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Teaching Mothers to Use Promised Consequences with Their Children

A Dissertation Presented

by

Daniela Jade Owen

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Abstract of the Dissertation

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Noncompliance in early childhood is the top reason why parents seek out mental health services for young children (Chamberlain & Smith, 2003; Schuhmann, Durning, Eyberg, & Boggs, 1996) and, if untreated, early childhood noncompliance has been found to develop into more profound problems (e.g., Campbell, 1991; McMahon, 1994). Promised consequences — consequences for noncompliance stated with a directive prior to child action — are associated with greater likelihood of child compliance (Owen, Slep, & Heyman, in press). Seventy-five mother-child dyads were recruited to participate in this promised consequences training study. Dyads were randomly assigned to a modeling only condition (MO), a modeling plus directed interaction condition (MDI), or a no training control condition (C). Mothers practiced using promised consequences during a 35-minute mother-child interaction, including a clean-up and an independent play period. Mothers in the two experimental conditions delivered promised consequences more than mothers in the control condition, and mothers in the MDI condition were more likely to

follow through with promised consequences than mothers in the control condition. Children did not comply differently based on condition. Mothers in the training experimental conditions reported greater efficacy expectancies for their abilities to use promised consequences and greater outcome expectancies for their children's compliance with promise consequences than mothers in the control condition. Neither efficacy expectancies nor outcome expectancies mediated the relationship between condition and maternal use of promised consequences during the mother-child interaction. Promised consequences may be a beneficial disciplinary technique to add to parent training programs because it is both portable and adaptable to several situations. Teaching promised consequences by using a modeling plus directed interaction method is recommended for more complete learning in a brief training format. Further exploration of how promised consequences work and whether they offer a long term benefit are recommended.

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## Teaching Mothers to Use Promised Consequences with Their Children

Child problem behavior is the number one reason parents seek mental health services for their children young children (Chamberlain & Smith, 2003; Schuhmann, Durning, Eyberg, & Boggs, 1996). Problem behavior is most often characterized by noncompliance (Nixon, 2002; Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998). If untreated, noncompliance has been noted to persist throughout childhood into adolescence (Campbell & Ewing, 1990). High rates of noncompliance can be a developmental precursor to a variety of disruptive behavior problems and disorders including conduct problems (Degangi, Breinbauer, Doussard, Roosevelt, Porges & Greenspan, 2000; Egeland, Kalkoske, Gottesman, & Erickson, 1990; McMahon, 1994), hyperactivity/ADHD (Barkley, 1998; Campbell, 1991; Campbell, Breaux, Ewing, & Szumowski, 1986; Egeland et al., 1990; McMahon, 1994; Schuhmann et al., 1998), aggression (Campbell, 1991; Campbell et al., 1986; Schuhmann, et al., 1998), and oppositional-defiant disorder (Schuhmann, et al., 1998).

Because noncompliance has been found to persist and develop into more negative outcomes, reducing noncompliant behavior early in development has been an important focus of parenting interventions. Parenting programs train parents in specific skills and ways of interacting with their children to reduce noncompliance and to increase prosocial behavior. For example, brief, clear, non-threatening directives have been found to decrease noncompliance (e.g., Donovan, Leavitt, & Walsh, 2000; Eyberg & Boggs, 1998;

Webster-Stratton & Hancock, 1998; Webster-Stratton & Herbert, 1994). However, positive outcomes of programs are not universal (for meta-analyses see Lundahl, Risser, & Lovejoy, 2006; Maughan, Christiansen, Jenson, Olympia, & Clark, 2005). To potentially further improve parenting programs investigators must continue to explore parenting behaviors that can increase child compliance. The current study sought to determine if training mothers in a specific parenting technique — promised consequences — resulted in greater likelihood of compliance in children of trained mothers compared with untrained mothers.

### *Promised Consequences*

Promised consequences for noncompliance are a type of warning. In the current study, mothers were taught to use promised consequences when their children did not comply with stated instructions. Although the use of warnings for not following instructions has been studied, there remains some controversy over whether warnings result in greater child compliance (e.g., Roberts, 1982) or not (e.g., Jones, Sloane, & Roberts, 1992). Parenting programs that teach mothers to use warnings typically focus on warning of time-out (e.g., Eyberg & Robinson, 1982; Webster-Stratton; 2008), but the current study focused on warning about or promising a broader set of consequences. In her review of the child socialization literature, Maccoby (1992) suggested that by repeatedly experiencing positive and negative consequences contingent on their behavior, children are socialized to evoke positive consequences and avoid negative consequences. Verbally alerting children to consequences before they act may socialize appropriate behavior.

Owen, Slep, and Heyman (in press) investigated whether children were more likely to comply when their mothers paired directives with promised consequences for compliance or noncompliance compared with when they stated directives alone. Owen et al. (in press) observed mother-child dyads during a thirty minute interaction and found that children were more likely to comply when mothers' stated a directed with the consequence for compliance or noncompliance than when they stated a directive alone. Consequences verbalized along with directives were termed "promised consequences."

Owen et al. (in press) also observed child responses to promised consequences that were negative (e.g., "you will be put in time out," "I will take away that toy") and positive (e.g., "you will get a cookie," "I will be so proud of you"). Negative promised consequences, compared with positive promised consequences, were more likely to be associated with compliance. Negative consequences may be effectively punishing because they increase anxiety (Cole, Barrett, & Zahn-Waxler, 1992; Kochanska, 1995) and children attempt to avoid aversive stimuli to decrease their anxiety levels; whereas positive consequences may not invoke a similarly salient or intense emotional response.<sup>1</sup> In the present study, parents were taught to promise negative consequences for noncompliance because we focused specifically on reducing noncompliance in the moment.

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<sup>1</sup> Although negative promised consequences were observed to have a greater association with compliance than were positive promised consequences, positivity is still essential in mother-toddler interactions. Interactions characterized by positive, warm, and supportive verbalizations from the mother may induce positive mood in the child, which has been shown to increase compliance (Lay, Waters, & Park, 1989). Positive attention helps reinforce prosocial behavior (Danforth, 1998) by indicating to the child that their mother approves of that specific behavior, which may further encourage compliance. Immediate versus a distal outcome were more likely to be associated with compliance.

Owen et al. (in press) found that promised consequences that indicated an immediate versus a distal outcome were more likely to be associated with compliance. This finding was consistent with that of Mistr and Glenn (1992) who found that children were more likely to comply when an immediate versus distal consequence was verbalized. In the present study, parents were taught to promise immediate consequences for noncompliance.

Although Owen et al. (in press) did not find a difference in compliance when promised consequences were specific versus vague, others have suggested that specificity makes parental verbalizations clearer and easier to comply with (Chi, 1985; Westerman, 1990). In addition, most parent training programs emphasize giving directives that are specific, clear, and simple (Eyberg & Robinson, 1982; Forehand & Long, 1991; Webster-Stratton, 1981) to increase compliance. Consistent with these notions, parents were taught to use specific promised consequences for noncompliance in the present study.

#### *Follow-through*

Consequences that are consistent with verbalized promised consequences demonstrate that supposed outcomes match actual outcomes. Strand, Wahler, and Herring (2001) found that reinforcement history influences future compliance; therefore, maternal follow through with promised consequences may increase the likelihood of compliance because children learn that promised consequences match actual consequences. In the present study, we hypothesized that mothers in the experimental conditions would be more likely to follow through with promised consequences than mothers in the control condition, and that children in the experimental conditions would be significantly more likely to comply than children in the control condition.

### *Types of Parent Training*

Behavioral parent training programs have been found to be the most effective interventions for the families of noncompliant children (Kazdin, 1997; Lonigan, Elbert, & Johnson, 1998), resulting in both short-term and long-term improvements in parenting skills and attitudes as well as child compliance (Brestan & Eyberg, 1998). Completion of evidence-based behavioral parent training programs has been associated with decreases in maladaptive parenting (Eyberg & Robinson, 1982; Taylor & Biglan, 1998; Webster-Stratton, 1981). Most parent training programs focus directly on altering parent behavior, which then impacts child behavior (August, Realmuto, Hektner, & Bloomquist, 2001; Barrera, Biglan, Taylor, Gunn, Smolkowski, Black, et al., 2002; Danforth, 1998; Eisenstadt, Eyberg, McNeil, Newcomb, & Funderburk, 1993, Eyberg & Robinson, 1982; McGoey, Eckert, & DePaul, 2002; Peed, Roberts, & Forehand, 1977; Reid, Eddy, Fetrow, & Stoolmiller, 1999; Reid, Webster-Stratton, & Baydar, 2004; Webster-Stratton, 1981, 1984).

Behavioral programs use several methods of training, but most common are modeling (e.g., Sanders & Dadds, 1982; Sanders, 1999; Webster-Stratton, 1981) and directed interaction (e.g., Eisenstadt, Eyberg, McNeil, Newcomb, & Funderburk, 1993; Eyberg & Robinson, 1982; Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998). Modeling can be done with a live model (usually the experimenter) or with a video-recorded model demonstrating the skill. O'Dell and colleagues (1979, 1980, 1984) and Webster-Stratton (1984) found that video-recorded modeling is an effective and efficient method of parent training. A meta-analysis found no difference in how well parents were able to repeat a modeled skill when the experimenter modeled the skill live compared to

when parents watched a video-recording of the skill (Lundahl, Risser, & Lovejoy, 2006). In the present study, video-recorded modeling was used. We hypothesized that mothers in the modeling only condition would demonstrate greater use of promised consequences and greater likelihood to follow-through with promised consequences (when appropriate) than would mothers in the control condition.

Directed interaction is a method of parent training that guides parents via a bug-in-the-ear device during interactions with their children. In parent-child interaction training (PCIT; Eyberg & Robinson, 1982), parents are taught through didactic instruction, modeling, and role play, and they are then monitored through feedback from the experimenter as they interact with their child. By practicing skills with their children and continually receiving feedback about how to most closely match their behavior to the trained technique, parents immediately experience the effects that the trained techniques have on their children (Eyberg & Robinson, 1982). Thus, we posited that practicing promised consequences with in vivo guidance from the experimenter (i.e., verbatim promised consequences and instructions on when and how to follow-through with consequences for noncompliance told to mothers via an earphone) would lead parents to use the technique. We hypothesized that mothers in the modeling plus directed interaction condition would demonstrate greater use of promised consequences and greater likelihood to follow-through with promised consequences than would mothers in the control condition.

The lack of direct comparison of methods is due in part to the fact that the parenting programs that employ these different methods are distinct in other ways. The current study focused on teaching mothers a specific parenting technique — promising

consequences — using the two major methods. By teaching mothers the same technique with modeling only and modeling plus directed interaction, we sought to help clarify which method yielded greater outcomes in parent and child behaviors. We hypothesized that the in vivo reminders for mothers in the modeling plus directed interaction condition would result in a greater likelihood to follow-through with promised consequences than mothers in the modeling-only condition.

### *Efficacy Expectancies*

Different training methods may also differentially affect how mothers feel about their ability to parent. Bandura termed expectations of ability for a certain task “efficacy expectancies” (1977, 1982). According to Bandura’s (1977) theory, efficacy expectancies influence acquisition, inhibition, and disinhibition of behaviors. Bandura (1977) posited that people begin a task with a certain amount of self-efficacy about their capacity to complete the task successfully. Greater self-efficacy, in general, has been linked to better use of positive parenting skills and greater persistence in challenging situations (Ardelt & Eccles, 2001; Bandura, 1982; Donovan, 1981; Donovan & Leavitt, 1989; Elder, 1995). Conversely, a poor sense of self-efficacy has been associated with poor parenting practices (Bugental & Cortez, 1988; Jones & Prinz, 2005; Lagacé-Séguin & d’Entremont, 2006).

Self-efficacy can be improved by modeling of the task (Bandura, 1977; Bandura, Adams, & Beyer, 1977; Berry, 1999) and persuasion, or verbal coaxing by others, about the relevance of the task (Bandura, 1977). Successful completion of the task has also been linked to enhanced self-efficacy (Bandura, 1977; Berry, 1999; Jones & Prinz, 2005). Teaching parents skills that reduce child noncompliance and make parents feel more

capable is clearly useful (Bandura, Blanchard, & Ritter, 1969; Bandura, Adams, Hardy, & Howells, 1980; Jones & Prinz, 2005). Whether certain methods of parent training improve skill acquisition and sense of efficacy over other methods has not yet been explored empirically. We were interested in determining if different methods of promised consequence training would affect mothers' efficacy expectancies for using promised consequences. We predicted that mothers in the two experimental conditions would report greater efficacy expectancies for using promised consequences with their children following the completion of training compared with mothers in the control condition. Because training ended at a different point for mothers in both conditions, we predicted that there would be an interaction effect such that mothers in both experimental conditions would report greater efficacy expectancies for using promised consequences immediately following training. For mothers in the modeling only condition, we expected a change in ratings of efficacy expectancies following training before the interaction began; whereas for mothers in the modeling plus directed interaction condition, we expected a change in ratings of efficacy expectancies following the period of directed interaction.

### *Outcome Expectancies*

Outcome expectancies are one's beliefs that certain behaviors will result in certain outcomes. One's beliefs in his or her capacity to complete a task can be closely related to one's expectations about the successful outcome of his or her efforts. Bandura (1977, 1982) not only noted that efficacy expectancies and outcome expectancies are situation- and domain-specific rather than universal, he also stated that "in any given instance behavior would be best predicted by considering both self-efficacy and outcome beliefs"

(1982, p.140). These two constructs are related in Bandura's model (1977, p. 79) such that a person begins a task or a behavior with a certain expectation about their ability to complete the task or behavior. This is the activation of efficacy expectancy, which affects the initiation of the task or the behavior. Following initiation of the task, outcome expectancy for how successfully the person believes they will be in completing the task or the behavior is activated. The entire cycle ends with the outcome of the behavior, which then reciprocally affects the person's self-efficacy for future ability to complete that task or behavior.

For parent training to be successful, the parent's outcome expectancies should match the outcome they experience after using the trained skill. We expected that mothers who rated their efficacy expectancies for using promised consequences high after completing training would also rate their outcome expectancies for their children's compliance high. We hypothesized that mothers in the two experimental conditions would report greater outcome expectancies following the completion of training compared with mothers in the control condition. Again, because training ended at a different point for mothers in the experimental conditions, we predicted that there would be an interaction effect such that mothers in experimental conditions reported greater outcome expectancies immediately following training. For mothers in the modeling only condition, we expected a change in ratings of outcome expectancies following training before the interaction began, whereas for mothers in the modeling plus directed interaction condition, we expected a change in ratings of outcome expectancies following the period of directed interaction.

### *Mediation*

Researchers have tested self-efficacy related to parenting as a mediator of the relationship between certain parenting variables. Teti and Gelfand (1991) found parenting efficacy mediated the relationship between three factors (maternal depression, social marital supports and difficult infant temperament) and maternal parenting competence. Cutrona and Troutman (1986) found parenting efficacy mediated the relationship between social support and maternal depression and between maternal perceptions of infant difficulty and maternal depression. We hypothesized that efficacy expectancies and outcome expectancies as rated on the second and third assessments would mediate the relationship between type of training (modeling only, modeling plus directed interaction, or no training control) and maternal use of promised consequences during the mother-child interaction.

## Method

### *Participants*

Participants from the New York City Metropolitan area were recruited from The Mount Sinai Hospital in Manhattan, NY. Research assistants approached caregivers with young children around the hospital and surrounding areas (including parks, libraries, stores, cafes, and playgrounds). Interested potential participants gave contact information to provide to the experimenter, who later contacted them about the study. Copies of the flier were also posted throughout the hospital, given to doctors and nurses to share with interested patients, and offered to caregivers if they preferred not to provide their information but wanted to contact the researcher themselves. Once contacted, potential participants were told more about the study and the child's age was verified. The experimenter administered the Externalizing subscale of the Child Behavior Checklist/2-3 (CBCL/2-3; Achenbach, Edelbrock, & Howell, 1987) over the phone to screen for problem behaviors. Mothers of children who scored at or above the *T* score cut-off of 60 for externalizing behaviors were told that they qualified and were invited to participate in the study.

Seventy-five mothers and their children ( $n = 49$  boys,  $n = 26$  girls) ages 30 to 42 months ( $M = 35.87$ ,  $SD = 4.41$ ) participated. Mean age of mothers was 32.06 years ( $SD = 8.07$ ) and mean number of years of education was 14 ( $SD = 2.04$ ). Mothers reported an average family income between \$30,000 and 59,999 ( $SD = \$20,000-29,999$ ), and had an average of 14 years of education ( $SD = 2.04$ ). Twenty-four percent of mothers self-

identified as White, 24% as African American, 26.7% as Hispanic, 4% Asian, 2.7% Caribbean American, 14.7% mixed racially, and 4% other. Twenty-four percent of mothers identified their children as White, 24% as African American, 18.7% as Hispanic, 4% Asian, 1.3% Native American, 21.3% mixed racially, 4% other, and 2.7% did not respond. Fifty-two percent of mothers were married, 44% were single, 2.7% were divorced, and 1.3% did not respond. Externalizing factor T-scores on the Child Behavior Checklist for 2- to 3-year-olds (Achenbach, 1991) ranged from 60 to 86 ( $M = 65.69$ ,  $SD = 6.52$ ).

### *Procedure*

When mothers arrived at The Mount Sinai Hospital for their scheduled 2-hour visit, they were led to a private room where they read the consent form, were explained what participation entailed, and were reminded that the interaction segment would be video-recorded. After mothers signed the consent form, the experimenter provided mothers with a randomly assigned ID number (all ID numbers were randomly linked to one of the three conditions prior to beginning the study). Mothers then completed (a) a demographic questionnaire, (b) a measure to assess situational efficacy expectancies, and (c) a measure to assess situational outcome expectancies. Mothers or children who were apprehensive about being separated were offered to remain together or for the mother to watch the child from the adjacent room through the one-way mirror during the consent procedure and the initial questionnaires.

For the training portion of the study, all children played with a research assistant in an adjoining room while mothers were taught to use negative promised consequences for noncompliance (experimental conditions) or were administered an interview about

their own mental and physical health (control condition). Mothers in the experimental conditions received a sheet of instructions that described promised consequences, explained how and when to use them, and gave clear examples of negative, immediate, and specific promised consequences (Figure 1). The experimenter read through and discussed instructions with mothers as well as answered any questions. The experimenter emphasized the importance of following through with promised consequences, if appropriate (i.e., when the child does not comply with the directive stated with a promised consequence). The experimenter and mothers role-played a couple of directive→promised consequence sequences. After going over the instructions and practicing with the experimenter, mothers watched a video of mothers demonstrating promised consequences and following through (when appropriate). Promised consequences were presented to mothers by the experimenter and in the modeling video using a neutral tone of voice. Following presentation of the modeling video, mothers were told, “You should feel free to do and say things that you usually would when your child is behaving well or playing or just acting normally throughout the interaction”. The purpose of this statement was to make sure that the positive attention that mothers typically show their children occurred during the interaction.

Mothers in the control condition received no instructions about promised consequences. Instead, mothers completed an interview based on the Medical Outcome Study Short Form-36 Health Survey (MOS SF-36; Ware & Sherbourne, 1992), which is a general assessment of mental and physical health. The interview lasted approximately as long and involved approximately the same level of experimenter-mother interaction for

mothers in the control condition as did training for mothers in the experimental conditions.

Following parent training or interview, the experimenter explained the mother-child interaction to all mothers. Mothers were instructed that the mother-child interaction would comprise a clean-up task followed by quiet play time for the child while the mother completed questionnaires. During the clean-up task, mothers were told that children should clean-up all toys spread over the carpet, as quickly and independently as possible for 15 minutes. For the quiet play time task mothers were told to give a box of toys to their child to play with for 20 minutes while they completed questionnaires. Mothers were informed that there were a number of attractive objects around the room (including a laptop, a mug of lollipops, markers and paper, a cell phone, and a decorative fountain) that were off-limits during the entire interaction. Mothers were instructed to remain in the room during the entire interaction period until the experimenter reentered.

Prior to beginning the interaction, mothers in the modeling only and control conditions were given headsets and were informed that the experimenter would use the headset to tell them when to transition between activities. Mothers in the modeling plus directed interaction condition were explained that headsets would be used for the experimenter to provide them with verbatim promised consequences and to tell them when to follow-through during the first 15 minutes of the interaction. After testing the headsets, mothers were asked to complete a second set of efficacy expectancies and outcome expectancies questionnaires regarding the upcoming mother-child interaction. Mothers took their children to the bathroom while the experimenter and research assistant readied the room for the interaction. Before entering the room, mothers in the

experimental conditions were reminded to use promised consequences and to follow through when children did not comply. All mothers were also reminded to do and say things that they typically would do or say when their children behaved or played normally. The experimenter restated that forbidden objects were off limits for the entire interaction.

Mothers and children then entered the interaction room and began the first task when prompted to do so by the experimenter via the headset. The experimenter provided verbatim negative, specific, immediate promised consequences for noncompliance (e.g., “If you do not stop touching the lollipops, I will move them out of your reach.”) to mothers in the directed interaction condition via the headset. The experimenter informed mothers in the directed interaction condition when to follow-through with promised consequences if children did not comply. The experimenter also praised mothers via the headset for using promised consequences and follow-through as directed (e.g., “Good job following through”) and corrected mothers when they did not follow the verbatim direction from the experimenter or did not follow-through (“Make sure to put AJ in the time-out in the blue chair like you promised because AJ did not comply.”). Mothers in the modeling and control conditions received no prompting, praise, or corrections during the initial 15 minute period.

After the 15 minutes had elapsed, all mothers were informed via the headset to move on to the next task. If needed, mothers cleaned-up any toys remaining on the carpet before proceeding. Mothers completed a third set of efficacy expectancies and outcome expectancies questionnaires focused on the remaining 20 minutes of the interaction. Mothers then worked on the Child Development Inventory until the experimenter entered

the room. Both the clean-up task and the mother-distracted task were included because both were designed to be challenging for children. These tasks were expected to lead to misbehavior, eliciting a fair amount of directives that could be paired with promised consequences. During the entire mother-child interaction the forbidden attractive objects within reach of the child (laptop, mug of lollipops, cell phone, decorative fountain, and markers and paper) provided more opportunities for children to misbehave and for mothers to use directives and promised consequences in response.

Following the interaction, mothers completed a final set of efficacy expectancies and outcome expectancies questionnaires focused on future mother-child interactions. Mothers also completed a questionnaire about how they thought their children behaved during the interaction compared to usual. When they completed all questionnaires, mothers were debriefed, thanked, and given a copy of the instructions for promised consequences. At this time, the experimenter taught mothers in the control condition how to use promised consequences by going over the same procedure as with mothers in the experimental conditions.

### *Measures*

*Child Behavior Checklist/2-3 (CBCL/2-3; Achenbach, Edelbrock, & Howell, 1987).* This 99-item measure of child behavior as reported by the child's mother yields scores for six child behavior problems, including aggressive behavior, deviant behavior, somatic problems, social withdrawal, depression, and sleep problems. For the purpose of the current study, the 26 items pertaining to the Externalizing subscale were queried as a phone interview. Ratings were measured against norms for this subscale. All scales of

this measure have shown good reliability and validity (Achenbach, 1992; Crawford & Lee, 1991; Spiker, Kraemer, Constantine, & Bryant, 1991).

*Child Development Inventory (CDI; Ireton, 1992).* This measure assesses child development from birth through early childhood for physical, psychological, social, and cognitive domains. The items have been normed and validated (Ireton & Glascoe, 1995) for use with children 1 to 6 years old. For the purpose of the present study, this questionnaire was used as a distraction to occupy mothers during the second part of the mother-child interaction.

*Medical Outcomes Study 36-Item Short Form Health Survey (SF-36; Ware & Sherbourne, 1992).* An interview based on this 36-item general measure of mental and physical health adapted from the 149-item Functioning and Well-Being Profile (FWBP, Stewart & Ware, 1992) was used in the present study. The items cluster into 8 scales that form a mental health subgroup and a physical health subgroup, which yield the Mental Component Summary (MCS) measure and the Physical Component Summary (PCS) measure. This psychometrically-sound measure has demonstrated good reliability with test-retest and internal consistency measures, as well as construct, content, criterion and predictive validity (Ware & Gandek, 1998).

*Demographic questionnaire.* This questionnaire included the following items: mother's date of birth, child's date of birth, child's gender, marital status of the mother, ethnicity of the mother, ethnicity of the child, mother's level of education, and family income.

*Efficacy Expectancy measure.* This twelve-item questionnaire developed by the experimenter for the purpose of the present study assesses mothers' situation-specific

efficacy expectancies for using four different disciplinary techniques during the interaction. The items assess mothers' beliefs about their own abilities to use different disciplinary methods on a 5-point Likert scale ranging from (1) not at all to (5) very well to have their children do, not do, or stop doing something . Four versions of the questionnaire were used in the present study to assess mothers' efficacy expectancies: (1) for the study in general (assessed prior to training), (2) for the first 15 minutes of the mother-child interaction (assessed immediately before the interaction), (3) for the second 20 minutes of the mother-child interaction (assessed at the beginning of the second part of the interaction), and (4) for future parent-child interactions (assessed after the interaction).

*Outcome Expectancy measure.* This twelve-item questionnaire developed by the experimenter for the purpose of the present study assesses mothers' situation-specific outcome expectancies for child compliance. The questionnaire measures mothers' perceptions of their children's likelihood to do, not do, or stop doing something on a 5-point Likert scale ranging from (1) never to (5) almost always when mothers use four disciplinary techniques. Four versions of the questionnaire were used in the present study to assess mothers' outcome expectancies: (1) for the study in general (assessed prior to training), (2) for the first 15 minutes of the mother-child interaction (assessed immediately before the interaction), (3) for the second 20 minutes of the mother-child interaction (assessed at the beginning of the second part of the interaction), and (4) for future parent-child interactions (assessed after the interaction).

### *Coding*

The behavioral coding system developed for this study measures frequency of mother and child antecedent-consequent behaviors. Mother-child interactions were coded for frequency of directives, promised consequences, child compliance, and follow-through with promised consequences. Compliance was coded if the child began to comply within 5 seconds of the directive or promised consequence. If the mother physically imposed compliance (i.e., told the child to stand beside her, and then picked up the child and placed her/him beside her), compliance was coded if the child continued to comply for the 5 seconds following the imposed compliance. Rates of compliance and follow-through were calculated based on potential amount of each consequent behavior dependent on the presence of the antecedent behavior. Ratings of misbehavior were made during five-second intervals throughout the first and second parts of the interaction when children did not comply, were destructive to property, broke a rule previously stated by their mother, or were aggressive towards their mother.

Two coders with 100% overlap coded mother and child behaviors for all interactions. Intraclass correlation coefficients (ICCs) were calculated for the first 15 minutes of the interaction for directives (.98), promised consequences (.96), child compliance (.94), and follow-through with promised consequences (.93). ICCs for the second 20 minutes of the interaction were calculated for directives (.96), promised consequences (.92), child compliance (.91), and follow-through with promised consequences (.75). Data from the master coder were analyzed.

Two coders with 100% overlap coded presence of misbehavior in 5-second intervals for all interactions. ICCs were calculated for misbehavior ratings for the first 15 minutes of

the interaction (ICC = .94) and the second 20 minutes of the interaction (ICC = .93). Data from the master coder were analyzed.

## Results

### *Demographics*

Random assignment was successful in producing equivalent groups (control, modeling plus directed interaction, and modeling only); no significant group differences were found on any of the demographic variables, including mother age, child age, child gender, family income, mother marital status, mother ethnicity, child ethnicity, and mother level of education.

### *Maternal Behaviors*

Data generated from ratings of mothers stating promised consequences, as described above, were compared for the second 20 minutes of the mother-child interaction. Promised consequences made during the first 15 minutes of the interaction were not included in the calculation because the first 15 minutes were considered a continuation of training for mothers in the modeling plus directed interaction condition. Because data was significantly skewed, we transformed data using a square root transformation. Skewness was reduced to 0.29. Consistent with our hypothesis, we found a significant difference in mothers' use of promised consequences across the three conditions,  $F(2, 74) = 7.59, p < .01$ . Post-hoc comparisons using the Bonferroni adjustment indicated that mothers in the MDI condition ( $M = 1.55, SD = 0.92$ ) used promised consequences significantly more than mothers in the C condition did ( $M = 0.55, SD = .68$ ),  $p = .001$ . Mothers in the two experimental conditions did not differ significantly in their use of promised consequences.

Data generated from ratings of mothers following through with stated promised consequences were compared for the second 20 minutes of the mother-child interaction. Because data was significantly skewed, we transformed data using a square root transformation. Consistent with our hypothesis, we found a significant difference in the likelihood to follow through with promised consequences across the three conditions,  $F(2, 74) = 5.59, p < .01$ . Post-hoc comparisons using the Bonferonni adjustment revealed that mothers in the MDI condition ( $M = .32, SD = .41$ ) followed through with promised consequences significantly more than mothers in the C condition did ( $M = .02, SD = .10$ ),  $p < .01$ . Mothers in the two experimental conditions did not differ significantly on following through with promised consequences.

#### *Misbehavior and Child Compliance*

The mean rate of misbehavior for all children during the second 20 minutes of the mother-child interaction was  $M = 0.11$ . The 20-minute period was divided into 5-second intervals. Of the intervals during which the child was misbehaving, 30% included a directive, 6% included a promised consequence, and 1% included follow-through. Differences in rates of misbehavior among children in the three conditions were calculated. Contrary to our hypothesis, children in the MDI ( $M = .08, SD = .07$ ) and MO ( $M = .11, SD = .13$ ) conditions were not more likely to misbehave than children in the C condition ( $M = .13, SD = .19$ ),  $F(2, 74) = 1.03, ns$ .

We calculated the rate of compliance with promised consequences (parsing out directives by only considering compliance immediately following stated promised consequences). The likelihood of compliance with promised consequences during the second period of the interaction was significantly different based on condition,  $F(2, 74) =$

3.73,  $p < .05$ . Post-hoc comparisons using the Bonferonni adjustment revealed a significant difference in children's likelihood to comply with promised consequences between the MDI ( $M = .35$ ,  $SD = .34$ ) and C conditions ( $M = .11$ ,  $SD = .30$ ),  $p < .05$ .

To determine if promised consequences were effective enough to increase compliance rates overall, the rate of compliance with directives and promised consequences during the second 20 minutes of the mother-child interaction was calculated. Overall, children in the MDI ( $M = .39$ ,  $SD = .16$ ) and MO ( $M = .40$ ,  $SD = .17$ ) conditions were not more likely to comply than children in the C condition were ( $M = .39$ ,  $SD = .15$ ),  $F(2, 74) = 0.03$ , *ns*.

#### *Efficacy Expectancies*

Mothers' ratings of efficacy expectancies for using promised consequences at four time points over the course of the study were compared. Mothers' ratings of efficacy expectancies followed the general patterns that we expected, with mothers in the MO condition ( $M = 3.81$ ,  $SD = 0.80$ ) rating efficacy expectancies on the second assessment higher than did mothers in MDI ( $M = 3.67$ ,  $SD = 0.73$ ) and C ( $M = 3.07$ ,  $SD = .079$ ) conditions, and mothers in the MDI condition ( $M = 3.75$ ,  $SD = 0.80$ ) rating efficacy expectancies on the third assessment higher than did mothers in the MO ( $M = 3.72$ ,  $SD = 0.97$ ) and C ( $M = 3.03$ ,  $SD = 0.85$ ) conditions. Contrary to our hypothesis, we did not find a condition by time interaction,  $F(6, 216) = 1.44$ , *ns*. No statistically significant differences on efficacy expectancy ratings occurred between mothers in the two experimental conditions at any of the time points. See Table 1 for mean ratings of efficacy expectancies.

We found a main effect of condition for efficacy expectancies,  $F(2, 72) = 5.59, p < .01$ . Post-hoc comparisons using the Bonferroni adjustment revealed that mothers in the MDI ( $M = 3.68, SD = 0.76$ ) and the MO ( $M = 3.71, SD = 0.89$ ) conditions, compared with mothers in the C condition ( $M = 3.13, SD = 0.86$ ), rated themselves as having significantly higher efficacy expectancies for using promised consequences,  $p < .05$  and  $p = .01$  respectively. Efficacy expectancies ratings did not differ significantly between mothers in the two experimental conditions.

We also found a main effect of time for efficacy expectancies,  $F(3, 216) = 16.52, p < .001$ . The sphericity assumption was met, so we were confident about interpreting results for the main effect of time. Post-hoc comparisons using the Bonferroni adjustment showed that mothers' ratings of efficacy expectancies increased from the first assessment to the final assessment. Efficacy expectancies ratings increased significantly (first assessment  $M = 3.19, SD = 0.87$ , second assessment  $M = 3.52, SD = 0.83, p < .01$ ; third assessment  $M = 3.50, SD = 0.93$ , final assessment  $M = 3.82, SD = 0.88, p < .001$ ). Ratings from second to third assessments did not differ significantly, but first assessments (versus all others) differed at  $p < .05$ , and fourth assessments (versus all others) differed at  $p < .01$ .

### *Outcome Expectancies*

Mothers' ratings of outcome expectancies for their children's compliance with promised consequences at four time points over the course of the study were compared. Consistent with our hypothesis, we found a significant condition by time interaction. The sphericity assumption was not met, so the Huynh-Feldt correction was applied to interpret the interaction effect,  $F(4.77, 171.73) = 2.47, p < .05$ . We found no statistically

significant differences between mothers in the two experimental conditions at any of the time points. See Table 2 for mean ratings of outcome expectancies.

We found a significant main effect of condition,  $F(2, 72) = 8.19, p = .001$ . Post-hoc comparisons using the Bonferroni adjustment revealed that mothers in the MDI ( $M = 3.46, SD = .070$ ) and MO ( $M = 3.52, SD = 0.75$ ) conditions rated themselves as having significantly higher outcome expectancies for compliance than mothers in the C condition did ( $M = 2.89, SD = 0.80$ ),  $p < .01$  and  $p = .001$ , respectively. Outcome expectancies ratings did not differ between mothers in the two experimental conditions.

We also found a significant main effect of time for outcome expectancies. The sphericity assumption was not met so the Huynh-Feldt correction was applied to interpret the main effect of time,  $F(2.39, 171.73) = 35.53, p < .001$ . Post-hoc comparisons using the Bonferroni adjustment showed that mothers' ratings of outcome expectancies increased from the first assessment to the final assessment. Outcome expectancies ratings increased significantly (first assessment  $M = 2.85, SD = 0.76$ ; second assessment  $M = 3.24, SD = 0.74, p < .001$ ; third assessment  $M = 3.38, SD = 0.84$ , final assessment  $M = 3.71, SD = 0.88, p < .001$ ). Ratings from second to third assessments did not differ significantly, but first assessments (versus all others) and fourth assessments (versus all others) did differ at  $p < .001$ .

### *Mediation Effects*

The study design involved assessments of efficacy expectancies and outcome expectancies before the intervention (pretest), after modeling and instructions (time 2), and after the first part of the mother-child interaction during which mothers in the MDI condition received further training (time 3). To test our hypotheses that mothers' ratings

of efficacy and outcome expectancies at times two and three would impact their use of promised consequences, we used a multiple mediation model (e.g., Preacher & Hayes, 2004; 2008). Analyzing data with a multiple mediation model presents several advantages including testing the effects of multiple mediators simultaneously, which was especially appropriate because our mediators were conceptually related. Multiple mediation models show which of the individual variables, if any, is responsible for mediating the effect. Additionally, parameter biases caused by omitted variables are reduced, models do not have to adhere to the assumption of normality of data, and the relative magnitudes of the indirect effects of mediator variables can be compared.

The traditional methods of testing mediation using Baron and Kenny's method (1986) or Sobel's test (1982, 1986) have been criticized because significance of the mediation is based on the assumption of normality of data. Recently, product-of-coefficients and bootstrapping methods have become much more popular for testing multiple mediation. We chose to use the bootstrapping method to test mediation effects using a multiple mediation model because confidence intervals derived using the bootstrapping method are "based on an empirical estimation of the sampling distribution of the indirect effect" (Preacher & Hayes, 2008, p.883) rather than on the assumption of normality. One issue with using a single multiple mediation model is that multicollinearity may attenuate effects. Because the four variables we wanted to test as mediators were all highly intercorrelated ( $r$ 's = .62 to .81,  $p < .001$ ), we chose to create two multiple mediator models, one with efficacy expectancies ratings at times two and three and one with outcome expectancies ratings at times two and three. By doing two

separate models, we reduced the problem of overly attenuated effects while maintaining the theoretical integrity for conducting multiple mediation analyses.

Condition was significantly related to maternal use of promised consequences ( $c$  path) ( $b = 0.82, p < .05; SE = 0.35; t = 2.35$ ). There was a statistically significant effect of condition on efficacy expectancies at time 2 ( $a$  paths) ( $b = 0.37, p = .001; SE = 0.11; t = 3.40$ ), and efficacy expectancies at time 3 ( $b = 0.35, p < .01; SE = 0.13; t = 2.76$ ). There was also a statistically significant effect of condition on outcome expectancies at time 2 ( $b = 0.39, p < .001; SE = 0.10; t = 4.03$ ), and outcome expectancies at time 3 ( $b = 0.29, p = .01; SE = 0.12; t = 2.55$ ). The effects of efficacy expectancies at time 2 ( $b = 0.58, ns; SE = 0.51; t = 1.15$ ) and at time 3 ( $b = -0.32, ns; SE = 0.45; t = -0.72$ ) ( $b$  paths) on maternal use of promised consequences were not significant when controlling for condition. The effects of outcome expectancies at time 2 ( $b = -0.91, ns; SE = 0.53; t = -1.71$ ) and at time 3 ( $b = 0.76, ns; SE = 0.44; t = 1.71$ ) ( $b$  paths) on maternal use of promised consequences were not significant when controlling for condition. The adjusted effect of condition on maternal use of promised consequences ( $c'$  path) was not significant in the efficacy expectancies mediation model ( $b = 0.71, ns; SE = 0.38; t = 1.88$ ). Apparently, the overall significant relation between condition and maternal use of promised consequences was due to the effects of condition on efficacy expectancies at times two and three. There was a drop in the value of  $c'$  ( $b = 0.71$ ) compared with  $c$  ( $b = 0.82$ ) of 0.11. The adjusted effect of condition on maternal use of promised consequences ( $c'$  path) was significant in the outcome expectancies mediation model ( $b = 0.95, p < .05; SE = 0.38; t = 2.48$ ). There was an increase in the value of  $c'$  ( $b = 0.95$ ) compared with  $c$  ( $b = 0.82$ ) of 0.13.

We found the indirect effect of efficacy expectancies at time 2 ( $a_1b_1 = 0.22$ , *ns*;  $SE = 0.20$ ;  $z = 1.11$ ) and of efficacy expectancies at time 3 ( $a_2b_2 = -0.11$ ,  $SE = 0.15$ ;  $z = -0.71$ ). The total indirect effect of  $X$  (condition) on  $Y$  (maternal use of promised consequences) for the model with efficacy expectancies as mediator variables was  $a_1b_1 + a_2b_2 = 0.11$ , *ns*;  $SE = 0.15$ ;  $z = 0.72$ ). We found the indirect effect of outcome expectancies at time 2 ( $a_1b_1 = -0.35$ , *ns*;  $SE = 0.22$ ;  $z = -1.60$ ) and of outcome expectancies at time 3 ( $a_2b_2 = 0.22$ ,  $SE = 0.15$ ;  $z = 1.44$ ). The total indirect effect for the model with outcome expectancies as mediator variables was  $a_1b_1 + a_2b_2 = -0.13$ , *ns*;  $SE = 0.18$ ;  $z = -0.73$ ). Using the bootstrapping method, we found the bias-corrected and accelerated (BCa) confidence intervals because they adjust the percentile values according to the distribution of the bootstrap estimates (Efron & Tibshirani, 1993). Because all our confidence intervals include zero for both models, we cannot reject the null hypothesis to conclude that efficacy expectancies at times two or three or outcome expectancies at times two or three mediate the relationship between condition and maternal use of promised consequences. The estimates of the bootstrapped estimates and 95% BCa confidence intervals for the multiple mediations are in Table 3 and Table 4.

Table 1  
 Mean Ratings of Efficacy Expectancies by Condition

Condition	<i>N</i>	<i>Time 1</i>		<i>Time 2</i>		<i>Time 3</i>		<i>Time 4</i>	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Control	25	3.03	0.88	3.07	0.79	3.03	0.85	3.39	0.91
Modeling plus Directed Interaction	25	3.27	0.84	3.67	0.73	3.75	0.80	4.04	0.67
Modeling Only	25	3.28	0.90	3.81	0.80	3.72	0.97	4.03	0.90

Table 2  
 Mean Ratings of Outcome Expectancies by Condition

Condition	<i>N</i>	<i>Time 1</i>		<i>Time 2</i>		<i>Time 3</i>		<i>Time 4</i>	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Control	25	2.68	0.72	2.79	0.63	2.93	0.93	3.16	0.94
Modeling plus Directed Interaction	25	2.85	0.82	3.36	0.71	3.68	0.68	3.96	0.58
Modeling Only	25	3.01	0.74	3.56	0.69	3.52	0.74	4.00	0.82

Table 3  
 Mediation of the Indirect Effects of Condition on Use of Promised Consequences  
 Through Mothers' Ratings of Efficacy Expectancies at Time 2 and Time 3

	<i>Point</i>	<i>Product of</i>		<i>Bootstrapping</i>	
	<i>Estimate</i>	<i>Coefficients</i>		<i>BCa 95% CI</i>	
		<i>SE</i>	<i>Z</i>	<i>Lower</i>	<i>Upper</i>
Efficacy Expectancies Time 2	0.20	0.18	1.10	-0.12	0.61
Efficacy Expectancies Time 3	-0.10	0.12	-0.71	-0.41	0.10
TOTAL	0.10	0.16	0.72	-0.22	0.43

Table 4  
 Mediation of the Indirect Effects of Condition on Use of Promised Consequences  
 Through Mothers' Ratings of Outcome Expectancies at Time 2 and Time 3

	<i>Point</i>	<i>Product of</i>		<i>Bootstrapping</i>	
	<i>Estimate</i>	<i>Coefficients</i>		<i>BCa 95% CI</i>	
		<i>SE</i>	<i>Z</i>	<i>Lower</i>	<i>Upper</i>
Outcome Expectancies Time 2	-0.36	0.22	-1.60	-0.87	-0.01
Outcome Expectancies Time 3	0.21	0.16	1.44	-0.41	0.10
TOTAL	-0.15	0.19	-0.73	0.01	0.68

## Discussion

Using a single-session training, we predicted that mothers in the two experimental conditions would be able to learn the parenting technique taught (i.e., negative promised consequences). Our hypothesis was confirmed because mothers in the modeling plus directed interaction condition used promised consequences significantly more than mothers in the control condition did. Despite differences in training method, mothers in the two experimental conditions did not differ significantly in their use of promised consequences; however only mothers in the modeling plus directed interaction condition differed significantly in their use of promised consequences from mothers in the control condition. Mothers may already incorporate something like promised consequences when disciplining their children, so the training may not have been teaching a new skill but rather may have been helping mothers fine-tune and master something in their repertoire. Because several directives given to young children are related to not doing something forbidden, reducing noncompliance can increase children's ability to resist temptation, which is an important skill for young children to develop (Mischel, 1974).

Partially confirming our hypothesis, mothers in the modeling plus directed interaction condition, but not mothers in the modeling only condition, followed through with promised consequences significantly more than mothers in the control condition did. Follow-through with promised consequences after noncompliance occurred at a low rate for all mothers. Although emphasized in training, following through with promised

consequences appeared to be challenging for mothers coping with problem behaviors in their young children. Low rates of follow-through in the present study are problematic because of the role follow-through plays in teaching children to comply with promised consequences. Following operant learning theory (Skinner, 1953), children learn that actual consequences will follow promised consequences (in the absence of compliance) when mothers follow through with consequences. Reinforcement history influences compliance (Strand, Wahler, & Herring, 2001); following through with consequences is an instrumental part of teaching children to comply (Shriver, 1998). Thus, had mothers followed through with consequences at a greater rate, we may have seen a greater rate of child compliance.

When we compared compliance among children in the three conditions, we did not find a difference in rates of compliance. We also did not find a difference in rates of misbehavior regardless of condition. One possibility for the lack of difference in child compliance and misbehavior is that promised consequences do not increase child compliance. However, when we parsed-out compliance following directives and looked only at compliance following promised consequences, we found that children of mothers in the modeling plus directed interaction condition were significantly more likely to comply than were children in control condition. This finding and the observational findings from Owen et al. (in press) lend tentative support to the supposition that promised consequences increase rates of compliance. It is possible that children's rates of compliance and misbehavior did not differ by condition because promised consequences and follow-through occurred at such low frequencies that children did not have enough exposure to the disciplinary technique to learn the contingency. Furthermore, children's

rates of misbehavior were low during the second part of the interaction, making it difficult to see a further reduction in an already low rate of behavior (i.e., floor effect). Children in the modeling plus directed interaction condition had the greatest exposure to promised consequences and follow-through and demonstrated greater compliance with promised consequences. Thus, children may benefit from greater exposure to the directive→promised-consequence→follow-through-with-consequence sequence. We will discuss this point further in the limitations and future directions sections.

Despite children in the experimental conditions not complying at higher rates than children in the control condition, mothers in the experimental conditions reported greater efficacy and outcome expectancies for using promised consequences. Mothers' ratings of efficacy expectancies in the two experimental conditions followed fairly similar linear patterns, which may explain why we did not find a time by condition interaction. However, we did find main effects for condition and time. A lack of difference in ratings between the second and third assessments can most likely be accounted for by the short time between these two ratings (15 minute clean-up period).

Consistent with our hypothesis for outcome expectancies ratings, we found a time by condition interaction effect. The interaction was most likely due to the greatest change in ratings of outcome expectancies occurring between the initial rating and the conclusion of training (time two for the modeling only condition, time three for the modeling plus directed interaction condition). Similar to efficacy expectancies ratings, mothers' outcome expectancies ratings were significantly different between each assessment, except for ratings between the second and third assessments, which can most likely be accounted for by the short time between those ratings (15 minute clean-up period). The

main effect of condition was the result of an improvement in outcome expectancies following parent training for mothers in the two experimental conditions compared with mothers in the control condition. Consistent with social learning theory (Bandura, 1969, 1977), instructions, modeling, and directed interaction resulted in greater efficacy and outcome expectancies as indicated by higher expectancies ratings of mothers in the two experimental conditions compared with mothers in the control condition.

Contrary to our hypotheses and previous research that has found expectancies to mediate parenting behavior (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001; Day, Factor, & Szkiba-Day, 1994), neither efficacy expectancies ratings at times two and three nor outcome expectancies ratings at times two and three appear to mediate the relationship between condition and maternal use of promised consequence. Condition did have a significant effect on efficacy and outcome expectancies at times two and three; however, efficacy and outcome expectancies did not affect maternal use of promise consequences, controlling for condition. Our finding that efficacy and outcome expectancies ratings at times two and three did not mediate the relationship between condition and maternal use of promised consequences may have resulted because training itself impacted mothers' compliance with the protocol, regardless of their expectations about the discipline technique.

### *Limitations*

The length of the present study appears to be one of the most limiting factors. We sought to examine whether using a brief format to conduct parent training of promised consequences was feasible and successful. Based on our findings, it appears that mothers may be able to learn the technique after a brief training period, but lack of change in

children's likelihood of compliance may be due to either the dearth of promised consequences and follow-through presented or the lack of child misbehavior for mothers to respond to during the interaction. The low frequency of promised consequences stated and low rate of follow-through with promised consequences may have occurred because of the short duration of the study or because disciplinary situations did not arise due to low levels of child misbehavior. Operant conditioning typically requires repeated exposure to stimulus-response (S-R) contingencies (Skinner, 1953). In the present study, promised consequences coupled with follow-through should have acted as punishing S-R contingencies (i.e., decreasing the frequency of noncompliance). The single, brief mother-child interaction and the low frequency of promised consequences (stimulus), follow-through (response), and child misbehavior during the interaction may have precluded adequate exposure to the directive→promised-consequence→follow-through-with-consequence sequence.

Another limiting factor was that the second part of the mother-child interaction did not elicit much misbehavior. Typical rates of misbehavior for problem behavior children have not been reported in the literature; however, rates of mothers intervening during challenging situations have been found to occur approximately once per minute (Holden, 1983) and rates of noncompliance during tasks have been suggested to be approximately 63% to 75% (Powers & Roberts, 1995; Roberts & Hatzenbeuhler, 1981) in clinical samples. Mothers' not allowing children adequate time to comply by quickly issuing another directive or distracting the child have been found to affect children's rates of noncompliance (e.g., Forehand, Gardener, & Roberts, 1978). In the present study, misbehavior was not coded if mothers did not allow their children 5 seconds to comply

with a stated directive. Thus, the rate of misbehavior may have appeared low in the present study due to factors related to both mothers' and children's behaviors.

The single session design was a third limitation. Many training programs include multiple sessions to teach parenting techniques; however, the present study comprised a single session focused on a single technique. Mothers appeared to be able to learn the technique in one session but may have benefited from additional sessions. We cannot infer the lasting effect of training on mothers' use of promised consequences because we only measured mothers' use of promised consequences during the single mother-child interaction.

Additionally, using a behavior analogue situation may have limited how generalizable participants' interactions were to typical mother-child interactions. Type of promised consequences that mothers could give and follow through with were limited by the constraints of the environment and narrow availability of negative consequences compared with real-life situations (e.g., at home, at the park). Furthermore, children did not appear to misbehave as much as they may have at home or in other environments (e.g., supermarket, public transportation).

#### *Future Directions*

We believe that the findings from the present study warrant further attention to promised consequences. Promised consequences could be a disciplinary technique incorporated into parent training programs if found to be effective in increasing likelihood of compliance. Due to limitations of the present study, it is not clear whether promised consequences can result in greater rates of compliance. Future research could expand upon the present study by focusing on increasing children's exposure to the

directive→promised-consequence→follow-through-with-consequence sequence. Two ways to increase exposure are by increasing the length of the mother-child interaction and by increasing mothers' opportunities to give promised consequences and follow through with the consequences during the interaction (by increasing children's likelihood for noncompliance and misbehavior). Longitudinal designs would help to increase child exposure to the directive→promised-consequence→follow-through-with-consequence sequence through repetition. Mothers may also learn the technique more completely if the technique is reinforced over at least one additional session. By using a longitudinal design, one could measure within subjects' changes in use of promised consequences over time.

Although we did not find mothers' efficacy and outcome expectancies to mediate use of promised consequences, expectancies might have impacted mothers' incorporation of promised consequences as a discipline strategy following the study visit. An additional at-home assessment would enable measurement of mothers' use of promised consequences following the brief training and of whether efficacy and outcome expectancies mediated a difference in use of promised consequences. Because promised consequences are theoretically consistent with behavioral parent training and are relatively easy to use, easy to teach, and can help mothers broaden their repertoire of consequences for noncompliance, promised consequences may be a fruitful area of continuing research.

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## Appendix

Figure 1. Instructions used to teach mothers promised consequences during study visit.

### Instructions for Promised Consequences

#### Instruction

- ❖ An instruction, direction or command tells your child to
  - do something
  - not do something
  - stop doing something.



#### Promised Consequence

- ❖ A promised consequence tells (or promises) what will happen if your child does not follow an instruction.
  - **When:** When you give an instruction.
  - **Why:** Giving your child information about what will happen if s/he does not follow an instruction.
  - **How:** After you have stated an instruction that your child does not begin to follow within 5 seconds, you will restate the instruction this time with a promised consequence. You then wait 5 seconds for your child to follow the instruction.
    - If your child follows the instruction, you do **not** give the consequence;
    - If your child does not follow the instruction, then you follow-through with the consequence.
  - **Example:** If you tell your child to stop touching the markers and your child continues to touch the markers, you tell him/her again “stop touching the markers or else I’ll take them away.” If your child continues to touch the markers, then you should pick up the jar of markers and place them out of reach of your child.



#### Types of Promised Consequences

##### ❖ Negative

Promised consequences should warn of a negative outcome for misbehavior that the child would find punishing/non-rewarding (e.g., tell your child you will remove a particular object that is interesting, tell your child you will take away a privilege, tell your child you will put him/her in time-out or make him/her stand/sit in the corner).



### ❖ Immediate

Promised consequences should warn of an immediate outcome of misbehavior (e.g., tell your child you will move a desired object out of reach, tell your child you will put your child in the corner, tell your child you will stop paying attention to him/her).

- These consequences are immediate as opposed to consequences that would come later (e.g., tell your child you will remove privileges at home, tell your child you will put him/her to bed early, tell your child you will not allow him/her to watch TV).



### ❖ Specific

Promised consequences should warn of a specific outcome of misbehavior (e.g., tell your child that you will remove the jar of candy, laptop, markers, specific toys; tell your child that s/he will have to sit in the corner for one minute; tell your child that s/he will only be allowed to play with a certain object in the room that your child would not find to be particularly interesting).

- These consequences are specific as opposed to consequences that are vague (e.g., tell your child that s/he will have to do something boring (do not specify what), tell your child s/he will be in trouble, tell your child you will be mad, tell your child s/he won't be allowed to play with the toys).



### Examples of Promised Consequences

- ✓ Promise to move a forbidden object or toy out of reach of your child
- ✓ Promise to place a toy that your child wants to play with in the bin
- ✓ Promise to put your child in time-out (having the child sit or stand in the corner for a certain stated amount of time)
- ✓ Promise to take away an object for a certain amount of time
- ✓ Promise to disallow your child from sitting on the comfy chair
- ✓ Promise to limit the toys your child can play with



### Promised Consequences that you should not use

- Promise a spanking, slap, or other physically forceful punishment
- Promise something positive or rewarding (i.e., candy, toys, hugs)
- Promise that your child can play with something that they are not supposed to play with at that time (i.e., forbidden objects, toys cleaned up during first half of the interaction)
- Promise a consequence that will not happen until after the interaction (i.e., no TV time, no dessert, time-out in his/her room at home).