" The mother was given a packet containing a copy of the consent form, a list of community referral sources, a copy of a

parent letter explaining the study that she could give to interested friends or neighbors, and various coupons from local businesses. The child was given a small prize. They were thanked profusely, and their participation was completed.

RESULTS

Data Reduction for coded observational data

Six of the maternal behaviors, directives regarding toys (Dt), directives regarding forbidden objects/leaving the area (Df), questions regarding toys (Qt), questions regarding forbidden objects or leaving the area (Qf), verbal prompts (VP) and physical punishment (PP), were tabulated for average duration, and the average number of new instances. The three maternal behaviors of praise (P), interaction (I), and modeling (MA) were tabulated for percentage of occurrence. The child's picking up appropriately (PA) was defined as a measure of compliance. Child behaviors defined as noncompliant included percentage of occurrences of toy contact (TC), as well as average duration and average number of new instances of touching forbidden objects (FO), and leaving the area (LA). The child's negative affect (NA) was also measure in percentage of occurrences. These data are presented in Tables 1 and 2.

Correlational Analyses

Correlations Between Questionnaire Data and Observed Child Behavior

Correlational analyses were used to examine the main hypotheses of this study. Families of analyses were compiled based upon previous research and theory. Bonnferoni corrections were calculated to control for the number of analyses by families.

Hypothesis 1. In the first hypothesis of the study, it was predicted that children who displayed high noncompliance in the toy clean-up protocol would have high scores

on the EBCI and the CBCL/2-3, instruments that measured problem behaviors in toddler-aged children. Descriptive information regarding the ECBI and the CBCL/2-3 are presented in Table 3. Using the Bonnferoni technique, alpha was fixed at less than or equal to 0.006. Pearson product-moment correlations were calculated between the checklist data (ECBI Intensity score, and the ECBI Problem score, and CBCL/2-3 T-scores), and the percentage of occurrence of the observed child noncompliance during the toy clean-up protocol (toy contact, touching a forbidden object, leaving the area, and negative affect). The correlations between the checklist data and child noncompliance are presented in Table 4. A significant positive correlation was obtained between touching a forbidden object and the Externalizing T-score of the CBCL/2-3 ($\underline{r} = 0.3604$, $\underline{n} = 65$, $\underline{p} \leq 0.003$). A significant negative correlation was found between the percent of toy contact and the Externalizing T-score of the CBCL/2-3 ($\underline{r} = -0.3246$, $\underline{n} = 65$, $\underline{p} \leq 0.008$). No other correlations were significant. Thus, the expected relationship between child misbehavior and checklist data was not clearly demonstrated in this data.

Correlations Between Observed Maternal and Child Behaviors

Hypothesis 2. The second hypothesis of the study was exploratory, examining the relative efficacy of parental strategies on toddler-aged child compliance. Parenting strategies were measured to determine how they affected child compliance and noncompliance. Pearson product-moment correlations were calculated between observed maternal strategies and observed rates of child behavior. Three distinct families of correlations were performed to explore this hypothesis.

In the first family of correlations, the maternal strategies typically used in proactive situations (directives regarding toys, questions regarding toys, verbal prompts,

praise, interaction, modeling, and physical prompts) were correlated with observed rates of child compliance (picking-up appropriately), and noncompliance (toy contact) in the toy clean-up situation. These results are presented in Table 5. Using the Bonnferoni technique to control for family-wise error, alpha was fixed at less than or equal to 0.006. A significant positive correlation was found between maternal directives for toys and picking up appropriately ($\underline{r} = .3402$, $\underline{n} = 65$, $\underline{p} \leq .001$), and a significant positive correlation was found between maternal praise and picking up appropriately ($\underline{r} = .3867$, $\underline{n} = 65$, $\underline{p} \leq .001$). Maternal questions regarding toys, verbal prompts, modeling assistance, interaction, and physical prompts were not significantly correlated with picking-up appropriately. A significant negative correlation was obtained between maternal verbal prompts and toy contact ($\underline{r} = -0.3540$, $\underline{n} = 65$, $\underline{p} \leq .004$), as well as between maternal physical prompts and toy contact ($\underline{r} = -4602$, $\underline{n} = 65$, $\underline{p} \leq .000$). Maternal directives regarding toys, questions regarding toys, modeling assistance, interaction, and praise were not significantly correlated with toy contact. A significant positive correlation was obtained between maternal verbal prompts and child negative affect ($\underline{r} = .4286$, $\underline{n} = 65$, $\underline{p} \leq .000$). Likewise a significant positive correlation was obtained between maternal physical prompts and child negative affect ($\underline{r} = .3555$, $\underline{n} = 65$, $\underline{p} \leq .004$). Maternal directives regarding toys, questions regarding toys, modeling assistance, interaction, and praise were not significantly correlated with child negative affect.

In the second family of correlations, maternal strategies typically used in situations where the child is prohibited from doing something (directives regarding forbidden objects and leaving the area, questions regarding forbidden objects or leaving the area, verbal prompts, and physical prompts) were correlated with observed rates of

active noncompliance (touching a forbidden object and leaving the area) in the toy clean-up task. These results are presented in Table 6. Using the Bonnferoni technique to control family-wise error, alpha was fixed at less than or equal to 0.006. A significant positive correlation was obtained between directives (regarding forbidden objects and leaving the area) and touching a forbidden object ($\underline{r} = .7894$, $\underline{n} = 65$, $\underline{p} \leq .000$). Directives (regarding touching a forbidden object and leaving the area) were also significantly positively correlated with leaving the area ($\underline{r} = .5098$, $\underline{n} = 65$, $\underline{p} \leq .000$). No significant correlations were found between maternal questions regarding forbidden objects and leaving the area and the child's touching forbidden objects or leaving the area. A significant positive correlation was obtained with maternal verbal prompts and the child touching a forbidden object ($\underline{r} = .4411$, $\underline{n} = 65$, $\underline{p} \leq .000$) and the child leaving the area ($\underline{r} = .4567$, $\underline{n} = 65$, $\underline{p} \leq .000$). A significant positive correlation was obtained between physical prompts and the child touching a forbidden object ($\underline{r} = 5397$, $\underline{n} = 65$, $\underline{p} \leq .000$) and leaving the area ($\underline{r} = .4235$, $\underline{n} = 65$, $\underline{p} \leq .000$).

In the third family of correlations, all of the maternal behaviors were correlated with observed child negative affect in the toy clean-up task. These results are presented in Table 7. Using the Bonnferoni technique to control family-wise error, alpha was fixed at less than or equal to 0.006. Results indicated a significant positive correlation between maternal verbal prompts and child negative affect ($\underline{r} = .4286$, $\underline{n} = 65$, $\underline{p} \leq .000$) and the child leaving the area ($\underline{r} = . .3555$, $\underline{n} = 65$, $\underline{p} \leq .004$). A significant positive correlation was obtained between physical prompts and the child touching a forbidden object ($\underline{r} = 5397$, $\underline{n} = 65$, $\underline{p} \leq .000$) and leaving the area ($\underline{r} = .4235$, $\underline{n} = 65$, $\underline{p} \leq .000$).

Hypothesis 3. The third hypothesis predicted that toddlers would have higher compliance in response to maternal directives than in response to maternal questions. Existing correlational analyses were examined for the third hypothesis. Since directives - toys were correlated with picking up appropriately and questions-toys were not correlated with picking up appropriately, no further analyses was necessary. These results are presented in Tables 5-7. As described previously, maternal directives regarding toys were significantly positively correlated with the child picking up the toys appropriately (r = .3402, n = 65, $p \leq .006$, Bonnferoni corrected alpha $\leq .006$). Maternal questions regarding toys were not significantly correlated with the picking up the toys appropriately (see Table 5). Maternal directives regarding forbidden objects and leaving the area were significantly positively correlated with the child touching a forbidden object (r = .7894, n = 65, $p \leq .000$) and leaving the area (r = .5098, n = 65, $p \leq .000$). There was no significant correlation between questions regarding forbidden objects or leaving the area and the child touching a forbidden object or leaving the area (see Table 6). Neither maternal directives nor questions regarding toys were significantly negatively correlated with child toy contact or negative affect (see Table 7). Thus, it appears that that this study found a significant positive relationship between directives and child compliance, and no relationship between questions and child compliance, thus confirming the third hypothesis.

Exploratory Analyses

t-tests for Child Behavior on Basis of Gender

Based upon the previously mentioned findings, it was speculated that children's compliance and noncompliance may also differ according to gender. The mean

occurrences and ranges of the 31 males' behavior and 34 females' behaviors are presented in Table 8. To investigate these alternative hypotheses with regards to gender, a series of two-tail independent t-tests were performed between the 31 females and 34 males on the behavioral observations of compliance and noncompliance. These results are discussed in Table 9. Analyses revealed three significant differences between male children and female children on measures of noncompliance. First, male children displayed more instances of touching forbidden objects per interval than female children ($\underline{F}(1, 65) = 10.832$, $\underline{p} \leq .002$). Secondly, male children displayed more instances of leaving the area per interval than female children did ($\underline{F}(1, 65) = 7.025$, $\underline{p} \leq .010$). Thirdly, female children had higher rates of toy contact, or passive noncompliance, than the male children did ($\underline{F}(1, 65) = 4.361$, $\underline{p} \leq .041$). No significant differences were found between the male and female children in negative affect ($\underline{F}(1,65) = .690$, $\underline{p} \leq .409$) or compliance, as measured by picking up the toys appropriately ($\underline{F}(1, 65) = 2.881$, $\underline{p} \leq .095$).

Correlations Between Observed Maternal and Child Behavior by Gender

When maternal behaviors were correlated with child behaviors for the 34 males and the 31 females separately, some interesting findings emerged. These findings are summarized in Tables 10-13. Using the Bonnferoni technique to control family-wise error, alpha was fixed at less than or equal to 0.006. There was not a significant relationship between maternal praise and picking-up appropriately for girls ($\underline{r} = .3162$, $\underline{p} \leq .083$), but there was a significant positive relationship between maternal praise and picking up appropriately for boys ($\underline{r} = 4512$, $\underline{p} \leq .006$). In addition, the correlation between maternal physical prompts and toy contact was not significant for girls ($\underline{r} = -3881$, $\underline{p} \leq .031$), but a significant negative relationship between physical prompts

and toy contact existed for boys ($r = -.4424$, $p \leq .006$). There was not a positive correlation between maternal directives in a prohibitive task and leaving the area for girls ($r = .3918$, $p \leq .029$), but a significant positive correlation existed between maternal directives in a prohibitive task and leaving the area for boys ($r = .4936$, $p \leq .003$). Lastly, there was not a significant correlation between maternal verbal prompts and leaving the area for female children ($r = .0714$, $p \leq .703$), but there was a significant positive correlation between verbal prompts and leaving the area for males ($r = .5353$, $p \leq .000$).

t-tests Between Correlations of Observed Maternal and Child Behaviors

Following an R to Z transformation of the correlations between maternal behavior and child behavior for each sex, t-tests were conducted to determine if the pattern of variance of these correlations were different for boys and girls. These findings are summarized in Tables 14-18. Four areas were significantly different for the children on basis of gender. First, the relationship between maternal interaction and passive noncompliance (toy contact) differed for boys and girls ($t(1,30)=2.123$, $p \leq .05$). Secondly, maternal questions regarding toys and verbal prompts had different patterns with picking up appropriately on the basis of gender ($t(1,30)==2.002$, $p \leq .05$; $t(1,30)=2.05$, $p \leq .05$,). Thirdly, the relationship between maternal directives regarding forbidden objects and leaving the area and touching forbidden objects was different on basis of gender ($t(1,30)=2.00$, $p \leq .05$). Lastly, the relationship between verbal prompts and leaving the area was different for boys than it was for girls ($t(1,30)=2.036$, $p \leq .05$). Thus, it appears that interactional patterns between mothers and their children vary according to the child's gender.

Debriefing

During the debriefing portion of the study, qualitative data were collected regarding the participants' subjective experiences of the study. The purpose of collecting these data was to provide descriptive information about the ecological validity of the study. Ninety percent of mothers found the waiting room situation to be realistic. Five mothers gave responses that specified something about the situation that was less realistic to them (e.g., siblings usually there to provide more distractions, room was more or less entertaining).

Eighty-two percent of the mothers stated that their children behaved as they normally would. Of the twelve mothers who answered no to this question, seven of the mothers said that their children were more behaved than usual. Five of the mothers stated that their children cried more or were more defiant more than normal. All of the mothers agreed that they themselves behaved as they normally would during the toy clean-up task. When spontaneous comments were given, they typically fell into three categories: comments about the experience of being in the study, suggestions of ways to change the study and elaborations on differences in typical behavior. The most common remarks were that the study was interesting and fun (n = 9) and that the study was realistic.

DISCUSSION

This section addresses the following issues. First, the results are discussed with interpretations of the findings. Second, the implications of the findings are discussed with regards to future research and application to everyday mother and child interactions. Third, limitations of the study are offered. Fourth, strengths of this study are discussed,

and fifth, topics for future research are also discussed.

Interpretations of the findings

The first hypothesis addressed the relationship between observed child behavior in a proactive, child toy clean-up task of the average child and checklist data that measured clinical levels of misbehavior. The results of these analyses were mixed. Observed child behavior was not significantly related to either the Intensity or Problem scores on the ECBI. On the CBCL/2-3, the percent of occurrence of a child touching forbidden objects in the toy clean-up situation was related to Externalizing Scale T-scores. Child toy contact, or passive noncompliance, was negatively related to T-scores on the CBCL Externalizing scale. Other forms of observed child behavior were not significantly related to the CBCL/2-3 Total Scale score or to T-scores on the CBCL/2-3 Externalizing scale.

One possible reason for the small number of significant correlations between the ECBI and the CBCL/2-3, and observed child behavior in this study is that these questionnaires measure active misbehavior in children. Active misbehavior during the toy clean-up task (touching forbidden objects and leaving the area, occurred at relatively low rates, thus restricting the range of the data.

Secondly, most measures of toddler compliance have studied active, problematic behavior in children reported by their parents rather than passive noncompliance, such as toy contact, or doing a task differently than instructed. Typically, clinical questionnaires, such as the ECBI and the CBCL/2-3 ask parents to rate how often their children engage in certain misbehaviors, such as arguing, tantrumming, "talking back," messiness, having difficulties with siblings, etc. Very few studies have examined how passive forms of

noncompliance relate to questionnaire data in a toddler population. This study found that passive noncompliance was significantly negatively correlated with measures of externalizing behavior. Thus, it is possible that the questionnaires used in this study were not accurately assessing the behaviors exhibited by the children in this situation.

Research has supported a lack of agreement between questionnaire measures and behavioral observations for classifying "at-risk" pre-school children. Fagot (1995) compared 156 children on two questionnaire measures and two behavioral observation measures. When compared across methods of measurement, only one child was consistently identified as "at-risk" on all four measures. In fact, across measures, the ability to predict at-risk behavior was very close to or below chance. Although behavioral stability of toddlers has been demonstrated with behavioral observation (Fagot, 1984), little consistency has been measured between proactive tasks, such as the toy clean-up task, and questionnaire data.

The second hypothesis of this study addressed the relationship between observed maternal and child behavior during a toy clean-up task. The results indicated some interesting findings concerning the use of maternal techniques. Mothers who used techniques, such as praise and directives that told a child what to do (directives regarding toys), appeared to be more successful in completing the task than mothers who did not use these techniques. Children whose mothers used higher rates of praise directives regarding toys picked up the toys at higher rates than the children whose mothers used lower rates of praise directives regarding toys. These results are also supported in the literature for a group of children aged 15-24 months. They indicated that when mothers

specified the intended child behaviors, children were more compliant than when mothers told them what not to do (i.e., Schaffer & Crook, 1980).

With regards to telling children what not to do, three main trends were seen in the data. First, this study found that mothers who used high rates of "power assertive" techniques had children who exhibited low levels of passive noncompliance. In other words, mothers who often told children what not to do, such as touching forbidden objects or leaving the area and/or used physical prompts, had children who were less likely to engage in toy contact (playing with the toys, holding the toys in their hand for a long period of time, etc.) than children whose mothers who seldom used these restrictive strategies. Additionally, mothers who used high rates of verbal prompts had children who engaged in lower levels of passive noncompliance. Because these data are correlational in nature, it is also possible that children who did not engage in much passive noncompliance were more likely to have mothers who engaged in commanding parenting strategies. This could be particularly true if the child were engaging in active noncompliant behavior, such as tantrumming, or touching things they should not rather than passive noncompliant behaviors. For example, if a child were running out of the room, it would be unlikely that the child would be playing with the toys rather than cleaning them up. Previous research suggests that it is common for mothers to respond to active types of disobedience with prohibitive, highly controlling strategies. It is also possible that the mother and child were continually interacting with one another, and thus continually affecting one another's behavior.

The second trend with prohibitive techniques demonstrated that high rates of verbal and physical prompts by the mother were associated with high rates of child

negative affect (crying, whining, throwing toys, etc.). Because of the lack of control that correlational analyses offer, at least two possibilities exist. It is possible that mothers used physical and verbal prompts in response to children's negative affect, or in an effort to direct children's attention to the required task. However, it is also possible that because verbal and physical prompts are more controlling than proactive techniques, children expressed high rates of negative affect in response to receiving them. This second possibility is supported by existing research (Pfiffner & O'Leary, 1989; Reid et al.,1994), which found that toddler-aged children were more likely to respond to low maternal warmth and nuturance with high rates of negative affect. Another possibility, a more "middle of the road" approach, which has been discussed in early childhood literature, states that mother and child are continually affecting one another's affect. For example, if the child were upset, the mother could respond with more controlling techniques, further increasing the child's negative affective state.

The third trend found that children whose mothers used high rates of directives, verbal prompts, and physical prompts were more likely to have higher rates of touching forbidden objects or leaving the area than mothers who used lower rates of these techniques. Because one can not assume causality based upon correlational data, these results could signify a number of possible findings. First, it is possible that the low child compliance was a product of the mothers' high reliance on more controlling techniques. Existing literature on toddler-aged children's noncompliance, such as Lytton (1980), found that when mothers combined commands with more "negative strategies," such as punishment and criticism, there was lower child compliance than when commands were combined with more positive strategies, such as praise. The data in this study did not

control for combined versus single techniques, however, Lytton's work may still offer insight into this study's findings. A second possibility is that mothers were more likely to respond to overt misbehaviors, such as touching forbidden objects or leaving the area, with highly controlling techniques. Since active misbehaviors are typically more disturbing to parents, it is likely that parents may use stronger techniques to redirect their child's behavior.

The third hypothesis examined the differences between questions and directives on child compliance. Based on these data, it appears that directives are more effective than questions in proactive tasks, such as picking up the toys. Directives were also more effective in reducing passive noncompliance. However, using the present methodology, it is not possible to determine whether directives are more effective than questions regarding active misbehavior, such as touching forbidden objects or leaving the area. These findings are consistent with the existing literature (e.g. Pfiffner and O'Leary, 1994) which determined that directives which were short and firm were more effective than those that were not. It is commonplace for directives to be given in a more terse, firm style than questions. Also, Schaffer and Crook (1980) found imperatives more effective than interrogatives in establishing task compliance with a group of toddler-aged children.

Gender Effects.

Trends in the exploratory analyses offer interesting information regarding gender effects. This study's 31 females and 34 males were compared on behavioral observations of compliance and noncompliance. Results demonstrated that under this study's circumstances, male children were more likely to engage in active misbehavior, such as touching forbidden objects and leaving the area, than the female children were. On the

other hand, female children in this study were more likely to engage in passive noncompliance than the male children were. These findings were consistent with previous research, which found that in certain situations, boys (20-22 months-old) displayed more large motor activity than toddler-aged girls the same age, who were more likely to stay near their mothers (Fagot, 1990). Additionally, early research by Goldberg & Lewis (1967) found gender differences at 13 months. In a longitudinal study of 32 boys and 34 girls in a free play situation, toddler-aged girls often were less active, showed less exploratory behavior, and were more quiet than toddler-aged boys of the same age. Girls tended to have a harder time separating from their mothers, stayed in closer proximity, and made more returns to where their mother was sitting. Additionally, when a barrier was placed between the children and their mothers, toddler-aged boys were more likely to make an active attempt to go around the barrier than the toddler-aged girls were. It is possible that toddler-aged boys and girls may display similar rates of misbehavior, but that toddler-aged boys were more active and toddler-aged girls less active when misbehaving. However, it is likely that most times, active misbehavior is identified because it creates a greater disturbance or inconvenience for the child caregiver. For example, the toddler who is actively running around in a restaurant is oftentimes more likely to be noticed than the child who is simply not eating his or her food.

Furthermore, this study found differences between how mothers and their children interacted on the basis of the child's gender. These data seemed to indicate a stronger relationship between maternal and child behavior for boys as opposed to girls. Three trends were seen between mother and child behavior for boys. First, higher rates of maternal praise were related to higher rates of picking-up appropriately for boys. Second,

higher rates of more punitive strategies, such as physical prompts were related to higher rates of active non-compliance for boys. Specifically, high rates of verbal prompts and directives in a prohibitive task were associated with high rates of leaving the area, and higher rates of physical prompts were related to higher rates of touching forbidden objects. No relationships were significant between mothers' and toddler-aged girls' behavior. Gender differences in toddlers' compliance have rarely been studied. It is unclear why the toddler-aged boys' behavior was more clearly related to maternal behavior in this study. It is possible that there was more variability in the boys' behavior than toddler-aged girls' behavior, which would decrease the chances of a restricted range for boys. This, in turn, would increase the probability of detecting significant relationships as they occurred.

Further statistical manipulations did identify a different pattern of variability between maternal behaviors and child behaviors were different on the basis of gender. Specifically, the relationship between interaction and passive noncompliance (toy contact), questions regarding toys and picking up appropriately, verbal prompts and picking-up appropriately, prohibitive directives and touching forbidden objects, and verbal prompts and leaving the area differed for boys and girls.

All of these findings seem to indicate that mothers interact differently with their children with respect their gender. Research on gender differences and compliance in very toddler-aged children is virtually non-existent. Little has been found to document differences in compliance at such young ages. However, Fagot (1974, 1984b) has demonstrated that parents do react differently to toddler behavior on the basis of their gender. For example, parents were more likely to give reprimands to toddler-aged boys

for active behavior, and more likely to praise active behavior in toddler-aged girls (Fagot & O'Brien, 1994). Therefore, it is likely that the mothers in this particular study may have been more likely to respond to toddler-aged boys more punitively (directives, verbal prompts, and physical prompts) when the boys engaged in active forms of misbehavior (touching forbidden objects, leaving the area), thus supporting the relationship between these two domains for the boys, and not for the girls in this study.

Another interesting finding was that questions and interaction by the mother served different purposes for boys than for girls. Fagot (1984) also found that the style of play by preschool-aged children influenced social reaction by teachers, peers, and parents, particularly when they engaged in traditional gender roles. The differences in maternal interactions and questions could be as a response to traditional gender roles for boys and girls, thus shaping the child's gender-typed activities.

Implications of these findings

There are many interesting implications for these findings, possibly yielding further insight and investigation. First, it seems that when examining effective maternal strategies, one must take into account the type of child behavior being exhibited. Results indicated that passive noncompliance was related to higher levels of directives in a proactive task, and active noncompliance was related to higher levels of directives in a prohibitive task. The type of misbehavior by the child may dictate the best type of counteractive strategy for the mother. Second, one must understand the task in which the child is involved. The findings of this study, which were collected in a proactive, teaching task within a forbidden object paradigm, may differ from a task in which the the task is solely prohibitive (the parent is trying to stop a child from doing something like

arguing with siblings, talking out of turn, misbehaving in the car, etc.).

Lastly, the lack of significant correlations between behavioral data and correlational data have interesting implications for identifying "at-risk" children. Because many children develop behavioral or academic difficulties at some point, it is worth the effort to develop strong methods of identifying children who are at risk for these problems. However, at this time, it is not clinically astute to use solely behavioral criteria or questionnaire data when making these decisions. By doing so, one could fail to identify children who are in need of services, especially in the case of passive noncompliance, which appears to be less clearly related to caretaker behaviors. It is possible that passive noncompliance is a subtle precursor to large, more stable patterns of childhood misbehavior. For these reasons, further study of child passive noncompliance, and its effects on later childhood functioning is needed.

This study found differences in both overall levels of child behavior, as well as the relationship between mothers and their children on basis of the child's gender. These effects have a number of possible implications. First, mothers appear to react differently to male and female children, thereby using strategies that may elicit different responses. Secondly, it also seems that by the ages of two and three children are exhibiting some subtle stable patterns of gender-typed behavior. For example, it may be more socially acceptable for toddler-aged boys to exhibit active misbehavior than toddler-aged girls. Likewise, it may be more socially acceptable for toddler-aged girls to engage in passive noncompliance than it is for toddler-aged boys. Thirdly, it is possible that preprogrammed biological differences between males and females are expressed under these circumstances. Based upon these data, one can not simply explain these phenomena

based upon one or more variables. More research is needed to more clearly ascertain the differences in compliance by gender. However, when attempting to establish what behavior places a child "at-risk," it appears crucial that the scientist-practitioner take into account the child's gender and congruent behavioral expectations of the parent.

Limitations

There are some limitations to the current study. This study was conducted in a controlled laboratory setting that may have limited the mothers' responses to child misbehavior. For example, mothers may be less likely to engage in punitive strategies, such as physical punishment or yelling, when they are aware they are being observed. Although the laboratory setting did provide discipline situations that mothers and toddlers encounter regularly, and most mothers reported that they and their child behaved as they normally would, it is still possible that mothers behaved differently in this laboratory than they do in their own homes.

Another limitation is that the sample was somewhat restricted. The majority of the participants were Caucasian, well-educated, and all parents were mothers. Therefore, the findings have limited external validity with ethnic minorities, mothers with limited education, and fathers. The results of this study can be generalized only to circumstances that closely resemble its environment and conditions.

Another limitation involves the difficulty of interpreting correlational data. As discussed previously in the paper, it is impossible to determine causation or rule out other confounding variables based upon correlations. Experimental studies that randomly assign conditions to groups are needed to strengthen the relationships discussed in this study.

Strengths of the study

The present study also has a number of strengths. First, assessment was conducted across a number of modalities, including interviews, behavioral observations, and checklist data. More specifically, a wide range of observable behavior was also examined. Compared to previous research in this area, this study systematically isolated more parent and child behaviors than is usually done. For example, few studies have examined passive noncompliance, and its relationship to parenting techniques in both proactive and prohibitive tasks. Second, this study was performed in a methodologically superior manner, adhering to strong scientific principles. The behavioral observations were carefully and meticulously performed by pairs of independent observers, who were blind to the hypotheses. A uniform protocol was followed throughout the procedure, and parents often reported that both they and their children acted as they normally would. Third, this study offers a unique contribution to the child literature by studying a different population than much of the existing literature: toddler-aged, non-clinic level children, and their patterns of misbehavior. Lastly, the findings of this study offer a starting point for future scientific inquiry, as discussed below.

Topics for future research

The study of parenting strategies with child misbehavior is very important for the average child. New knowledge may affect the quality of parent-child interactions, and possibly prevent future problems by strengthening the relationship between the parent and child, as well as providing better conflict resolution techniques. These results suggest a number of important directions and topics for future research.

More research is needed exploring the relationship between highly controlling, or "power assertive" techniques and child noncompliance. An experimental study controlling for maternal behaviors could be of great use to examine the causes of child misbehavior in a more thorough manner. Furthermore, sequential analyses of mother and child interactions would record the maternal and child behaviors in the order they occur, thus more clearly depicting parent-child interactional patterns with respect to time. This strategy would be particularly useful when trying to determine patterns of ongoing behavior between parent and child, such as child-parent affect, gender effects, or interaction.

Additionally, more research should be targeted at the relationship between questionnaire data and its relationship to passive noncompliance, particularly in proactive tasks. Because passive noncompliance is not often labeled as misbehavior in the literature, parents or teachers may be less likely to identify and intervene when it occurs. However, by not obeying their parents and teachers in proactive situations, children may be missing a number of important opportunities for their cognitive and social-emotional development. As discussed previously, existing instruments should develop more extensive profiling for the average child with a range of different types and frequencies of misbehaviors. This would aid clinicians in increasing external validity of their interventions, and identifying common responses of children when parenting strategies have been altered.

Furthermore, an item-by-item analysis of questionnaire data may offer more information than an analysis of factor scores. Factor scores are often based upon a "factor analysis" or weighted culmination of items that may or may not fully represent the

construct being measured. By correlating specific items to particular situations, strategies, ages, or genders, one may obtain a more accurate portrayal of the relationship between checklist data and observed behaviors.

More attention should also be directed to the situational effects of particular strategies, such as praise. For example, little is known regarding the types of praise which are the most effective (specific versus vague), for what ages it is the most effective (for example, toddler-aged children versus school-aged children), or if it differs by situation (such as proactive versus prohibitive). In addition, it is unknown what qualities of praise make it effective. For example, it is possible that the strong effects that praise has demonstrated may be explained by voice tone, nonverbal contact, history of the maternal use of praise, or the context in which the praise is used, etc. An experimental study that would control for some or all of these effects could be quite useful in isolating the important factors of praise.

Likewise, aspects of punishment could also be experimentally studied, particularly the relationship between high rates of punishment techniques and high rates of noncompliance. Behavioral theory defines punishment as a consequence to a behavior which decreases the probability of its occurrence. On basis of this definition, a number of techniques could be construed as punishment for a child's misbehavior. Specifically, reprimands, verbal prompts, and physical prompts are all examples of parenting technqiues which could conceivably reduce a child's misbehavior. Understanding whether or not punishment techniques result in higher noncompliance, or rather, is just commonly used with active disobedience could be crucial in developing effective behavioral interventions with the average child who misbehaves during proactive tasks.

In order to determine causation and rule out confounds, different punishment technqiues would have to be randomly assigned to one of two groups and its effect upon noncompliance systematically measured.

Researchers should include other groups when studying discipline strategies to be used with toddler-aged children in order to increase the external validity of experimental results. Studies are needed that compare different age groups, ethnic populations, and SES groups to child and parent behavior in observable discipline situations, as well as on questionnaire data.

Lastly, gender differences need to be further considered when identifying children "at-risk," utilizing questionnaire data, and devising treatment plans. More research which carefully controls for the toddler-aged child's gender is needed to determine the effects of a child's gender on compliance.

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TABLE 1

MEAN OCCURRENCES & RANGES OF PARENT BEHAVIOR

Maternal Behaviors	Mean	Standard Deviation	Minimum	Maximum
Directives (toys) [1]	0.53	0.29	0.07	1.301
Directives (forbidden objects and leaving the area) [1]	0.11	0.14	0.00	0.52
Questions (toys) [1]	0.30	0.16	0.03	0.70
Questions (forbidden objects and leaving the area) [1]	0.03	0.06	0.00	0.32
Verbal Prompts [1]	0.22	0.21	0.00	0.82
Physical Prompts [1]	0.03	0.07	0.00	0.33
Modeling Assistance [2]	40.09	21.50	2.00	88.00
Interaction [2]	26.82	18.18	0.00	75.00
Praise [2]	13.82	11.96	0.00	50.00

1= Number of new instances per interval; 2= Percent of intervals

TABLE 2

MEAN OCCURRENCES AND RANGES OF CHILD BEHAVIOR

Child Behaviors	Mean	Standard Deviation	Minimum	Maximum
Picking Up Toys Appropriately[2]	30.12	20.79	0	73.00
Toy Contact[2]	65.17	22.92	10	100.00
Negative Affect[2]	18.94	21.39	0	89.00
Touching a forbidden object[1]	0.07	0.08	0	0.35
Leaving the area[1]	0.02	0.03	0	0.10

1= Number of new instances per interval; 2= Percent of intervals

TABLE 3

MEAN SCORES AND RANGES OF CHECKLIST DATA

Checklist Scores	Mean	Standard Deviation	Minimum	Maximum
Eyberg Child Behavior Inventory Intensity Score	106.48	21.79	36	154
Eyberg Child Behavior Inventory Problem Score	9.97	10.21	0	60
Child Behavior Checklist Total Problems T-Score	38.18	14.46	8	70
Child Behavior Checklist Externalizing T-Score	15.05	6.01	1	28

1= Number of new instances per interval; 2= Percent of intervals

1= Number of new instances per interval; 2= Percent of intervals

TABLE 4

CORRELATIONS BETWEEN CHECKLIST MEASURES OF EXTERNALIZING BEHAVIOR IN CHILDREN AND CHILD NONCOMPLIANCE

EYBERG CHILD BEHAVIOR INVENTORY

Child Behaviors	Intensity Score	Problem Score
Toy Contact[2]	.0261 (n = 64, p = .838)	-.1232 (n = 64, p = .332)
Negative Affect[2]	.1010 (n = 64, p = .027)	-.0724 (n = 64, p = .570)
Touching a forbidden object[1]	.0804 (n = 64, p = .527)	.2113 (n = 64, p = .094)
Leaving the area[1]	-.1667 (n = 64, p = .188)	-.0435 (n = 64, p = .733)

CHILD BEHAVIOR CHECKLIST

Child Behaviors	Externalizing Scale	Total Score
Toy Contact[2]	-.3246** (n=65, p=.004)	-.2045 (n=65, p=.102)
Negative Affect[2]	-.0215 (n=65, p= .865)	.1477 (n=65, p=.240)
Touching a forbidden object[1]	.3604** (n=65, p=.003)	.2468 (n=65, p=.047)
Leaving the area[1]	.1427 (n=65, p=.065)	-.1548 (n=65, p=.218)

** Significant following Bonnferoni Corrections, $\alpha = .006$

1= Number of new instances per interval; 2= Percent of intervals

TABLE 5

CORRELATIONS BETWEEN CHILD BEHAVIORS
AND PARENT BEHAVIORS

	Picking Up Appropriately	Toy Contact
Directives (toys)[1]	.3402** (n = 65, p = .006)	-.1776 (n = 65, p = .159)
Questions (toys)[1]	.1791 (n=65, p = .153)	-.3089 (n = 65, p = .012)
Verbal Prompts[1]	-.1410 (n = 65, p = .262)	-.3540** (n = 65, p = .004)
Modeling Assistance[1]	.1739 (n = 65, p = .166)	-.2836 (n = 65, p = .022)
Interaction[2]	-.0034 (n = 65, p = .978)	-.1354 (n = 65, p = .282)
Praise[2]	.3867** (n = 65, p = .001)	-.2058 (n = 65, p = .100)
Physical Prompts[1]	-.1844 (n = 65, p = .141)	-.4602** (n = 65, p = .000)

** Significant following Bonnferoni Corrections, $\alpha = .001$,

1= Number of new instances per interval; 2= Percent of intervals

TABLE 6

CORRELATIONS BETWEEN CHILD BEHAVIORS AND PARENT BEHAVIORS

	Touching a forbidden object	Leaving the area
Directives (FO/LA)[1]	.7894** (n = 65, p = .000)	.5098** (n = 65, p = .000)
Questions (FO/LA)[1]	.2352 (n = 65, p = .059)	.1965 (n = 65, p = .117)
Verbal Prompts[1]	.4411** (n = 65, p = .000)	.4567** (n = 65, p = .000)
Physical Prompts[1]	.5397** (n = 65, p = .000)	.4235** (n = 65, p = .000)

** Significant following Bonnferoni Corrections, $\alpha = .006$,

1= Number of new instances per interval; 2= Percent of intervals

TABLE 7

CORRELATIONS BETWEEN PARENT BEHAVIORS AND CHILD NEGATIVE AFFECT

	Negative Affect
Directives (toys)[1]	.1049 (n=65, p = .406)
Questions (toys)[1]	.1370 (n = 65, p = .267)
Directives (Fo/LA)	.2395 (n = 65, p = .055)
Questions (FO/LA)	-.0251 (n = 65, p = .843)
Verbal Prompts[1]	.4286** (n = 65, p = .000)
Modeling Assistance[1]	.2383 (n = 65, p = .056)
Interaction[2]	.1164 (n = 65, p = .356)
Praise[2]	-.0617 (n = 65, p = .626)
Physical Prompts[1]	.3555** (n = 65, p = .004)

* Significant following Bonnferoni Corrections, $\alpha = .006$

1= Number of new instances per interval; 2= Percent of intervals

TABLE 8

MEAN OCCURRENCES AND RANGES OF CHILD BEHAVIOR BY GENDER

FEMALES

Child Behaviors	Mean	Standard Deviation	Minimum	Maximum
Picking Up Toys Appropriately[2]	28.7419	19.6519	0.00	73.00
Toy Contact[2]	70.6129	18.4077	35.00	100.00
Negative Affect[2]	15.0000	19.7435	0.00	89.00
Touching a forbidden object[1]	0.0352	0.0566	0.00	0.23
Leaving the area[1]	0.0119	0.0208	0.00	0.07

MALES

Child Behaviors	Mean	Standard Deviation	Minimum	Maximum
Picking Up Toys Appropriately[2]	31.3824	21.9862	0.00	70.00
Toy Contact[2]	60.2059	25.6371	10.00	98.00
Negative Affect[2]	22.1765	22.4317	0.00	87.00
Touching a forbidden object	0.0926	0.0939	0.00	0.35
Leaving the area	0.0262	0.0371	0.00	0.17

1= Number of new instances per interval; 2= Percent of intervals

TABLE 9

MEAN DIFFERENCES FOR CHILD BEHAVIOR BY GENDER

	Females	Males	F-value	df	2-tail significance
Toy Contact[2]	M = 70.61 s.d. = 18.41	M = 60.21 s.d.=25.64	4.361	59	0.041*
Picking Up Appropriately[2]	M = 28.74 s.d.=19.65	M = 31.38 s.d.= 21.99	2.881	59	0.095
Negative Affect[2]	M = 15.00 s.d.=19.74	M = 22.1765 s.d.= 22.43	0.690	59	0.409
Touching a forbidden object[1]	M = 0.0352 s.d.= 0.057	M = 0.0926 s.d.= 0.094	10.832	59	0.002*
Leaving the area[1]	M = 0.0119 s.d.= 0.02	M =0 .0262 s.d.= 0.037	7.025	59	0.010*

* Statistically Significant, $p \leq .05$ level

1= Number of new instances per interval; 2= Percent of intervals

TABLE 10

CORRELATIONS OF CHILD AND PARENT BEHAVIORS BY CHILD'S GENDER

FEMALES

	Directives – toys[1]	Questions-toys[1]	Verbal prompt[1]	Praise[2]	Interaction[2]	Physical Prompt[1]
Appropriate Picking up[2]	.4198 (p≤.019)	.4212 (p≤.018)	.1630 (p≤.381)	.3162 (p≤.083)	.1182 (p≤.527)	.0715 (p≤.702)
Toy Contact[2]	-.1440 (p≤.440)	-.3717 (p≤.039)	-.4531 (p≤.010)	-.1451 (p≤.436)	-.4159 (p≤.020)	-.3881 (p≤.031)

MALES

	Directives – toys[1]	Questions-toys[1]	Verbal prompt[1]	Praise[2]	Interaction[2]	Physical Prompt[1]
Appropriate Picking up[2]	0.2885 (p≤.098)	-.0654 (p≤.713)	-.3497 (p≤.043)	.4512** (p≤.006)	-.1268 (p≤.475)	-.3322 (p≤.055)
Toy Contact[2]	-.1440 (p≤.440)	-.2129 (p≤.227)	-.2443 (p≤.164)	-.2664 (p≤.128)	.1065 (p≤.549)	-.4424** (p≤.006)

** Significant following Bonnferoni Corrections, $\alpha = .006$

1= Number of new instances per interval; 2= Percent of intervals

TABLE 11

CORRELATIONS OF MATERNAL BEHAVIORS AND CHILD NEGATIVE AFFECT BY CHILD'S GENDER

FEMALES

	Directives toys[1]	Directives FO/LA[1]	Questions FO/LA[1]	Questions-toys[1]
Negative Affect[2]	.2115 (p≤.245)	.2139 (p≤ .224)	-.0351 (p≤ .844)	.1687 (p≤.356)
	Verbal prompt[1]	Praise[2]	Interaction[2]	Physical Prompt[1]
Negative Affect[2]	.3548 (p≤.046)	-.1559 (p≤.394)	.1051 (p≤.567)	.2126 (p≤.243)

MALES

	Directives – toys[1]	Directives FO/LA	Questions FO/LA	Questions-toys[1]
Negative Affect[2]	-.0623 (p≤.726)	.1709 (p≤ .350)	-.1045 (p≤ .937)	.0494 (p≤.781)
	Verbal prompt[1]	Praise[2]	Interaction[2]	Physical Prompt[1]
Negative Affect[2]	.4367 (p≤.010)	.0019 (p≤.992)	.1076 (p≤.545)	.3879 (p≤.023)

* Significant following Bonnferoni Corrections, $\alpha = .006$

1= Number of new instances per interval; 2= Percent of intervals

TABLE 12

CORRELATIONS OF PARENT AND CHILD BEHAVIOR BY CHILD GENDER

FEMALES

	Directives (forbidden objects or leaving the area)[1]	Questions (forbidden objects or leaving the area)[1]	Verbal prompt[1]	Physical Prompt[1]
Touching a Forbidden Object[1]	.5817** (p≤.000)	.3505 (p≤.050)	.2800 (p≤.127)	.7113** (p≤.000)
Leaving the Area[1]	.3918 (p≤.029)	.3819 (p≤.034)	.0714 (p≤.703)	.2241 (p≤.226)

MALES

	Directives (forbidden objects or leaving the area)[1]	Questions (forbidden objects or leaving the area)[1]	Verbal prompt[1]	Physical Prompt[1]
Touching a Forbidden Object[1]	.8087** (p≤.000)	.1927 (p≤.275)	.4118 (p≤0.16)	.4936** (p≤003)
Leaving the Area[1]	.4936** (p≤.003)	.1115 (p≤.530)	.5353** (p≤.001)	.4044 (p≤0.18)

* Significant following Bonnferoni Corrections, $\alpha = .006$

1= Number of new instances per interval; 2= Percent of intervals

TABLE 13

CORRELATIONS BETWEEN CHILD BEHAVIORS AND PARENT BEHAVIORS BY GENDER

FEMALES

	Picking Up Appropriately	Toy Contact
Directives (forbidden object / leaving the area)[1]	-0.1516 (n=34, p≤ .392)	-.4245 (n=34, p≤ .012)*
Questions (forbidden object / leaving the area)[1]	-.1892 (n=34, p≤ .284)	-.2146 (n=34, p≤ .223)

MALES

Maternal Behavior	Picking Up Appropriately	Toy Contact
Directives (forbidden object)[1]	-0.0939 (n=31, p≤ .615)	-.2432 (n=31, p≤ .187)
Questions (forbidden object)[1]	-.0534 (n=31, p≤ .775)	-.3831 (n=31, p≤ .033)

* = Significant following Bonnferoni Corrections, $\alpha = .007$

1= Number of new instances per interval; 2= Percent of intervals

TABLE 14

t-TEST RESULTS FOR THE COMPARISON OF MEAN CORRELATIONS FOR MATERNAL BEHAVIORS AND THE CHILD'S INSTANCES OF TOUCHING FORBIDDEN OBJECTS BY THE CHILD'S GENDER FOLLOWING FISHER'S R TO Z TRANSFORMATION

	Boys' Mean Number of Instances of Touching Forbidden Objects per Interval	Girls' Mean Number of Instances of Touching Forbidden Objects per Interval	t-values
Directives regarding forbidden objects or leaving the area[1]	0.8087	0.5817	1.9977*
Questions regarding forbidden objects or leaving the area[1]	0.01927	0.3505	0.614
Verbal prompt[1]	0.4118	0.2800	0.5810
Physical Prompt[1]	0.4936	0.7113	-1.6284

* Statistically Significant, $p \leq .05$

1= Number of new instances per interval; 2= Percent of intervals

TABLE 15

t -TEST RESULTS FOR THE COMPARISON OF MEAN CORRELATIONS FOR MATERNAL BEHAVIORS AND THE CHILD'S INSTANCES OF LEAVING THE AREA BY THE CHILD'S GENDER FOLLOWING FISHER'S R TO Z TRANSFORMATION

	Boys' Leaving the Area[1]	Girls' Leaving the Area[1]	t-values
Directives regarding forbidden objects or leaving the area[1]	0.4936	0.3918	0.4911
Questions regarding forbidden objects or leaving the area[1]	0.1115	0.3819	-1.1238
Verbal prompt[1]	0.5353	0.0714	2.0361*
Physical Prompt[1]	0.4044	0.2241	0.7778

* Statistically Significant, $p \leq .05$

1= Number of new instances per interval; 2= Percent of intervals

TABLE 16

t -TEST RESULTS FOR THE COMPARISON OF MEAN CORRELATIONS FOR MATERNAL BEHAVIORS AND THE PERCENTAGE OF PICKING UP APPROPRIATELY BY THE CHILD'S GENDER FOLLOWING FISHER'S R TO Z TRANSFORMATION

	Boys' Mean Percentage of Picking Up Appropriately	Girls' Mean Percentage of Picking Up Appropriately	t-values
Directives regarding toys[1]	0.2885	0.4198	-0.5826
Questions regarding toys[1]	-0.654	0.4212	-2.0021*
Directives regarding forbidden objects or leaving the area[1]	-0.0939	-0.1516	0.2268
Questions regarding forbidden objects or leaving the area[1]	0.0534	-0.1892	0.9482
Verbal prompt[1]	-0.3497	0.1630	-2.0499*
Praise[2]	0.4512	0.3162	0.6146
Interaction[2]	-.1268	0.1182	-0.9532
Physical Prompt[1]	-.3322	0.0715	-1.6138

* Statistically Significant, $p \leq .05$

1= Number of new instances per interval; 2= Percent of intervals

TABLE 17

t -TEST RESULTS FOR THE COMPARISON OF MEAN CORRELATIONS FOR PARENT AND THE CHILD'S PERCENTAGE OF TOY CONTACT BY THE CHILD'S GENDER FOLLOWING FISHER'S R TO Z TRANSFORMATION

	Boys' Mean Percentage of Toy Contact	Girls' Mean Percentage of Toy Contact	t-values
Directives -toys[1]	-0.0781	-0.1440	0.2584
Questions -toys[1]	-0.2129	-0.3717	0.6742
Directives - forbidden objects or leaving the area[1]	-0.2432	-0.4245	0.7794
Questions - forbidden objects or leaving the area[1]	-0.3831	-0.2146	-0.7143
Verbal prompt[1]	-0.2443	-0.4531	0.9261
Praise[2]	-0.1065	-0.4159	-0.4910
Interaction[2]	0.1065	-0.4159	2.1275*
Physical Prompt[1]	-0.4424	-0.3881	0.2541

* Statistically Significant, $p \leq .05$

1= Number of new instances per interval; 2= Percent of intervals

TABLE 18

t -TEST RESULTS FOR THE COMPARISON OF MEAN CORRELATIONS FOR PARENT AND THE CHILD'S PERCENTAGE OF NEGATIVE AFFECT BY THE CHILD'S GENDER FOLLOWING FISHER'S R TO Z TRANSFORMATION

	Boys' Mean Percentage of Negative Affect	Girls' Mean Percentage of Negative Affect	t-values
Directives - toys[1]	-0.0623	-0.2115	-1.0727
Questions - toys[1]	0.0494	0.1687	-0.4679
Directives - forbidden objects or leaving the area[1]	0.1709	0.2139	-0.1729
Questions - forbidden objects or leaving the area[1]	-0.0145	-0.0351	0.0798
Verbal prompt[1]	0.4367	0.3548	0.3763
Praise	0.0019	-0.1559	0.6158
Interaction	0.1076	0.1051	0.0098
Physical Prompt[1]	0.3879	0.2126	0.7487

* Statistically Significant, $p \leq .05$

1= Number of new instances per interval; 2= Percent of intervals

APPENDIX A -- DEMOGRAPHICS QUESTIONNAIRE

Demographics Questionnaire

Please complete this confidential questionnaire. An answer to every question is requested.

1. Your relationship to the child:

2. Your sex: Female___ Male

3. Your age:

4. Your race:

5. Highest level of education completed (circle year):
   1 2 3 4 5 6 7 8 (Grade school)
   9 10 11 12 (High school)
   13 14 15 16 (College)
   17 and over (Graduate school)

6. Your occupation:

7. Marital status: Single___ Married___ Divorced
   Separated___ Other

8. Total family income per month:
   Less than $800___ $800-$1000___ $1001-$1500
   $1501-$2000___ $2001-$2500___ over $2500

9. If married, please provide the following information about your spouse:
   a. his/her relationship to the child:

   b. his/her age:

   c. his/her race:

   d. his/her highest level of education completed (circle)
      1 2 3 4 5 6 7 8 (Grade school)
      9 10 11 12 (High school)
      13 14 15 16 (College)

17 and over (Graduate school)

e. his/her occupation:

10. Does the child have siblings? Sex_____ Age__
Sex_____ Age__
Sex_____ Age

11. Please provide the following information about your child:

a. date of birth

b. sex: female___ male

c. race:

12. Developmental milestones:
At what age did your child:

a. sit independently

b. crawl

c. walk independently

13. What is your child's primary means of getting around?

14. Any difficulty riding a trike or bike?

15. Has your child ever been considered clumsy?

16. Does your child enjoy playground equipment?.

17. Does your child seem fearful of spaces (going up and down stairs, riding a teeter totter)?

18. Does your child seem weaker or stronger than normal?

19. Does your child have difficulty using tools (pencil, fork)?

20. Which hand does your child favor most often?

21. Do you consider your child's attention span to be good?

22. Is your child on any medication at this time?
If so, please list:

APPENDIX B -- CHILD BEHAVIOR CHECKLIST

CHILD BEHAVIOR CHECKLIST FOR AGES 2-3

For office use only
ID #

CHILD'S FULL NAME: First Middle Last

GENDER: ☐ Boy ☐ Girl

AGE

ETHNIC GROUP OR RACE

TODAY'S DATE: Mo. _____ Date _____ Yr. _____

CHILD'S BIRTHDATE: Mo. _____ Date _____ Yr. _____

Please fill out this form to reflect *your* view of the child's behavior even if other people might not agree. Feel free to print additional comments beside each item and in the space provided on page 2.

PARENTS' USUAL TYPE OF WORK, even if not working now *(Please be specific—for example, auto mechanic, high school teacher, homemaker, laborer, lathe operator, shoe salesman, army sergeant.)*

FATHER'S TYPE OF WORK: _____

MOTHER'S TYPE OF WORK: _____

THIS FORM FILLED OUT BY:

☐ Mother (full name): _____

☐ Father (full name): _____

☐ Other—Specify full name & relationship to child: _____

Below is a list of items that describe children. For each item that describes the child ***now or within the past 2 months,*** please circle the ***2*** if the item is ***very true*** or ***often true*** of the child. Circle the ***1*** if the item is ***somewhat or sometimes true*** of the child. If the item is ***not true*** of the child, circle the ***0***. Please answer all items as well as you can, even if some do not seem to apply to the child.

0 = Not True (as far as you know) 1 = Somewhat or Sometimes True 2 = Very True or Often True

0	1	2	1.	Aches or pains (without medical cause)
0	1	2	2.	Acts too young for age
0	1	2	3.	Afraid to try new things
0	1	2	4.	Avoids looking others in the eye
0	1	2	5.	Can't concentrate, can't pay attention for long
0	1	2	6.	Can't sit still or restless
0	1	2	7.	Can't stand having things out of place
0	1	2	8.	Can't stand waiting; wants everything now
0	1	2	9.	Chews on things that aren't edible
0	1	2	10.	Clings to adults or too dependent
0	1	2	11.	Constantly seeks help
0	1	2	12.	Constipated, doesn't move bowels
0	1	2	13.	Cries a lot
0	1	2	14.	Cruel to animals
0	1	2	15.	Defiant
0	1	2	16.	Demands must be met immediately
0	1	2	17.	Destroys his/her own things
0	1	2	18.	Destroys things belonging to his/her family or other children
0	1	2	19.	Diarrhea or loose bowels when not sick
0	1	2	20.	Disobedient
0	1	2	21.	Disturbed by any change in routine
0	1	2	22.	Doesn't want to sleep alone
0	1	2	23.	Doesn't answer when people talk to him/her
0	1	2	24.	Doesn't eat well (describe): _____
0	1	2	25.	Doesn't get along with other children
0	1	2	26.	Doesn't know how to have fun, acts like a little adult
0	1	2	27.	Doesn't seem to feel guilty after misbehaving
0	1	2	28.	Doesn't want to go out of home
0	1	2	29.	Easily frustrated
0	1	2	30.	Easily jealous
0	1	2	31.	Eats or drinks things that are not food—don't include sweets (describe): _____
0	1	2	32.	Fears certain animals, situations, or places (describe): _____
0	1	2	33.	Feelings are easily hurt
0	1	2	34.	Gets hurt a lot, accident-prone
0	1	2	35.	Gets in many fights
0	1	2	36.	Gets into everything
0	1	2	37.	Gets too upset when separated from parents
0	1	2	38.	Has trouble getting to sleep
0	1	2	39.	Headaches (without medical cause)
0	1	2	40.	Hits others
0	1	2	41.	Holds his/her breath
0	1	2	42.	Hurts animals or people without meaning to
0	1	2	43.	Looks unhappy without good reason
0	1	2	44.	Angry moods
0	1	2	45.	Nausea, feels sick (without medical cause)
0	1	2	46.	Nervous movements or twitching (describe): _____
0	1	2	47.	Nervous, highstrung, or tense
0	1	2	48.	Nightmares
0	1	2	49.	Overeating
0	1	2	50.	Overtired
0	1	2	51.	Overweight
0	1	2	52.	Painful bowel movements
0	1	2	53.	Physically attacks people
0	1	2	54.	Picks nose, skin, or other parts of body (describe): _____
0	1	2	55.	Plays with own sex parts too much
0	1	2	56.	Poorly coordinated or clumsy
0	1	2	57.	Problems with eyes (without medical cause) (describe): _____
0	1	2	58.	Punishment doesn't change his/her behavior
0	1	2	59.	Quickly shifts from one activity to another
0	1	2	60.	Rashes or other skin problems (without medical cause)
0	1	2	61.	Refuses to eat
0	1	2	62.	Refuses to play active games
0	1	2	63.	Repeatedly rocks head or body
0	1	2	64.	Resists going to bed at night

Please see other side

7-96 Edition

0	1	2	65. Resists toilet training (describe): _____	0	1	2	82. Sudden changes in mood or feelings
				0	1	2	83. Sulks a lot
0	1	2	66. Screams a lot	0	1	2	84. Talks or cries out in sleep
0	1	2	67. Seems unresponsive to affection	0	1	2	85. Temper tantrums or hot temper
0	1	2	68. Self-conscious or easily embarrassed	0	1	2	86. Too concerned with neatness or cleanliness
0	1	2	69. Selfish or won't share	0	1	2	87. Too fearful or anxious
0	1	2	70. Shows little affection toward people	0	1	2	88. Uncooperative
0	1	2	71. Shows little interest in things around him/her	0	1	2	89. Underactive, slow moving, or lacks energy
0	1	2	72. Shows too little fear of getting hurt	0	1	2	90. Unhappy, sad, or depressed
0	1	2	73. Too shy or timid	0	1	2	91. Unusually loud
0	1	2	74. Sleeps less than most children during day and/or night (describe): _____	0	1	2	92. Upset by new people or situations (describe): _____
0	1	2	75. Smears or plays with bowel movements	0	1	2	93. Vomiting, throwing up (without medical cause)
0	1	2	76. Speech problem (describe): _____	0	1	2	94. Wakes up often at night
				0	1	2	95. Wanders away from home
0	1	2	77. Stares into space or seems preoccupied	0	1	2	96. Wants a lot of attention
0	1	2	78. Stomachaches or cramps (without medical cause)	0	1	2	97. Whining
				0	1	2	98. Withdrawn, doesn't get involved with others
0	1	2	79. Stores up many things he/she doesn't need (describe): _____	0	1	2	99. Worries
							100. Please write in any problems your child has that were not listed above.
0	1	2	80. Strange behavior (describe): _____	0	1	2	_____
				0	1	2	_____
0	1	2	81. Stubborn, sullen, or irritable	0	1	2	_____

PLEASE BE SURE YOU HAVE ANSWERED ALL ITEMS. UNDERLINE ANY YOU ARE CONCERNED ABOUT.

Does the child have any illness or disability (either physical or mental)? ☐ **No** ☐ **Yes—Please describe:**

What concerns you most about the child?

Please describe the best things about the child:

APPENDIX C -- EYBERG CHILD BEHAVIOR INVENTORY

ID#_____

Instructions: Below are a series of phrases that describe children's behavior. Please (1) circle the number describing how often the behavior currently occurs with your child, and (2) circle "yes" or "no" to indicate whether the behavior is currently a problem for you.

	How often does this occur with your child?							Is this a problem for you?	
	Never		Seldom	Sometimes	Often		Always		
1. Dawdles in getting dressed	1	2	3	4	5	6	7	yes	no
2. Dawdles or lingers at mealtimes	1	2	3	4	5	6	7	yes	no
3. Has poor table manners	1	2	3	4	5	6	7	yes	no
4. Refuses to eat food presented	1	2	3	4	5	6	7	yes	no
5. Refuses to do chores when asked	1	2	3	4	5	6	7	yes	no
6. Slow in getting ready for bed	1	2	3	4	5	6	7	yes	no
7. Refuses to go to bed on time	1	2	3	4	5	6	7	yes	no
8. Does not obey house rules on own	1	2	3	4	5	6	7	yes	no
9. Refuses to obey until threatened with punishment	1	2	3	4	5	6	7	yes	no
10. Acts defiant when told to do something	1	2	3	4	5	6	7	yes	no
11. Argues with parents about rules	1	2	3	4	5	6	7	yes	no
12. Gets angry when doesn't get his/her own way	1	2	3	4	5	6	7	yes	no

	How often does this occur with your child? Never		Seldom	Sometimes	Often		Always	Is this a problem for you?	
13. Has temper tantrums	1	2	3	4	5	6	7	yes	no
14. Sasses adults	1	2	3	4	5	6	7	yes	no
15. Whines	1	2	3	4	5	6	7	yes	no
16. Cries easily	1	2	3	4	5	6	7	yes	no
17. Yells or screams	1	2	3	4	5	6	7	yes	no
18. Hits parents	1	2	3	4	5	6	7	yes	no
19. Destroys toys and other objects	1	2	3	4	5	6	7	yes	no
20. Is careless with toys and other objects	1	2	3	4	5	6	7	yes	no
21. Steals	1	2	3	4	5	6	7	yes	no
22. Lies	1	2	3	4	5	6	7	yes	no
23. Teases or provokes other children	1	2	3	4	5	6	7	yes	no
24. Verbally fights with friends his/her own age	1	2	3	4	5	6	7	yes	no
25. Verbally fights with sisters and brothers	1	2	3	4	5	6	7	yes	no
26. Physically fights with friends his/her own age	1	2	3	4	5	6	7	yes	no

	How often does this occur with your child? Never		Seldom	Sometimes	Often		Always	Is this a problem for you?	
27. Physically fights with sisters and brothers	1	2	3	4	5	6	7	yes	no
28. Constantly seeks attention	1	2	3	4	5	6	7	yes	no
29. Interrupts	1	2	3	4	5	6	7	yes	no
30. Is easily distracted	1	2	3	4	5	6	7	yes	no
31. Has short attention span	1	2	3	4	5	6	7	yes	no
32. Fails to finish tasks or projects	1	2	3	4	5	6	7	yes	no
33. Has difficulty entertaining himself/herself alone	1	2	3	4	5	6	7	yes	no
34. Has difficulty concentrating on one thing	1	2	3	4	5	6	7	yes	no
35. Is overactive or restless	1	2	3	4	5	6	7	yes	no
36. Wets the bed	1	2	3	4	5	6	7	yes	no

APPENDIX D -- CONSENT FORM

Informed Consent Statement

Project Title: The Effects of Parenting Strategies on Child Compliance

Investigators: Maureen Sullivan, Ph.D. and Jenny Perry, M.S., Cindy Nichols-Anderson, M.S.E., M.A.

A. Purpose: This study will examine the effects of different parenting strategies on children's behavior and feelings. This study will also gather information on the frequency and severity of behavior problems in young children.

B. Procedures: I, (print name)
hereby authorize the above named researchers or assistants of their choosing to direct my participation in the following procedures:

1. Completion of four questionnaires. One questionnaire will ask for demographic information such as number and age of household family members, income, occupation, etc. One questionnaire will ask about typical parenting strategies you use with your child. Two questionnaires will assess your child's typical behaviors and behavior problems. We will also ask you to rate your current mood periodically.

2. Participation in a one hour videotaped procedure in which you and your child will engage in activities similar to those you would find in the waiting room of a doctor's office or styling salon. You will be instructing your child to play with toys, clean up toys, and have a short "quiet time." There will also be some tempting "forbidden objects" in the room which your child should not play with and an area in which the child must stay. You will be asked to use reprimands such as, "No, don't touch that. Put it back," in response to your child's touching a forbidden object. You will be asked to use distraction, such as, "Come and play with the toys," if you child leaves the area. You will also be asked to give periodic praise statements, such as, "You're playing so nicely," in response to appropriate play. This situation is designed to elicit misbehavior from young children so that we may observe discipline strategies.

C. Duration of participation: Your participation is completely voluntary and may be ended at any point. This study involves approximately two hours of your time.

D. Confidentiality: All information about you and your child will be kept confidential and will not be released. Questionnaires and videotapes will have subject numbers, rather than names, on them. All information will be kept in a secure place that is open only to the researchers and their assistants. This information will be saved as long as it is scientifically useful; typically, such information is kept for five years after publication of the results of a study. Results from this study may be presented at professional meetings or in publications. You and your child will not be identified individually; we will be looking at the group as a whole. Your anonymity will be preserved.

E. Benefits of participation: If you are interested, we will send you a copy of the results of the study when it is finished. Your child will be given a small prize for his or her participation, and you will receive coupons from various local businesses

F. Risks of participation: The risks to you and your child are minimal. It is possible that some children may become upset during the procedure. If this happens, we will try to make your child more comfortable with the situation. Similarly, some mothers may become uncomfortable with the situation. If either you or your child become too upset or uncomfortable, you will be asked if you would like to stop the procedure at that point, with no penalty. You may also choose to stop at any time, even without our asking you. In completing the questionnaires, some mothers might become aware that their child's behavior is not typical for his or her age. You will be offered several names and phone numbers of agencies that work with parents and children in case you wish to obtain psychological services to assess or treat developmental or behavioral problems.

I have been fully informed about the procedures listed here. I am aware of what my child and I will be asked to do and of the benefits and risks of my participation. I also understand the following statements:

*I affirm that I am 18 years of age or older.

*I understand that my participation is voluntary, that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time, without penalty.

*I understand that I may contact any of the researchers at the following addresses and phone numbers, should I desire to discuss my participation in this study and/or request information about the results of the study: Maureen A. Sullivan, Ph.D., 215 N. Murray Hall, Dept. of Psychology, Oklahoma State University, Stillwater, OK 74078-0250, (405) 744-6027. I may also contact University Research Services, 005 Life Sciences East, Oklahoma State University, Stillwater, OK, 74078, (405) 744-9992.

*I have read and fully understand this consent form. I sign it freely and voluntarily. A copy of this form will be given to me. I hereby give permission for my child's and my participation in this study.

_____

Signature of Parent/Legal Guardian Date

I certify that I have personally explained this document before requesting that the participant sign it.

_____

Signature of Researcher Date

APPENDIX E -- OBSERVATIONAL CODE FOR BOTH PARENT AND CHILD BEHAVIORS DURING THE TOY CLEAN-UP SITUATION

Toy Compliance Task
Parent Code

I. DIRECTIVES

Whenever the parent gives a verbal command for the child to engage in ANY behavior. These can be explicit (Put the toys away) and implied (There's one more over here, etc.). Directives can also be instructions for how not to do something (i.e." You don't need to bring that box to me.") Instructions are also considered directives. Directives must be words, not just sounds (e.g., SHH! or Hmmm!) These sounds would be coded as interaction.

Some examples include:

1. Christopher, come back here.
2. You stay here a little bit while mommy finishes work.
3. Singing the Barney song is an example of a directive. "Clean up, clean-up, everybody, every day."
4. Mommy's going to work on questionnaires (this is an implied directive).
5. Parker, that's not a toy (implied) [after he touches a FO].
6. No, that's my chair (implied).
7. We can't touch those things. Mommy can't touch them and neither can you.
8. You are doing it, just the opposite way.
9. Come here. Come Back
10. Counting the toys the child puts in the bin. "You've got one...you've got two"
11. "Barney put all of his stuff in the box, so can you."
12. "Mommy can't reach that toy, but you can" (implied)
13. "There's one more over here"
14. Counting the toys the child puts in the bin (implied)
15. We need to go (other)
16. You missed.

Directives will be categorized into three groups:

1) Toys (t) = The directive is targeted at the child's behavior involving picking up a toy.

Example: Chris it is time to pick up the toys.

2) Forbidden object or leaving the area (f) = The directive involves the child touching a forbidden object or leaving the area.

Example: John, don't touch that. (after he touches a forbidden object).

Parker, you need to stay over here (after he leaves the area).

3) Other (o)= The directive is targeted at behaviors other than toys or forbidden objects.
Example: Jane, don't play with your shoe. Put your shoes away.
"Ah no, we don't do that" (after child throws a toy)

Length (long/short) = (l/s)
Directives are coded as long if they are eight or more words. They are coded as short if they are 7 words or less. A child's name is counted in the directive, request, or warning.
Examples: "No Janey, don't touch that" (5 words=short)
"Come back, Kyle, do not leave the area (8 words=long)"

Repeated directives- Sometimes mothers repeat directives in the same interval. They are scored as a single directive unless:
1) More than two seconds occur between the first and second directive;
2) Another conversational element (request, warning, interaction, etc.) occurs between two directives.
3) If the directive concerns two different behaviors, they are scored separately as two directives. (Example: John, come back in here [after LA] and pick up your toys).

Carryovers - If a directive begins in one interval and continues into the next interval, circle the D in the first box and draw a line connecting the D in the first box to the D in the second box.

Multiple directives - For more than one directive in an interval, code the first directive as usual (circle the "D"). For the second reprimand, make an X over the appropriate symbol. Do not code toy, forbidden object, other, or long, or short for the second directive. Like any directive, the second directive may carry over to the next interval, indicated by a line drawn from the X to the next interval. If there are two or more directives, ignore them, even if they carry over.

If the child touches two or more different FO's without a two second pause between them in one interval, and the mother gives two directives (one corresponding to each FO) without a two second pause in between, score 2 directives in that interval.

If the mother gives two different directives concerning two different behaviors, record them as two different directives. Examples: " Come here (after child leaves the area). "Pick up your toys." "Chelsea, come back." "You need to put the toy in the box" This is different than a long string of directives for the same behavior. If all of the directives are directed at the same behavior, and not separated by a two-second pause, record them as one directive.

Directives with the puzzle/ crate of shapes

If a mother tells the child to put the puzzle together or put the shapes in the crate, then code the maternal instructions as directives, warnings, or questions for task-related behavior.

II. QUESTIONS

Whenever the parent asks a child a question concerning a toy, forbidden object, leaving the area, or other area. If there is an "ok?" at the end of a directive, it is labeled as a question. Questions are asked for compliance purposes rather than for conversation or interaction. If questions are mainly conversational, they are coded as interaction. Examples of conversational questions would be "Where are your orange socks?" "Did you steal mommy's chair?" "Is that truck going fast?"

Examples of questions are:

1. George, pick up the puzzle piece, o.k. ?
2. Can you get your puzzle and put it in the toys box please?
3. Can you help me pick up the chair?
4. "Will all the toys fit into the box?"
5. "Will that block fit into the crate too?"
6. "Is this floor messy?"

Questions are also categorized into three groups:

1) Toys (t)- the question is targeted at the child's behavior involving a toy.

Examples: Can you pick up the truck for me please? Put the block in the box, o.k.?

2) Forbidden object or leaving the area (f) = The question involves the child touching a forbidden object or leaving the area. Example: John, can you please put down the cookie? Joe, can you stop playing with the mobile? Natalie, can you leave the typewriter alone?

3) Other (o) = The question is targeted at behaviors other than toys or forbidden objects. Examples: Chris, can you please get down from mom's chair? Chris, can you get up off the floor? Can you listen to you mom for a second? Oops, oh did you throw that?

Length (long/short) = (l/s)

Questions are coded as long if they are eight or more words. They are coded as short if they are 7 words or less. A child's name is counted in the directive, question, or warning.

Repeated questions- Sometimes mothers repeat questions in the same interval. They are scored as a single question unless:

1) Two or more seconds occur between the first and second question. Example: Parker, can you come back here please? (2 second pause). Can you pick up the toys in here like you do at home?
2) Another conversational element (directive, warning, interaction, etc.) occurs between two questions. Example: Mary can you pick up the toy? It sure is pretty, isn't it? Can you pick it up?
3) If the question concerns two different behaviors, they are coded separately as two questions. Example: John can you come back in here [after LA] and pick up your toys? Chris, can you come back here and leave the typewriter alone?

Carryovers - If a question begins in one interval and continues into the next interval, circle the R in the first box and draw a line connecting the R in the first box to the R in the second box.

Multiple questions - For more than one question in an interval, code the first question as usual (circle the "R"). For the second reprimand, make an X over the appropriate symbol. Do not code toy, forbidden object, other, or long, or short for the second question. Like any question, the second question may carry over to the next interval, indicated by a line drawn from the X to the next interval. If there are more than two questions, ignore them, even if they carry over.

III. WARNINGS

Statements that:
1) Describe aversive consequences that will happen if the child does not behave in a particular manner (example = pick up the blocks or we will go home); or
2) A statement said by the parent to protect the child from his/her actions (Be careful not to pinch your fingers). If a parent counts (Example: "one...two...") this is regarded as a warning.
3) Are reprimands for a forbidden object before the child touches it.
4) A reprimand for leaving the area before the child leaves the area.

You will need to examine the behavior it is directed at in order to determine how to code it. Again, warnings will be categorized into three groups:

1) Toys (t) = The warning is targeted at the child's behavior involving compliance with a toy. Examples: Chris, pick up your toys, or there will be no cookies later. Chris, do you want a spanking?
2) Forbidden object or leaving the area (f) = The warning involves the child touching a forbidden object or leaving the area. Example: John, don't leave the room or you'll be in big trouble. Careful, don't touch that mobile (mobile is an FO).

3. Other (o)= The directive is targeted at behaviors other than toy compliance or forbidden objects. Example: Be careful not to pinch your fingers. Example: Watch your hand.

Length (long/short) = (l/s)
Warnings are coded as long if they are eight or more words. They are coded as short if they are 7 words or less. A child's name is counted in the directive, question, or warning.

Repeated warnings- Sometimes mothers repeat warnings in the same interval. They are scored as a single warning unless:
1) Two or more seconds occur between the first and second warning;
2) Another conversational element (directive, question, interaction, etc.) occurs between two warnings.
3) If the warning concerns two different behaviors, then they are scored as two warnings.
example: John, get back in here [after LA] and pick up your toys, or else you will have to go to bed early tonight.

Carryovers - If a warning begins in one interval and continues into the next interval, circle the W in the first box and draw a line connecting the W in the first box to the W in the second box.

Multiple warnings - For more than one warning in an interval, code the first warning as usual (circle the "W"). For the second reprimand, make an X over the appropriate symbol. Do not code toy, forbidden object, other, or long, or short for the second warning. Like any warning, the second warning may carry over to the next interval, indicated by a line drawn from the X to the next interval. If there are two or more warnings, ignore them, even if they carry over.

IV. PROMPTS (VP)
There are two types of prompts. The are both score as VP.
1) **A verbal prompt** is scored when the parent exhibits short, verbal statements or questions to orient the child to the task at hand. To score verbal prompt, circle VP in the coding box. The child's name may be said in a variety of tones, but as long as the purpose is to get the child's attention on the task at hand, it is scored as a verbal prompt.
"Come here" or "Come back" is always a verbal prompt within the play area, even if the child is touching an FO. "Come here" or "come back" is a always a directive if the child is outside the play area.
"Come on" is always a verbal prompt.
"There" is always a verbal prompt if given by itself.
"Here" is always a verbal prompt if given by itself.

Examples include:

1. Oh you know what? (VP). There are a lot of toys to be picked up (D).
2. Come on. (VP) Jamie, can you pick up the block? (Q)
3. Can you help me out?
4. Can you be a big boy?
5. Parker (child's name). [**surrounded** by a two second pause].
6. Hey you!
7. Come here (if the child has not left the area)
8. See?

2) **Orientation prompt** is scored when the mother touches the child in order to gain the child's attention. It consists of a short, physical touch done to orient the child to the task at hand. The orientation prompt can not be longer than two seconds, or it is scored (I) or (PP).

Any physical contact while the child is touching an FO or outside the area is a physical prompt (PP), and not a VP. Examples include 1. Tapping; 2. Snapping; 3. Tapping her fingers; 4. Tapping a pencil.

Examples **do not** include:
1. Any physical touches lasting more than two seconds. If this occurs it is scored as nonverbal interaction (I) or physical prompt (PP).
2. Pointing (This is MA)
3. Tapping the child with a toy (MA)
4. Any physical touch when the child is touching an FO (PP)
5. The mother bringing the child back into the area (PP)
6. Any physical touch for affection purposes (I).

Repeated prompts- Sometimes mothers repeat verbal prompts in the same interval. They are scored as a single verbal prompt unless:
1) Two or more seconds occur between the first and second verbal prompt;
2) Another conversational element (directive, question, interaction, etc.) occurs between two verbal prompts.

Carryovers - If a verbal prompt begins in one interval and continues into the next interval, circle the VP in the first box and draw a line connecting the VP in the first box to the VP in the second box.

Multiple verbal prompts - For more than one verbal prompt in an interval, code the first verbal prompt as usual (circle the "VP"). For the second reprimand, make an X over the appropriate symbol. Like any verbal prompt, the second verbal prompt may carry over to the next interval, indicated by a line drawn from the X to the next interval. If there are two or more verbal prompts, ignore them, even if they carry over.

V. PHYSICAL PROMPT

Physical contact during a reprimand situation is coded as a physical prompt. A reprimand situation happens when a child touches a previously specified forbidden object or leaves the area. Spanking that happens in any situation is PP.

Examples:

1. Pulling a child away from a FO.
2. Carrying the child back into the area.
3. Taking a FO away from a child.
4. Physically guiding the child to throw objects into the crate.
5. Tapping (if the child is touching an FO).
6. Clapping clearly done to get the child's attention.

Physical prompts are scored by circling PP. They can be recorded twice, if it is separated by two or more seconds or is given for two different misbehaviors. Physical prompts may carryover into the next interval, as indicated by circling the PP and drawing a line to the next box.

VI. MODELING

Whenever the parent shows the child what s/he is being directed to do or aids the child in the toy clean-up task, it is labeled modeling. This includes the mother putting toys in the crate herself, handing the toys to the child, moving the toys near to the crate, moving the crate towards the child, or pointing to where the child should put the toys. All movement of the toys toward the crate or the child in a task related manner is considered to be modeling and not interaction. Examples include: Clapping that is clearly positive. "There you go" "Way to go" "Thank you" (unless said in a sarcastic tone). Do not code nonverbal approval, such as smiles, nods, etc. as praise. The only nonverbal is clapping.

VII. PRAISE

Score praise by circling P on the coding sheet. P is only circled once, even if the praise stops and starts within the same interval. Do not carryover P from one interval to the next; if praise is occurring at the interval change, just circle P in both intervals.

VIII. INTERACTION

There are two types of interaction (they are both coded with an "I"):

Verbal interaction = Any parental comment or statement other than what has been defined as a reprimand, praise, request, or directive.

Examples: Chatting with the child.
Laughing with the child.
"No, that piece doesn't fit" (instructions)
"Where are all of the Dalmatians?"

"That mobile is pretty isn't it?"
"Thank you" (if said sarcastically)

Nonverbal interaction = affectionate gestures initiated by the mother (example = patting the child's head or holding the child). Also included is handing the child a toy or playing with the same toy (example = holding the puzzle board when the child puts the puzzle in place). NOT included are physical prompts, such as bringing a child back into an area or just holding a toy without ongoing interaction with the child.

Score interaction by circling I on the coding sheet. I is only circled once, even if the interaction stops and starts within the same interval. Do not carryover I from one interval to the next; if interaction is occurring at the interval change, just circle I in both intervals.

IX. NONE OF THE ABOVE

If none of the above behaviors occurs in an interval, cross it out by drawing a diagonal slash through the interval box. Examples include the mother working on questionnaires or reading a magazine without interacting with the child.

Toy Compliance Task
Child Code

Child Behavior Research Lab 3/96

I. FORBIDDEN OBJECT

The child is forbidden to play with any objects located on the tabletops. Forbidden objects include the candy jar/ plates of cookies, radio/globe, tape recorder/ typewriter, pencil and paper caddies with contents, and hanging mobiles. NOT included are tabletops, undersides of tables, the mother's clipboard and pen, magazines, the baby gate, and all of the toys on the floor.

It may be useful to think of each forbidden object as having a six inch "halo" around it, which the child is not allowed to violate. The child does not need to actually touch a forbidden object for FO to be scored. The child only needs to be oriented towards the object and have his/her hand within six inches of it to "violate FO space."

Score FO when:

1. The child comes within six inches of a FO for any length of time. Violation of FO space can occur with any part of the body as long as the child is either facing the object or his/her hand is within six inches. If the child's hand is within six inches of the FO, however, the child does not have to be facing the object.

2. The child comes within six inches of a forbidden object with another object (example = s/he comes within 6 inches of the candy jar with a stuffed toy). This excludes accidental brushes or near brushes of objects with other objects. For example if the child is swinging a toy around and it happens to come within six inches of the mobile, do not score FO.

3. If a child picks up an FO, even if told by the mother, score as FO.

** DO NOT score FO if a child accidentally brushes up against a FO with some part of his/her body other than the hand (example child accidentally gets tangled in the mobile)

Carryovers

If a FO begins in one interval and extends to another interval, score it in both intervals, regardless of the length of time FO occurred in either interval. To do this, circle FO in the first interval and draw a line connecting it to the FO in the second interval. Only circle the symbol in the first interval in which it occurs. If FO occurs right on the interval change, score FO only in both intervals.

Multiple Instances of FO

If a child comes within six inches of an FO, stops for more than 2 full seconds, then either comes within 6 inches of the same FO or a new FO within the same interval, score another instance of FO in the same interval. To do this, circle FO as usual for the first instance, and then draw a slash in the circle for the second instance. If a second instance occurs, make another slash, to form an X in the circle. Remember ----- a circle means it happened once, a slash in a circle means it happened twice, and a circle with an X means it happened three times.

If the second or third instance of FO carries over into the next interval, DO NOT AUTOMATICALLY CIRCLE FO IN THE NEXT INTERVAL. Draw a line connecting the slash or X from the first interval to the uncircled FO in the second interval. If more than three instances of FO occur in any interval, ignore the FO's after the third one.

If two forbidden objects come to be within six inches of each other (say the plate of cookies and the globe), the child is not automatically scored for two FO's. Score FO only for the forbidden object to which the child is closest to touching. Only count multiple instances of FO if the child comes within 6 inches of one FO, then comes within 6 inches of another, or when two full seconds separate violations of FO space.

Blocked View

When a child's body is blocking your view of the FO:

1. If you can see both movement in the child's arm, shoulder, or back, and hear the child touch the FO, score FO.
2. If you cannot tell when the child first comes within 6 inches of the FO, do not score it until you can see that it has actually occurred (even if the mother reprimands the child before you see the child come within six inches of it.

II. LEAVING THE AREA

Score LA when:

1. Any part of the child's body is over or past the baby gate.
2. The child is lying over the baby gate, with half of his/her body on the outside.
3. The child's foot is raised to the height of the baby gate within the enclosed area. The child must be oriented toward the baby gate and be within one foot of it.
4. If the baby gate has fallen on the floor, score LA if more than half of the child's foot is on the baby gate.
5. If a child wanders off screen, continue coding LA. If the child carried a forbidden object with her/him, continue coding FO also. CONTINUE CODING LA UNTIL THE CHILD'S ENTIRE BODY IS ENTIRELY WITHIN THE PLAY AREA.
6. If the child wanders off screen with a toy which they are picking up, do not score PA.

*** DO NOT score LA when the child is touching or playing with the baby gate while within the area (even if extending over the gate). If a child grabs the baby gate while trying to balance himself/herself to get up but takes fewer than two seconds, do not score

LA. LA is also not scored if a child is picking up a toy from outside the area awhile his/her feet are still within the area.

Leaving the area, like touching a forbidden object, is a discrete behavior and may occur more than once in an interval or carry over from one interval to the next. Like FO, multiple instances of LA in one interval are indicated by circling LA on the coding sheet for the first instance, putting a slash through LA on the second instance, and making an X through LA on the third instance. Carryovers are noted again by drawing a line from the circled LA in one interval to the LA in the next. Again, you need only circle the symbol in the first interval for a carryover behavior.

III. TOY CONTACT

Score TC when:
1. The child touches or plays with appropriate toys in a manner inconsistent with task goals. (For example, the child plays with the dump truck rather than putting it in the crate). This does not include incidental contact with toys by the feet, or accidental brushes with toys.

2. The child is assembling or dissembling toys in the crate. The crate is neither a forbidden object or an appropriate toy.

*** note*** Occasionally, a mother will instruct a child to put a puzzle together as a part of picking up the toys. If this occurs, do not score TC. Remember, the mother needs to instruct the child AS A PART OF THE CLEAN-UP PROCEDURE.

3. If a child picks up a toy and holds it in her hand for longer than **3 seconds**, it is considered TC.

Multiple Instances

If TC begins in one interval and extends to another interval, score it in both intervals, regardless of the length of time TC occurred in either interval. To do this, circle TC in both intervals. If TC occurs right on the interval change, score TC in both intervals.

Blocked View

When a child's body is blocking your view of the TC:
1. If you can see both movement in the child's arm, shoulder, or back, and her the child touch the TC, score TC.
2. If you cannot tell when the child first comes into contact with the TC, do not score it until you can see that it has actually occurred (even if the mother reprimands the child before you see the child come in contact with it.

IV. PICKING-UP APPROPRIATELY

Score PA when:

1. The child is actively involved in picking up toys
2. The child is putting toys away (they are in her hand for less than 3 seconds).
3. The child and the mother are putting away a toy together.

*** Note: The child must actively be touching the toys to be score PA. The six inch rule does not apply to PA.

DO NOT score PA when:

1. The child is playing with toys.
2. The child is playing with the crate.
3. The child is playing with toys inside the crate.
4. The child is sitting by the toys but is not putting them away, or is simply making noises.
5. The child's mother is putting the toys away, and the child is only watching.
6. If the child picks up a toy and angrily throws it into the crate, NA, and not PA is scored.
7. If the child is tantrumming, yelling, or otherwise engaging in NA, do not score PA.
8. A child picks up a toy and holds it in her hand for longer than 3 seconds (this is TC).

Multiple Instances

If PA begins in one interval and extends to another interval, score it in both intervals, regardless of the length of time PA occurred in either interval. To do this, circle PA in both intervals. If PA occurs right on the interval change, score PA only in both intervals.

V. NEGATIVE AFFECT

The negative affect category includes all child behavior, both verbal and nonverbal, that is unpleasant or aversive.

Examples:

Whining
crying
hitting
kicking
biting
throwing
tantruming
screaming

Code NA for all verbal defiance--when the child says "no" in response to a command, directive or direct request from the mother. It is important to be able to

distinguish the mother's conversational equations from directives, as many mothers state their directives in the form of a question. For example, "Why don't you pick up the rings?" followed by a "no" would be coded NA if immediate compliance were expected, and if it were not just a conversational suggestion. Often the mother's tone of voice will help distinguish a command from conversation, and you will be able to determine whether to code "no" as NA.

WHINY. some children are very whiny an distressed. It is a good idea to listen to a whole tape before coding NA (whiny) to get a good feel for variations in the child's affective style (so you'll know when the child is whiny and when s/he is not). Whining is usually clear if the child is upset or angry, and it should be score as NA. Whining when the child is <u>frustrated</u> (e.g., trying to fit a puzzle piece) is also NA.

Examples of NA:
1. (in a nasal voice, more highly pitched than usual; has a siren-like quality) "Mommy, I want to play with the toys!)
2. (in a whiny voice) "I don't want to"
3. "You stop it mommy:"
4. (while picking up toys) "no, no, no." Outbursts are coded NA.
5. (grunts, whines) "uh, I can't do it..."
6. "stop that mommy" The child tells the mother to stop filling out questionnaires. This is a negative command.
7. "I can't" in a whiny voice, in the context of frustration.

Examples of non-NA
1. Pushing the mother away without discernible force and unaccompanied by yelling, whining, or other NA behaviors.
2. Tossing, throwing toys, or other objects without discernible force. Any throwing at the mother is NA.
3. Banging two or more toys or other objects together.
4. Talking loudly or shouting. This is distinguished from screaming by the absence of a shrill quality.
5. Pulling at the mother's clipboard.
6. "No," used in conversational speech. For example" There are no blocks here mommy."

VI. SOLICITATION FOR MOTHER'S ATTENTION

Verbal solicitations for mother's attention (SA) are scored when the child attempts to gain mother's attention by asking questions about the mother's behavior. For example, when the mother is filling out questionnaires and the child says to her, "Mommy what are you doing?" or "Hey, mommy." or "Come here, mommy," SA is coded. Other examples include:

1. "Mama, help me"
2. "look, look, look"
3. "Can I have one"
4. "Mama what's that?" (points to windchimes?)

Nonverbal solicitations include:

1. the child crawling into mother's lap,
2. child leaning against mother,
3. child patting mother's arm or leg,
4. grabbing mother's clipboard or pen,
5. child throwing toys toward the mother.
6. child engages in "pick me up" behavior (reaches arms out and whines and says "up")
7. child points to an FO or PA, makes a sound, and looks at the mother. If the child does not look in the mother's direction, but just points and names an FO, then SA is not coded.

SA is also NOT coded when the mother initiates contact.

** DO NOT score SA if the child is talking but is clearly not asking the mother questions or is not looking at the mother when talking. For example, young children will often babble to themselves continuously but are not oriented toward the mother or looking at her. They are not trying to get her attention and are not typically eliciting a response, so SA would not be coded.

**Stop scoring SA when the mother responds to the child's SA and picks up the child or talks to the child. If the child initiates a new SA or continues the same SA even after the mother responds, continue scoring SA.

** SA and NA can be scored together (and often are). One does not override the other.

VII. NONE OF THE ABOVE

If none of the above behaviors occurs in an interval, cross out the interval by drawing a diagonal slash through the interval box.

APPENDIX F -- IRB APPROVAL FORM

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 11-01-95 **IRB#:** AS-93-026C

Proposal Title: THE EFFECTS OF REASONING AND NURTURANCE ON CHILD COMPLIANCE

Principal Investigator(s): Maureen A. Sullivan, Cindy Nichols-Anderson

Reviewed and Processed as: Continuation

Approval Status Recommended by Reviewer(s): Approved

ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING.
APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL.
ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Reasons for Deferral or Disapproval are as follows:

Modifications also received and approved.

Signature: 
Chair of Institutional Review Board

Date: November 28, 1995

VITA

Cindy Nichols-Anderson

Candidate for the Degree of Master of Science

Thesis: TODDLER COMPLIANCE AND PARENTING STRATEGIES IN A TOY CLEAN-UP TASK

Major Field: Psychology

Biographical:

Education: Graduated from Onalaska Luther High School, Onalaska, WI in May, 1988; received Bachelor of Arts Degree in Psychology with a minor in Honor Studies from Winona State University, Winona, MN in February, 1992; received a Masters of Science in Education in School Psychology from University of Wisconsin-Eau Claire, Eau Claire, WI in August of 1993; received a Masters of Arts in Clinical Psychology from Mankato State University, Mankato, MN in July of 1995. Completed the requirements for the Master of Science degree with a major in Psychology at Oklahoma State University in 12/97.

Experience: Employed by University of Wisconsin Eau-Claire, Mankato State University, and Oklahoma State University as a graduate assistant, performing both research and teaching activities 1993-1997; served as a Psychological Associate at University of Wisconsin - Eau Claire, Mankato State University, and Oklahoma State University from 1993-1997.

Professional Memberships: American Psychological Association, Association for the Advancement of Behavior Therapy, Minnesota Association of Behavioral Analysis and Therapy, Oklahoma Psychological Association, American Association of University Women.

Honors: Who's Who Among Graduate Students Award, 1995; Psi Chi (Honor's Program in Psychology) 1990-1992; Winona State University Honors' Program Graduate, 1992; MSUSA Penny Fellowship 1992