TRAINING METHODS FOR THE CHILD DIRECTED INTERACTION (CDI) IN PARENT-CHILD INTERACTION THERAPY (PCIT) AND PARENTING SKILL ACQUISITION

By

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To my nephew, Ethen O’Brien

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Parent-Child Interaction Therapy (PCIT) uses several methods of training to promote parents' successful acquisition of skills involved in two basic parent-child interactions, child-directed interaction (CDI) and parent-directed interaction (PDI). Coaching is a core feature of PCIT that allows therapists to prompt and reinforce parents' use of their new skills during in-vivo parent-child practice. Coaching is assumed to be essential for accurate and efficient mastery of the PCIT skills that comprise the CDI and PDI, but there has been no empirical examination of the association between the coach training method and parenting skill acquisition. We were interested in the additive effects of both the performance feedback (via a skills frequency chart) and the coach training methods, over and above the effects of unaided parent practice following didactic training.

A community-sample of 42 mothers of 3- to 6 year-olds with scores on the Eyberg Child Behavior Inventory (ECBI) Intensity Scale below the clinical cut-off (<132) for disruptive behavior participated in an experimental analog of CDI treatment by first viewing an 18-minute videotaped didactic presentation with explanations and brief therapist modeling of CDI parenting skills. Following didactic instruction, mothers were randomized to one of three CDI practice

conditions with their child: (a) a 20-minute period of unaided practice (PRAC); (b) performance feedback (via frequency chart) on their skill acquisition from pre- to post-didactic training prior to a 20-minute period of unaided practice (FDBK); or (c) performance feedback on their skill acquisition prior to a 20-minute period of coached practice (COACH).

A significant main effect for time was found for two of three “Positive Following” skills (labeled praises and behavioral descriptions) and all “Negative Leading” verbalizations (questions, commands, and critical statements) following didactic training alone. Following the practice period, a group by time interaction was found for the composite Positive Following skills, with the COACH condition demonstrating greater change than the PRAC or FDBK conditions, whereas no differences were found between the PRAC and FDBK conditions. Examination of the individual Positive Following skills showed a large effect size for change in behavioral descriptions in the COACH condition compared to the PRAC and FDBK conditions. More mothers in the COACH condition were labeled training responders, defined as having five of each Positive Following skill in the post-practice assessment. Training condition was not related to maternal change in Negative Leading behaviors. No between-group differences were found in training satisfaction ratings or the number of days of CDI practice during the two-week period following training. Higher yearly family income and maternal education were positively related to change in Negative Leading behaviors following didactic training.

Future directions include examination of change in CDI Negative Leading behaviors with further coaching versus unaided practice, as well as examination of PCIT training methods for the acquisition of the PDI skills. Treatment component research examining the relations between PCIT training methods, skill acquisition, and family characteristics with clinical samples will help promote more efficient and effective treatment.

CHAPTER 1
INTRODUCTION

There are several evidence-based parent training programs that aim to reduce child disruptive behaviors arising from early negative parent-child interactions (Brestan & Eyberg, 1998). These treatment programs teach parents to use more effective parenting skills that improve the quality of parent-child interactions and decrease negative child behaviors. Studies of parent training programs have demonstrated that the changes in parenting behaviors are the causal mechanisms in producing changes in child outcomes (Forgatch & DeGarmo, 1999; Reid, Eddy, Fetrow, & Stoolmiller, 1999). Thus, instructional methods for training parents in new parenting skills are key to the efficiency and effectiveness of these treatments for children with disruptive behavior.

Evidence-based parent training programs for young children with conduct problems have formats ranging from individual parent training (*Parent Management Training Oregon Model (PMTO)*; Patterson, 2005), individual parent and child training (*Parent-Child Interaction Therapy (PCIT)*; Eyberg, 1999) and group parent training (*Incredible Years Parenting Program*; Webster-Stratton, 1990). Instructional methods used within these training formats can include verbal instruction, written handouts, discussion, videotape or live modeling, and role-play. The therapist(s) typically incorporate a combination of these instructional methods to facilitate parenting skills acquisition.

A unique instructional component of PCIT is in-vivo coaching, which allows parents to receive immediate therapist feedback as they practice new skills with their child during the treatment session (Eyberg, 1999). Individual parent training with coaching has been found more effective in producing behavior change in parents and children than didactic-focused group parent training (Chaffin et al., 2004: Eyberg & Matarazzo, 1980). Advantages of the coach

training method include correction of parent mistakes the instant they happen, possibly hastened skill acquisition due to the immediacy and intensity of coaching feedback, and tailored skill application to individual families (Herschell, Calzada, Eyberg & McNeil, 2002). Adaptations of standard PCIT, such as abbreviated and group formats of PCIT, have retained the coach training component due to the impact of coaching on parental skill development (Niec, Hemme, Yopp & Brestan, 2005; Nixon, Sweeney, Erickson & Touyz, 2003).

Parent training research has traditionally focused on changes in child behavior, and sometimes parent behavior following treatment, but measures of parent behavior change or skill acquisition as a function of the training methods employed are infrequently included (Moreland, Schwebel, Beck, & Well, 1982). The earliest studies of parent training programs' instructional components assessed the relative efficacy of various instructional methods, such as written materials, videotape modeling, lecture presentation, role-playing, live modeling, and rehearsal for parenting skills acquisition (Flanagan, Adams & Forehand, 1979; O'Dell, Mahoney, Horton & Turner, 1979; O'Dell et al., 1982). These studies established the efficacy of all of the instructional components over control conditions for time out and positive parenting skills acquisition. For time-out skills, Flanagan and colleagues (1979) found videotape modeling (i.e., a videotape which consisted of short verbal descriptions and modeling) was more effective than written instruction and no different than the role-playing instructional condition (i.e., therapist briefly described time-out procedure and then a group of parents were divided into dyads to role play) for parent skill acquisition, while O'Dell and colleagues (1979) found that videotape modeling plus a brief individual checkout (i.e., a training film was viewed and then parents received 7 minutes of therapist time to check their understanding of the material and provide a brief rehearsal of the techniques) was more effective than written instruction alone or individual

therapist modeling and rehearsal (i.e., therapist modeled behaviors and role-played the part of the child so parents could practice and receive feedback during a 20-minute session). The brief check-out may have been more effective because parents were able to demonstrate initial skill gains from the videotape modeling instruction and therapists could focus on areas of continued need in the brief time allotted. The investigators also noted that therapists reported that they spoke more quickly in the brief check-out condition than in the 20-minue individual modeling and rehearsal condition. For parenting reinforcement skills, no significant differences were found when the instructional methods of a written manual, videotape modeling or therapist live modeling and rehearsal were compared (O'Dell et al., 1982). The written manual, videotape modeling, and therapist modeling and rehearsal instructional conditions were all developed with parallel materials to standardize the information parents received. Parents received two treatment sessions, where instructional methods were first delivered in the clinic setting and then repeated in a second home booster training session. For the therapist live modeling and rehearsal condition, in the first clinic session therapists demonstrated reinforcement principles by modeling desired behaviors and then role-played the part of the child while the parent practiced, while during the home booster session the trainer observed the parent playing with his or her child and prompted and provided feedback. The investigators speculated that differences for the training methods may have been reduced by the highly parallel content of the training methods and the repeated exposure to training methods in each condition (O'Dell et al., 1982). The relative absence of some of the parenting skills targeted, such as asking questions and touch, in all of the treatment conditions was also noted. Thus, there was evidence for rather complex interaction effects between targeted parenting skills and outcome.

For successful treatment programs that include multiple instructional components, it is difficult to identify the instructional components responsible for the parents' skill acquisition or the relative effectiveness of the various procedures used. Two recent studies have demonstrated the additive effects of additional therapist assistance following didactic instruction to systematically examine the association between different instructional methods and parenting skills acquisition (Foster & Roberts, 2007; Lerman, Swiezy, Perkins-Parks, & Roane, 2000). Lerman and colleagues (2000) examined the relative effectiveness of low-cost training methods (i.e., written and verbal instructions) and therapist feedback (i.e., verbal corrective feedback on observed parent-child interactions) for three families that were taught multiple parenting skills to decrease child problem behaviors. Based on the child's presenting problems, parents were taught targeted skills that included ignoring as a response to inappropriate behavior, praise as a response to appropriate behavior, and communication prompts (e.g., asking "what do you want?"). A multiple baseline design was employed to assess the effectiveness of the training methods for acquisition of the targeted parenting skills for each family. Mothers were first presented with verbal and written instructions, and therapist feedback was introduced only if the parent did not reach a pre-set mastery criterion within 1 to 3 sessions. Results for individual families indicated that the efficacy of written and verbal instructions was variable; all parents achieved a high level of accuracy in the use of at least one parenting skill following written and verbal instruction alone, but across the three families, the specific skill that was accurately learned was not consistent. Each parent also required therapist feedback to meet the training criterion for at least one of the skills. The inclusion of only three families and slight variations in targeted parenting skills across the families limits broad conclusions. However, the preliminary findings suggested that the effectiveness of specific instructional methods (written and verbal discussion only

compared to additional therapist feedback) was related to the type of parenting skill taught and varied for individual families.

A second study also examined parental acquisition of specific parent training skills by assessing parent behavior change following videotape modeling alone and then with therapist assistance (Foster & Roberts, 2007). Foster and Roberts (2007) hypothesized that some parents would have difficulty implementing parenting strategies with videotape modeling alone, and would require therapist support and guidance to use new skills accurately. Maternal acquisition of responsive play skills (descriptions, praise, and imitation) and compliance training skills (effective commands and time-out sequence) was first examined following videotaped modeling. After reading materials and viewing a 25-minute videotape that included a rationale and graduated demonstrations of responsive play skills, four of ten mothers met pre-set behavioral mastery criteria. Mothers demonstrated significantly improved rates of positive attention and significantly reduced intrusive verbalizations during play after the videotape modeling alone; however, to meet mastery criteria 60% required one standard parent training session, which included a variety of training procedures (e.g, discussion, live modeling, guided practice with in-vivo coaching). For the compliance training skills of effective commands and a time-out sequence, only one mother demonstrated pre-set behavioral mastery criteria after reading materials and viewing a 45-minute videotape that included a rationale and graduated demonstrations of compliance-eliciting skills. The remaining nine mothers required one to two parent training sessions with additional instructional methods of discussion, live modeling, and guided practice with in-vivo coaching to meet mastery criteria. The investigators found that a variety of errors that could have potentially limited the long-term benefits of compliance training were observed following videotaped modeling alone. Overall, these preliminary findings suggest

the relative effectiveness of their standard parent training instructional methods (discussion, live modeling, in-vivo coaching) compared to videotaped modeling alone for parents' skill acquisition. However, the combination of methods used in the second session does not explore the specific instructional technique(s) responsible for parents' additional skill acquisition after videotape modeling.

Small sample sizes have limited researchers' ability to examine the relations between socio-demographic variables, instructional methods, and skill acquisition. One study found that parent variables, including education level, socioeconomic status (SES), and reading level, were related to skill acquisition (O'Dell et al., 1982). A study that examined the interaction of mothers' SES and instructional methods for skill acquisition found that mothers with lower SES that received modeling and role playing instruction were observed to use the behavior management skills they were taught with higher frequency than mothers with lower SES who received reading and discussion training (Knapp & Deluty, 1989).

In addition to behavioral skill acquisition outcomes, it is also important to examine parent satisfaction with instructional methods. The early studies of various instructional methods and skill acquisition found no differences between groups for parent attitudes toward training or satisfaction ratings (Flanagan et al., 1979; O'Dell et al., 1979; O'Dell et al., 1982). A recent study comparing 4-session PCIT groups in primary care with a corresponding self administered program with PCIT bibliotherapy also showed no differences in a measure of parental satisfaction (Harwood & Eyberg, in prep). However, Nicholson and Sanders (1999) found that parents rated higher satisfaction with a therapist-directed behavioral family intervention than a matching self-directed intervention with written materials. Parental expectations for interventions and acceptability of training formats are important to consider, for self-directed interventions or

those with minimal therapist feedback require parental willingness to carry out behavior changes with little or no support from a therapist (Elgar & McGrath, 2003).

Methods for Parent Child Interaction Therapy (PCIT) Training

In standard PCIT parents initially receive verbal instruction, therapist modeling and role-play, and written handouts that review concepts. After initial didactic instruction, parents receive weekly performance feedback on their skills observed during parent-child interaction via a skills frequency chart followed by guided practice with in-vivo coaching. Each of these instructional methods is described in more detail below:

Didactic Presentation and Brief Modeling. A PCIT didactic presentation is given in the first treatment session for the first phase of treatment, the Child Directed Interaction (CDI). Therapists provide a definition and rationale for using "Positive Following" CDI skills (labeled praise, reflective statement, behavioral description) and avoiding "Negative Leading" behaviors (information and descriptive/reflective questions, direct or indirect commands, and critical statements). See Appendix A for a summary of PCIT CDI skills. Therapists also provide several examples of each Positive Following skill to use and each Negative Leading behavior to avoid. Following the didactic presentation, therapists briefly model the use of the CDI skills with the co-therapists playing the parent and child role. Parents are given written handouts that summarize all of the skill definitions, rationales, and examples to take home.

Performance Feedback. Following the initial didactic session which includes the didactic presentation and modeling, the remaining sessions include performance feedback and coaching. For the feedback, therapists begin by observing and coding (i.e., tally frequencies on a chart) the CDI Positive Following skills and Negative Leading behaviors during a 5-minute observation. After the behavioral coding parents are provided with feedback in which they are praised for their effort, skill frequencies in the 5-minute time period are described (i.e., "you gave three

labeled praises”), and the therapist identifies skills that will be targeted in coaching based on the skills coding (i.e., “today we will work on increasing reflective statements and decreasing questions”). The parents’ skill frequencies collected during coding are recorded on a chart or graph to show parents a visual representation of their progress, and their current performance is compared to pre-set behavioral goals that indicate mastery. The mastery criteria for the PCIT CDI phase are 10 labeled praises, 10 behavioral descriptions, and 10 reflective statements, and fewer than 3 questions (both information and descriptive/reflective questions), commands (both direct and indirect) or critical statements in a 5-minute time period.

In-Vivo Coaching. The skills data from the 5-minute observation are used to guide in-vivo coaching of the parenting skills while parents practice with their child. Coaching is conducted in PCIT using a bug-in-the-ear system and one-way mirror. This method allows the parent to be alone in the room with the child when practicing the skills while receiving verbal communication from the therapist who is monitoring the interaction from the other side of the one-way mirror. When these technologies are not available, in-room coaching is possible in which the therapist sits slightly behind the parent opposite the side of the child so the therapist can speak quietly to the parent and remain unobstrusive to the parent and child interaction (Herschell, Calzada, Eyberg & McNeil, 2002). For two parent families, each parent is coached approximately 20 minutes so that the majority of the session involves coaching. For one parent families, coaching is typically 30 minutes in each session.

The coaching instructional method provides the parent with immediate feedback on their implementation of the interaction skills as the parent plays with their child. Verbal communication from coach to parent is active and intensive. Therapists are taught to use coaching verbalizations that are mostly brief, quick, and positive statements that train the parent

to increase the Positive Following skills (i.e., labeled praises, reflective statements, and behavioral descriptions) and decrease Negative Leading behaviors of CDI. Gentle corrections (e.g., briefly pointing out parent mistake, such as by saying “oops, question”) of parent mistakes are used sparingly, and are used particularly for raising the parent’s awareness of habitual negative communication behaviors. A therapist must be aware of the timing and delivery of feedback to the parent, who is involved in ongoing transactions with the child. A coaching session constitutes a moment-by-moment functional analysis in which behaviors of both the parent and the child are shaped toward more positive interactions and collaboration. Thus, therapists must stay attentive to the individual interaction style of each dyad in each session while working toward the treatment goals of skill mastery and improved parent-child interaction.

The behavioral principles that parents are taught to use with their child in CDI to change behavior (differential social attention) are similar to the principles that the therapist uses to train parents during coaching (Borrego & Urquiza, 1998). In CDI, therapists use differential social attention by giving most attention to correct parenting skills with the assumption that parents will perform behaviors that gain the greatest support and approval from the therapist. Less attention is given to incorrect parent behaviors. The therapist verbally shapes parent behaviors by cueing and reinforcing closer and closer approximations to CDI goal behaviors. The therapist’s shaping behavior is similar to the parent’s shaping of the child’s behavior. The consistent application of social reinforcement for correct parent behaviors increases the likelihood of positive parent behavior change, which then leads to changes in the interaction between parent and child.

Therapists also use client centered therapy principles during coaching in CDI by expressing empathy, genuineness, and positive regard to the parent. The coach demonstrates these qualities by accurately describing and being sensitive to the parent’s feelings during

coaching, treating the parent with respect (i.e., not acting condescending or superior), and not disapproving of the parent.

The didactic presentation, performance feedback, and in-vivo coaching methods are also used to teach parents the discipline skills of the second phase of PCIT, the Parent Directed Interaction (PDI). However, in PDI coaching parent mistakes are always corrected immediately by the therapist.

Study Objectives and Hypotheses

The additive effects of the in-vivo coaching method over and above the effects of the initial didactic training has not been examined empirically for the acquisition of the specific positive parenting skills taught in the first phase of PCIT. Parents in treatment are able to attain pre-set behavioral mastery criteria with the combination of training methods used. However, this study examines the additive value of therapist performance feedback and in-vivo coaching for parental skill acquisition. This study extends the research by Lerman and colleagues (2000) and Foster and Roberts (2007) by examining the specific positive following skills taught in PCIT. In addition, the performance feedback and coaching methods are used individually following didactic instruction to examine the relative value of these individual training methods. The larger sample size will also allow for examination of the relations between socio-demographic variables and acquisition of positive parenting skills. The majority of participants in the existing parent training skill acquisition literature were mothers so we included mothers only for this preliminary examination of PCIT instructional methods and skill acquisition. Furthermore, a non-clinical sample was recruited due to the brief nature of the training.

Mothers first watched an 18-minute videotaped CDI didactic presentation with skill explanations and examples, as well as brief therapist modeling. After this standardized didactic instruction, mothers were randomly assigned to one of three practice conditions: (a) 20-minutes

of unaided practice (PRAC), (b) performance feedback (via frequency chart) on their skill acquisition from pre-to post-didactic training prior to a 20-minute period of unaided practice (FDBK), or (c) therapist performance feedback, followed by 20-minutes of guided practice with in-vivo coaching (COACH).

The first objective was to examine the effects of the CDI didactic presentation alone on mothers' positive parenting skills acquisition. We expected mothers to demonstrate a significant increase in Positive Following skills and a significant decrease in Negative Leading behaviors following didactic presentation alone.

The second objective was to examine the additive effects of the performance feedback and the coach instructional methods, over and above skill acquisition related to didactic instruction alone. It was predicted that mothers in the COACH condition would show greater skill acquisition, with greater increases in total Positive Following skills and greater decreases in total Negative Leading behaviors after the 20-minute practice period than mothers in the PRAC and FDBK conditions. We also hypothesized that more mothers in the COACH condition would be considered "training responders," defined as having five or more of each Positive Following skill and less than 6 total Negative Leading behaviors in a 5-minute assessment, than mothers in the PRAC and FDBK conditions. Analyses for differences between the PRAC and FDBK conditions were exploratory because performance feedback alone has not been used in PCIT.

The third objective of this study was to examine the relations between socio-demographic variables and maternal skill acquisition. We predicted that higher maternal education and higher family income would be related to greater skill acquisition based on past research findings (O'Dell et al., 1982).

The fourth objective of this study was to compare maternal satisfaction ratings for the three instructional methods as well as their ratings of helpfulness of the skills when taught by way of the different methods. We expected that all mothers would report generally high satisfaction with the parenting skills taught and the instructional methods. However, we hypothesized that mothers in the FDBK and COACH conditions would rate higher satisfaction with training than mothers who received videotape didactic training followed by unaided practice. Exploratory analyses also examined differences in mothers' daily CDI practice for the two weeks following their training visit.

CHAPTER 2
METHOD

Participants

Therapists

Therapists were 6 graduate students who were well-trained PCIT therapists. All therapists had taken a PCIT course, participated in weekly PCIT supervision, and had been a therapist for at least 3 PCIT cases. These training experiences assured that therapists were able to code parent behavior accurately to provide feedback and to guide coaching of CDI skills. All therapists served in both the FDBK and COACH conditions. Therapists were five Caucasian females and one African American female, ages 23 to 28 years old. They had completed from one to five years of graduate school training in a Clinical and Health Psychology program.

Mother-Child Dyads

Forty-two mother-child dyads were recruited from the Gainesville community. Male and female children between the ages of 3 and 6, and mothers age 18 and older were eligible for the study. Mothers only were included in this preliminary study of training methods and skill acquisition. Because maternal depression was a significant predictor of impaired mother-child functioning prior to CDI in a sample of children with elevated behavior problems (Harwood & Eyberg, 2005), the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) was completed so that mothers with elevated levels of depressive symptoms could be excluded (no mothers had elevated CES-D scores). Children with clinically elevated behavior ratings according to maternal report (Eyberg Child Behavior Inventory intensity score > 132) were also excluded due to the focus on maternal acquisition of skills in a brief training model (six mothers reported clinical range ECBI scores for their child). Mothers of children with clinically elevated

ECBI scores were given information about services offered in the health center psychology clinic or community settings.

Of the 42 maternal caregivers who participated in the study, 93% were biological and 7% were adoptive mothers. Their mean age was 34.55 years (*SD* = 5.90) and their self-identified racial/ethnic background was 67% Caucasian, 19% African-American, 10% Asian American/Pacific Islander, and 7% Hispanic. They reported a wide range in education level [10th grade (2%); high school diploma or GED (12%); some college or associate's degree (33%); bachelor's degree (29%); master's degree (19%); and doctoral degree (5%)] and in yearly family income [<$20,000 (19%); $20,001 to $40,000 (31%); $40,001 to 60,000 (26%) and >$60,000 (24%)]. Their CES-D (depression) scores averaged 6.36 (*SD* = 4.46).

The children included 21 girls and 21 boys, with a mean age of 50.81 months (*SD* = 12.68 months). The children's racial/ethnic composition was 62% Caucasian, 17% African-American, 14% bi-racial, 5% Hispanic, and 2% Asian-American/Pacific-Islander. Mean maternal rating of child disruptive behavior on the ECBI Intensity Scale was 103.26 (*SD* = 20.08), which is very close to the normative mean of 97. Socio-demographic data were compared for the three training groups using one-way ANOVAs or χ^2 analyses. See table 1 for demographic characteristics of participants by training condition. No significant group differences were found, although differences in marital status approached significance, $\chi^2(2) = 4.90$, $p = .086$, with 93% of mothers in the coach training condition classified as married.

Measures

Family Demographic Questionnaire. A questionnaire was given to collect socio-demographic information about the mother and child including age, ethnicity, highest education level (of the mother), sex (of the child), and family yearly income.

Table 2-1. Demographic characteristics by training group

	PRAC	FDBK	COACH	*f*	χ^2	*p*
Maternal caregiver				---	2.12	.346
Biological mother	100%	93%	86%			
Adoptive mother	0%	7%	14%			
Marital status	57% married	64% married	93% married	---	4.90	.089
Mother age (years)	*M* = 33.36 *SD* = 5.97	*M* = 35.36 *SD* = 6.20	*M* = 34.93 *SD* = 5.78	0.40	---	.671
Mother education (years)	*M* = 15.57 *SD* = 2.10	*M* = 15.86 *SD* = 2.77	*M* = 14.43 *SD* = 1.79	1.57	---	.221
Mother ethnicity				---	2.10	.350
Caucasian	64%	57%	79%			
African-American	7%	36%	14%			
Hispanic	14%	7%	0%			
Asian-American	14%	0%	7%			
Bi-racial	0%	0%	0%			
Child age (months)	*M* = 46.93 *SD* = 12.72	*M* = 51.0 *SD* = 14.64	*M* = 54.5 *SD* = 10.00	1.27	---	.293
Child gender	57% male	36% male	57% male	---	1.71	.424
Child ethnicity				---	.968	.616
Caucasian	64%	50%	71%			
African-American	0%	36%	14%			
Hispanic	14%	0%	0%			
Asian-American	0%	0%	7%			
Bi-racial	21%	14%	7%			
Yearly family income				---	2.63	.854
$0-$20K	29%	14%	14%			
$20K-$40K	28%	29%	35%			
$40K-$60K	14%	36%	29%			
above $60K	28%	21%	21%			
Mother CES-D	*M* = 5.36 *SD* = 4.45	*M* = 7.93 *SD* = 4.75	*M* = 5.79 *SD* = 4.04	1.36	---	.269
Pre ECBI Intensity	*M* = 97.21 *SD* = 18.66	*M* = 112 *SD* = 19.76	*M* = 100.57 *SD* = 20.08	2.21	---	.123

Note. *n* = 14 in each training condition. PRAC = didactic instruction plus unaided practice. FDBK = didactic instruction plus therapist performance feedback before unaided practice. COACH = didactic instruction plus therapist performance feedback before coached practice.

Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999). The ECBI is a 36-item parent report measure of disruptive behavior in children between 2 and 16 years of age. It measures disruptive behaviors in terms of their frequency (Intensity Scale) and the degree to

which these behaviors are problematic for the parent (Problem Scale). Only the Intensity Scale was used in this study. On this 7-point scale, the total intensity score can range from 36 to 252, with a normative mean of 96.6 and a standard deviation of 35.2. Within a community sample, 12-week test-retest reliability of .80, and 10-month test-retest reliability of .75 have been reported for the Intensity Scale (Funderburk, Eyberg, Rich, & Behar, 2003). The ECBI was used as a screening measure in this study, as well as a two-week telephone follow-up measure of child behavior change following the brief training.

Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). The CES-D is a 20-item self-report questionnaire assessing level of depressive symptoms. The measure was developed by the Center for Epidemiologic Studies and is intended for research with the general population. Sixteen items express negative feelings or behaviors (e.g., “I was bothered by things that usually don’t bother me”) and four items express positive feelings or behaviors (e.g., “I enjoyed life”). Each item is rated on a 4-point scale according to how often the feeling or behavior has occurred in the past week (1 = rarely or none of the time, 2= some or a little of the time, 3 = occasionally or a moderate amount of time, and 4 = most or all of the time). A total score is calculated (range of 0 to 60), with higher scores indicating higher levels of distress. A score of greater than or equal to 16 indicates clinically elevated levels of distress, but does not necessarily mean that the participant has a clinical diagnosis of depression. High internal consistency has been reported for the measure (Radloff, 1977), as well as good test-retest reliability (e.g., Hann, Winter, & Jacobsen,1999). The CES-D was used as the depression screening measure for the maternal caregiver in this study.

Dyadic Parent-Child Interaction Coding System (Third Edition) (DPICS; Eyberg, Nelson, Duke, & Boggs, 2004). The Dyadic Parent-Child Interaction Coding System is a

behavioral coding system that measures the quality of parent-child social interaction during standard 5-minute situations that vary in the degree of parental control required. This study used the child led play situation in which parents are asked to follow along with their child in whatever game their child chooses. The coded parent behaviors of interest in this study were those that express reciprocity, nurturance, and parental control. A strength of the DPICS is the inclusion of parent behaviors targeted for change in PCIT, which permits parent's skill acquisition to be monitored.

Three graduate students and one post-baccalaureate student served as primary coders of the DPICS categories that comprised the Positive Following and Negative Leading behavior measures. All coders completed a coder-training workbook (Fernandez, Chase, & Eyberg, 2005) and reached 90% accuracy with a criterion tape coded by expert DPICS coders. All coders were uninformed of assessment time (pre-, post-didactic, and post-practice), and all coders with the exception of the first author were uninformed of training condition and study hypotheses. One-third of taped segments (42 segments) were coded independently by two observers for the purpose of calculating kappa inter-rater reliability. According to Fleiss's (1981) convention for interpretation of kappa statistics, all individual categories were coded with "good" to "excellent" inter-observer reliability. Following is a listing of the specific behaviors with kappa coefficients included in parentheses: Information Question (.94), Descriptive Reflective Question (.88), Direct Command (.88), Labeled Praise (.87), Behavioral Description (.84), Indirect Command (.74), Reflective Statement (.70), and Negative Talk (.65).

Satisfaction Questionnaire (SQ). The SQ was created for this study to measure maternal satisfaction with the instructional methods and maternal ratings of the helpfulness of the parenting skills. The SQ consists of 4 to 7 items with a 5-point response choice for each item (1 -

not at all to 5 - extremely). All mothers received the first four questions asking about the helpfulness of the skills ("how helpful were the skills for improving communication with your child" and "how helpful were the skills for engaging your child"), their likeliness to use the skills regularly in the future, and the helpfulness of the didactic instruction. Questionnaires given to mothers in the two therapist-assisted conditions had an additional question about the helpfulness of the performance feedback chart, and forms for mothers in the coaching condition had a question about the helpfulness of this instruction. All mothers were also asked to rate their overall satisfaction with the training they received. Space was also given for mothers to write additional comments about their experience.

Procedures

Recruitment

The study protocol and informed consent were approved by the university Institutional Review Board. Mother-child dyads were recruited through flyers that invited mothers of 3- to 6-year-olds to participate in a study to learn new ways to communicate with and engage their young child during play. During the initial phone call information was provided about study eligibility and procedures. If mothers remained interested a visit was scheduled at their convenience. Fifteen of the 63 mothers who called for information did not schedule. Those mothers that provided reasons cited time demand or the difficulty of bringing their child with them to the visit as barriers to scheduling.

Training

At the beginning of the study visit, the informed consent was reviewed, and screening measures were completed (ECBI, CES-D, family demographic form). Mothers who met study inclusion criteria were then observed with their child in the standard 5-minute DPICS Child Led Play (CLP) situation, in which they were instructed to follow along with their child in whatever

game their child chose to play (Time 1: pre-training). This first observation provided the mothers' baseline measures of Positive Following and Negative Leading behaviors. The playroom was set up with three standardized toys (farm playset, car and garage playset or train playset, and colored foam building blocks). Following this initial observation, all mothers viewed an 18-minute videotaped CDI didactic presentation that reviewed the parenting skills taught in the CDI portion of PCIT (see appendix B for outline). Two PCIT therapists (including the first author) provided the information on the video to standardize the didactic training across all participants. Mothers were at this point randomized to one of two training conditions: One third of mothers were randomized to the PRAC condition, and two-thirds were randomized to a therapist-aided condition. Mothers were randomized to the FBCK or COACH conditions after the performance feedback was given so that therapists would be uninformed of practice condition (unaided or with coaching) during feedback.

Mothers then returned to the playroom for their second parent-child interaction assessment of CLP, after which they were asked to practice the skills they learned from the video as best they could, aiming for the pre-set behavioral mastery criteria. They were told that after a two-minute warm-up, the therapist would observe and "score" their skills for a 5 minute period to see how they were doing (Time 2: after didactic training).

After this second observation was completed, mothers who were randomly assigned to the therapist-assisted group were given performance feedback on how close their skills were to mastery criteria. Feedback was aided by a chart showing the frequency counts of the three Positive Following skills and the Negative Leading behaviors (see appendix C for performance feedback chart). Therapists were instructed to give mothers brief general support and praise for their effort while reviewing their skill frequencies. If the mothers asked a question about a skill,

therapists were instructed to provide a simple definition of the skill first (e.g., “A behavior description is a statement that describes what your child is doing”). If parents inquired further, therapists provided one example (e.g., “An example of a behavior description would be ‘you’re feeding the horse some hay’”).

Twenty-one of the 24 feedback segments were taped (recording was stopped, in error, immediately after the coding period for three families, so the feedback could not be integrity checked for these families). Data for the 21 mothers indicated that they each received approximately two praises or supportive statements during the feedback (M = 1.95, SD = 1.11; e.g., “you’re doing a great job practicing” or “it is hard to not ask questions but you’re doing a good job”). One-third of mothers asked the therapist one question and one mother (5%) asked the therapist two questions. Of the mothers who asked questions, 57% asked for an example of a Negative Leading behavior they engaged in (e.g., “When did I give commands?) and 43% asked questions to clarify their understanding of a skill (e.g., “A labeled praise is more specific right?”). One mother asked what she should do if her child kept playing with the same toy because she felt it was too repetitive. Therapists provided one skill definition for two mothers and two skill definitions for one mother following parent questions during feedback. No skills were modeled during feedback. Twenty-four percent of mothers commented to the therapist that they did not realize how often they asked questions or directed their child’s behavior during play. Following performance feedback, mothers were randomized to either the FDBCK or COACH condition.

Following feedback, mothers randomized to the FDBK condition were asked to practice the CDI skills with their child for 20 minutes, after which their skills would be assessed again and their progress reviewed. Mothers randomized to the COACH condition were asked to

practice the CDI skills with their child for 20 minutes while being coached by the therapist via the bug-in-the-ear device. Coaches used a range of strategies to assist the mothers in their use of the skills, including prompting for use of a particular skill ("Praise him for sharing"), reinforcement for accurate application of skills ("Wonderful behavior description"), gentle corrections for mistakes ("Oops, question"), and observations regarding the child's response to the mother's behavior ("He talks more when you reflect").

All mothers were coded again for five minutes following the 20 minutes of practice (Time 3: post-practice assessment). At the end of the visit, mothers completed a satisfaction questionnaire. Mothers were asked to do a five-minute daily CDI practice with their child and were given sheets to record their practice at home to help increase the accuracy of their report in the follow-up phone call. Handouts that reviewed the CDI strategies and appropriate CDI toys were given at the end of the visit. Approximately 19 days following their training visit (M = 19.32, SD = 7.35), mothers completed the telephone follow-up, which involved administration of ECBI Intensity Scale and questions asking the number of days they had practiced. Mothers received $25 compensation for the training visit and $5 for completion of the telephone follow-up.

CHAPTER 3
RESULTS

Observational Data Analysis

Mothers' skills were examined during 5-minute taped segments before the didactic training (T1), after the didactic training (T2), and following the 20-minute practice period (T3). The two-week follow-up did not include behavioral observations; mothers were called and completed the ECBI and reported the number of days they practiced.

Prior to quantitative analyses, the observational data were assessed for normality for each group at T1, T2, and T3. When indicated, log transformation was used to bring skewness and kurtosis within acceptable limits. When log transformations were unsuccessful in achieving normal distributions, nonparametric tests were used to analyze group differences. Table 2 shows the mean frequency for all Positive Following skills and Negative Leading behaviors at T1 and T2 for the entire sample. Table 3 shows the mean frequency of each Positive Following skill, Negative Leading behavior, and Positive Following and Negative Leading composite scores for mothers in each training condition (PRAC, FDBK, COACH) at each assessment (T1, T2, T3). There were no pre-training group differences for the CDI skills.

Skill Acquisition following Didactic Presentation

Following didactic instruction alone, mothers demonstrated a significant increase in total Positive Following skills, $t(41) = 5.84$, $p < .001$, and a significant decrease in total Negative Leading behaviors, $t(41) = 6.40$, $p < .001$ (see Table 2). All individual behavioral categories significantly changed with the exception of reflective statements. Examination of individuals' skill acquisition showed that 21% of mothers had six or more reflective statements at pre-training and all but one of these mothers decreased from pre-training to the post-didactic assessment. Conversely, 20% of mothers increased their use of reflective statements by six or more following

didactic training alone. There was wide variability in mother's change for most targeted CDI behaviors. Mothers infrequently gave critical statements at the pre- or post-didactic assessments.

Parenting Skill Acquisition and Training Condition

The additive effects of performance feedback and in-vivo coaching were examined over and above the effects of unaided practice following didactic instruction. A 2 (Time 2, Time 3) X 3 (PRAC, FDBK, COACH) repeated measures ANOVA was conducted to examine group differences in skill acquisition following the practice period. Box's M and Levene's Test for Equality of Error Variances were not significant. The main effect for time was significant, $F(1,40) = 30.66$, $p < .001$, $\eta^2 = .44$, power = 1.00, and there was a significant Time x Group interaction, $F(2,39) = 11.00$, $p < .001$, $\eta^2 = .36$, power = .99. The change in Positive Following composite scores at each assessment for each training condition is presented in Figure 1. Follow-up univariate analyses were conducted to examine group differences. Mothers in the COACH condition showed greater change in total Positive Following skills than the PRAC, $t(26) = 3.17$, $p = .004$, and FDBK conditions, $t(26) = 4.12$, $p < .001$. No differences were found between the PRAC and FDBK conditions, $t(26) = 1.46$, $p = .158$. Follow-up analyses were conducted to examine the interaction between the individual Positive Following skills and instructional methods. Log transformation did not bring data normality within acceptable limits so the nonparametric Kruskal-Wallis test was used. Change in behavior descriptions was significantly affected by training group, $H(2) = 14.8$, $p = .001$. Mothers in the COACH condition improved more than mothers in the PRAC, $U = 23.5$, $p < .001$, and FDBK conditions, $U = 29$, $p < .001$. There was no significant difference between the PRAC and FDBK conditions, $U = 89.5$, $p = .701$, $\eta^2 = .10$. Change in reflective statements was also significantly affected by training group, $H(2) = 5.63$, $p < .05$, with mothers in the COACH condition demonstrating greater improvement

than the FDBK condition $U = 54.5$, $p = .04$. No significant difference was found between the COACH and PRAC groups, $U = 85$, $p = .57$. The difference between the PRAC and FDBK groups approached significance, $U = 60$, $p = .07$. Change in labeled praise was not significantly affected by training condition, $H(2) = 2.04$, $p = .36$.

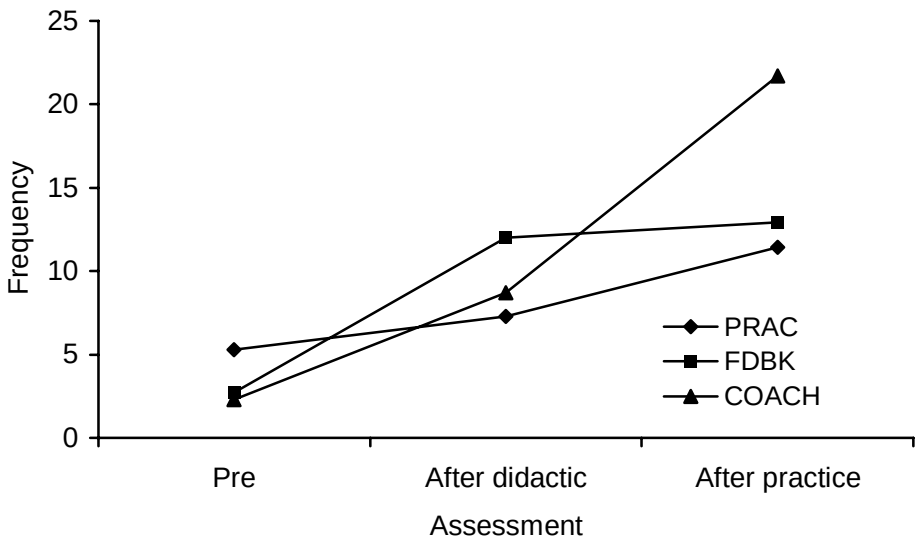

Figure 2-1. “Positive Following” skills composite score

Log transformation corrected the significant Levene’s test of homogeneity of variance found for the raw data Negative Leading composite scores. A 2 (T2, T3) X 3 (PRAC, FDBK, and COACH) repeated measures ANOVA was conducted to examine group differences in changes in Negative Leading behaviors. The main effect of time was significant, $F(1,39) = 10.27$, $p = .003$, $\eta^2 = .21$, power = .88. There was no Time x Group interaction, $F(2,39) = 2.23$, $p = .12$, $\eta^2 = .10$, power = .43. Overall, mothers significantly decreased their Negative Leading behaviors from the post-didactic assessment to the post-practice assessment but no differences between training conditions were found (see Figure 2).

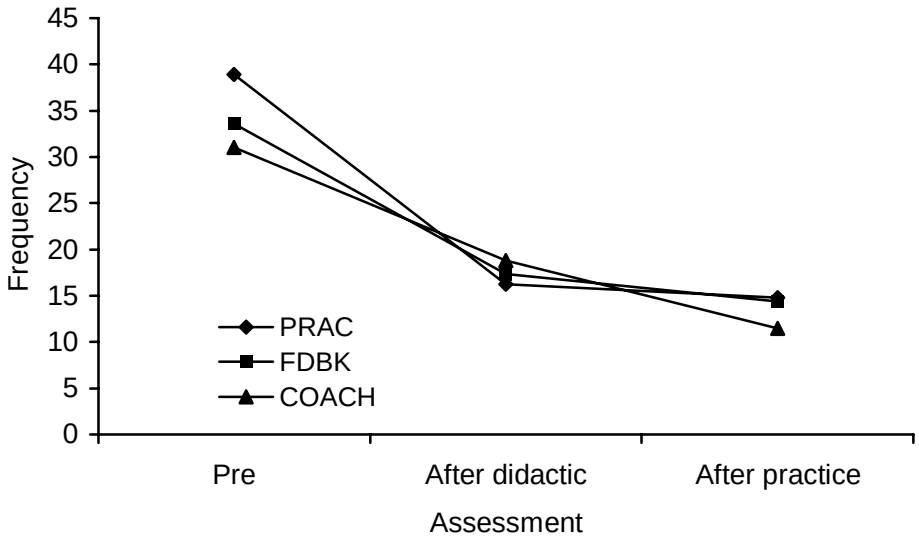

Figure 2-2. “Negative Leading” behaviors composite score

Family Characteristics and Skill Acquisition

No socio-demographic factors were significantly related to mothers increase in their composite Positive Following skills from the pre- to post-didactic assessment. However, yearly family income and maternal education were significantly related to mothers’ decrease in composite Negative Leading behaviors. Specifically, mothers with high family incomes (>60,000) demonstrated greater change than mothers with low family incomes (<20,000), $t(16) = 2.14$, $p = .048$, and mothers with at least some college education demonstrated greater change than mothers with high school education or less, $t(40) = 2.60$, $p = .013$. In regard to individual skills, mothers change in critical statements from the pre- to post-didactic assessment was significantly related to maternal rated child disruptive behavior scores on the ECBI, $r = .424$, $p = .005$. Mothers of children with higher ECBI scores demonstrated greater change in critical statements than mothers with lower ECBI scores. Higher ECBI scores were also related to higher frequency of critical statements at the pre-assessment, which indicated that these mothers had more opportunity to decrease this behavior given that the mean frequency of critical statements

was very low for the group. Mothers' change in labeled praises from the pre- to post-didactic assessment was not related to ECBI score or maternal depressive symptoms, however change in labeled praises during the practice period was significantly related to maternal depressive symptoms as rated on the CES-D, $r(41) = -.524$, $p < .001$. Higher maternal CES-D scores were related to less improvement in labeled praises from the post-didactic to post-practice assessments.

Treatment Responders versus Nonresponders Analyses

In addition to examination of skill frequencies, maternal skill acquisition can be evaluated as meeting or not meeting behavioral mastery criteria. Mastery criteria in clinical treatment is 10 of each Positive Following skill and less than three Negative Leading behaviors in a 5-minute time period. Due to the brief nature of the analog training situation, we examined the number of mothers who achieved 5 of each Positive Following skill or fewer than 6 total Negative Leading behaviors during the 5-minute post-didactic post-training assessments. These criteria reflect a substantial change in the quality of the interaction from pre-training.

Following didactic instruction alone, 31% of mothers had five or more labeled praises, 31% of mothers had five or more reflective statements, and 19% of mothers had five or more behavioral descriptions. Five percent of mothers were treatment responders who reached these criteria on all three of the Positive Following skills in a 5-minute time period, reflecting their ability to use the range of Positive Following skills taught. Ten percent of mothers had six or fewer Negative Leading behaviors in the post-didactic assessment.

After the practice period, 60% of mothers had five or more labeled praises, 55% of mothers had five or more reflective statements, and 33% of mothers had five or more behavior descriptions in a 5-minute time period at the post-assessment. Nineteen percent of mothers were treatment responders who reached these criteria on all three of the Positive Following skills in a

5-minute time period. This treatment response classification was significantly related to training condition, χ^2 (2) = 7.72, *p* = .021. The COACH condition had significantly more responders than the PRAC and FDBK conditions, χ^2 (1) = 4.76, *p* = .029. Forty-three percent of mothers in the COACH condition were Positive Following treatment responders compared to seven percent of mothers in each of the FDBK and PRAC conditions. Twenty-four percent of mothers had six or fewer Negative Leading behaviors in the 5-minute time period. Training group was not significantly related to treatment response classification for Negative Leading behaviors, χ^2 (2) = 1.05, *p* = .592.

Another way to examine treatment response is to evaluate individual cases that declined over the practice period despite overall trends of improvement. We examined frequencies of skills immediately following didactic instruction compared to post-training frequencies for declines during the practice period. Twelve percent of mothers gave fewer labeled praises at post-training than immediately following didactic instruction (1 in PRAC, 4 in FDBK; *M* decrease = 5.2, *SD* = 3.70), 21 percent of mothers declined in frequency of behavior descriptions (3 in PRAC and 6 in FDBK; *M* decrease = 2.89, *SD* = 1.45), and 29 percent of mothers declined in frequency of reflective statements (2 in PRAC, 7 in FDBK, and 3 in COACH; *M* decrease = 2.58, *SD* = 1.16). For the Negative Leading behaviors, 21 percent of mothers increased number of descriptive/reflective questions asked at post-training compared to immediately following didactic instruction (4 in PRAC, 2 in FDBK, and 3 in COACH; *M* increase = 3.78, *SD* = .88), 21 percent of mothers increased number of information questions asked (3 in each training condition; *M* increase = 1.44, *SD* = .24), 33 percent of mothers increased number of direct commands given (6 in PRAC, 6 in FDBK, and 2 in COACH; *M* increase = 3, *SD* = .66), 38 percent of mothers increased number of indirect commands given (4 in PRAC, 9 in FDBK, and 3

in COACH; *M* increase = 3.06, *SD* = .42), and 10 percent of mothers increased number of critical statements made (1 mother in FDBK condition had an increase of 9, and 3 mothers in COACH condition each had an increase of 1).

Parent Satisfaction

For the total sample of 42 mothers, mean ratings for all items on the Satisfaction Questionnaire (SQ) were approximately 4 or above on a 5-point scale. Table 4 shows the mean SQ item ratings by training group. An average total score for the SQ was calculated and there were no significant differences in satisfaction between training conditions, $F(2, 39) = .27$, $p = .75$.

The didactic instruction was rated as "very" to "extremely" helpful in the PRAC (M = 4.14, *SD* = .86) and FDBK (*M* = 4.5, SD = .85) conditions, compared to ratings of "somewhat" to "very" helpful (*M* = 3.79, *SD* = .89) for the COACH condition. However, no group differences in helpfulness of didactic instruction were found, $F(2,39) = 2.36$, $p > .05$. Performance feedback was rated as "very" to "extremely" helpful for mothers in the FDBK condition (*M* = 4.5, *SD* = .65) and mothers in the COACH condition (*M* = 4.71, *SD* = .47) with no group differences found, $t(26) = -1.00$, $p = .34$. All mothers in the COACH condition rated coaching as "extremely" helpful (*M* = 5, *SD* = 0).

Homework Practice

Mothers reported practicing an average of 7.77 days (*SD* = 4.37) out of a possible 14 days at the two week follow-up. There were no significant differences in the number of days practiced across training conditions, $F(2, 36) = .166$, $p > .05$.

Post-Hoc Assessment of Child Behavior Change

Child disruptive behavior scores on the ECBI Intensity Scale at pre-training (*M* = 103.61, *SD* = 18.22) and two-week follow-up (*M* = 96.32, *SD* = 20.64) assessments were examined for

changes in child behavior after training. A significant decrease in disruptive behavior scores was found, $t(35) = 2.65$, $p < .05$, $\eta^2 = .17$. A negligible effect size was found however this was a prevention sample with many children well below the ECBI normative (115) and clinical cut-offs (132). Twenty-five percent of children that had ECBI scores above the normative mean at pre-training were rated below the normative mean at post-training.

Qualitative Findings

Mothers were given space to make written comments at the end of the satisfaction questionnaire. Themes that appeared in short written comments are discussed here. Thirty-six percent of mothers commented on their increased awareness of their behavior during play following the training. They described not knowing before how much they directed or influenced free play, their tendency to make all activities "teaching," and their lack of awareness of how many questions they ask ("I didn't realize how many questions I asked until I tried not to!"). Another major theme of comments were descriptions of children's positive response to the skills, with twenty percent of mothers describing observations such as increased speech, more positive behavior, happier mood, increased self-esteem or engagement during play. Twelve percent of mothers commented about specific skills, particularly about the benefits of labeled praises. One mother also thought it was helpful to learn the difference between direct and indirect commands. In regards to the training methods, four mothers (29%) noted that they would have liked to have written materials with them to reference during the CDI practice. Two of the mothers in the feedback condition (14%) reported that they liked having feedback on their performance. Four mothers in the coaching condition (29%) noted the helpfulness of this training method (e.g. "would have been lost without coaching" and "coaching was the most helpful").

Written comments of the nine mothers (21%) that rated their overall satisfaction as “a little” or “somewhat” were examined. Two mothers, both in the feedback plus practice groups, rated their overall satisfaction as “a little.” Both mother’s written feedback included their desire to have more trainer guidance (“it would have been nice to have someone in the room with us to help model the correct behavior” and “would rather have a hands on contact demonstration”) – all mothers were informed of randomization to one of the three training groups during the informed consent process. One of these mothers also indicated that she felt the play was “too repetitive” and that she enjoys asking her son “learning questions.” Seven mothers - 4 in PRAC, 2 in FDBK, and 1 in COACH – rated their overall satisfaction as “somewhat.” These mothers’ written comments included “found the new communication akward,” found it “hard because child always wants to do pretend play,” and “would have liked to learn additional strategies.” The one mother in the coaching group that rated her overall satisfaction as “somewhat” commented that she felt the CDI skills “did not add anything new to our play.”

At the two-week follow-up, twenty-nine percent of mothers spontaneously reported that they found themselves generalizing their use of the skills (e.g., “The skills are helpful at other times like when we are walking somewhere and allow me to really listen to him,” “I find myself using the skills throughout the day,” and “I find myself using the advice and skills at other times”) and two mothers noted that their child asked for special playtime. Three mothers reported that they had shared the information with family members. Two mothers described what they perceived to be substantial improvements in their relationship with their child and their child’s cooperation during the follow-up. No mothers asked for additional guidance with their use of the strategies at home during the follow-up phone calls.

Table 2-2. Mean Frequency of the Child Directed Interaction (CDI) behaviors pre-training and after didactic instruction

	Pre-Training		After Didactic Instruction			
	M	SD	M	SD	*t*	*p*
Positive Following Skills						
Labeled Praise	0.16	0.48	3.28	3.14	6.49	<.001
Behavior Description	0.23	0.43	1.93	2.32	4.59	<.001
Reflective Statement	2.91	3.58	3.84	4.09	1.36	.182
"PF" Composite	3.43	3.68	9.33	6.29	5.84	<.001
Negative Leading Behaviors						
D/R Question	15.79	9.43	10.28	5.46	3.66	.001
Information Question	7.86	5.83	1.86	2.70	6.81	<.001
Direct Command	6.28	6.28	2.56	3.40	3.61	.001
Indirect Command	3.53	3.05	2.21	2.67	2.60	.013
Critical Statement	0.81	1.12	0.30	0.80	2.42	.020
"NL" Composite	34.52	15.89	17.45	10.66	6.40	<.001

Note. *n* = 42. "PF" Composite = positive following composite (labeled praise + behavior description + reflective statement). "NL" Composite = negative leading composite (D/R question + information question + direct command + indirect command + critical statement). D/R question = descriptive/reflective question.

Table 2-3. Mean frequency of the Child Directed Interaction (CDI) behaviors at each assessment for each training condition

	Pre-Training			After Didactic Instruction			After Practice		
	PRAC	FDBK	COACH	PRAC	FDBK	COACH	PRAC	FDBK	COACH
Positive Following									
Labeled Praise	M=0.36 SD=.745	M=0 SD=0	M=0.13 SD=0.35	M=2.35 SD=1.82	M=4.36 SD=4.16	M=3.36 SD=2.87	M=4.79 SD=3.47	M=4.57 SD=2.17	M=6.00 SD=4.26
Behavioral Description	M=0.21 SD=0.43	M=0.14 SD=0.36	M=0.33 SD=0.49	M=1.71 SD=2.97	M=2.71 SD=1.98	M=1.43 SD=1.91	M=2.43 SD=2.17	M=3.86 SD=4.87	M=8.60 SD=6.13
Reflective Statement	M=4.57 SD=3.20	M=2.57 SD=4.94	M=1.67 SD=1.35	M=2.79 SD=3.24	M=4.93 SD=4.87	M=3.92 SD=4.14	M=4.21 SD=4.46	M=4.50 SD=5.35	M=6.73 SD=4.35
Positive Following Composite	M=5.14 SD=3.35	M=2.71 SD=4.95	M=2.29 SD=1.20	M=7.29 SD=4.01	M=12.00 SD=7.85	M=8.71 SD=5.88	M=11.43 SD=7.23	M=12.93 SD=8.95	M=21.71 SD=9.38
Negative Leading									
Descriptive/Reflective Question	M=19.57 SD=12.61	M=14.14 SD=8.71	M=13.80 SD=5.25	M=10.07 SD=5.20	M=10.21 SD=5.71	M=10.79 SD=5.96	M=8.86 SD=3.68	M=6.50 SD=6.54	M=6.80 SD=4.65
Information Question	M=10.86 SD=7.89	M=5.93 SD=3.20	M=6.87 SD=4.55	M=1.43 SD=1.95	M=2.07 SD=2.84	M=2.07 SD=3.36	M=1.21 SD=1.31	M=1.14 SD=1.29	M=0.93 SD=1.28
Direct Command	M=4.57 SD=4.22	M=8.93 SD=8.07	M=5.40 SD=5.51	M=1.86 SD=2.31	M=3.14 SD=4.82	M=2.86 SD=2.71	M=2.07 SD=2.37	M=3.21 SD=3.49	M=1.47 SD=1.60
Indirect Command	M=3.29 SD=3.24	M=3.00 SD=2.77	M=4.27 SD=3.17	M=2.36 SD=2.84	M=1.57 SD=2.14	M=2.71 SD=3.10	M=2.50 SD=2.59	M=2.79 SD=2.67	M=1.87 SD=1.96
Critical Statement	M=0.64 SD=.75	M=1.36 SD=1.50	M=0.47 SD=0.83	M=.214 SD=.802	M=.357 SD=.929	M=.357 SD=.745	M=0.14 SD=0.53	M=0.71 SD=2.40	M=0.33 SD=0.62
Negative Leading Composite	M=38.92 SD=19.67	M=33.57 SD=15.38	M=31.07 SD=11.78	M=16.21 SD=8.68	M=17.36 SD=12.24	M=18.79 SD=11.38	M=14.78 SD=7.50	M=14.36 SD=12.63	M=11.50 SD=7.37

Note. *n* = 14 for each training condition. Positive Following Composite = labeled praise + behavior description + reflective statement. Negative Leading Composite = descriptive/reflective question + information question + direct command + indirect command + critical statement.

CHAPTER 4
DISCUSSION

The additive training value of the coach instructional method was supported for maternal acquisition of the Positive Following CDI skills, over and above initial gains following a videotaped CDI didactic presentation. Specifically, there was an interaction between training method and skill acquisition for mothers who were coached during their 20-minute practice after the didactic presentation. Mothers in the COACH condition demonstrated greater skill acquisition with higher frequency of total Positive Following skills and coached mothers were more likely to use five of each Positive Following skill (labeled praises, reflective statements, and behavioral descriptions) at the training post-assessment than mothers who engaged in unaided practice or received therapist performance feedback before unaided practice. In regard to specific skills, coaching had the greatest impact on mothers' change in behavioral descriptions following the practice period. Mothers in the COACH and PRAC conditions had greater acquisition of reflective statements during the practice period than mothers in the FDBK condition. There were no differences in the acquisition of labeled praises by training condition following this brief training. Therefore, findings also suggest interaction effects between specific skills and outcome, regardless of training condition.

The additive value of performance feedback before unaided practice over unaided practice alone was not supported. Therapists provided encouragement and behavioral feedback with the performance feedback chart, aimed at increasing the mothers' awareness of the discrepancy between their current behavior and the behavioral goals of the child-directed interaction (i.e., pre-set mastery criteria). Therapist feedback on their performance-goal discrepancy prior to the mothers' practice did not impact subsequent skill acquisition over the practice period. Of note, only one-third of the mothers asked any question about their performance when they were shown

a visual representation of their current skill strengths and deficits during the therapist performance feedback.

Our hypothesis that mothers in the COACH condition would decrease Negative Leading behaviors more than mothers in the PRAC and FDBK conditions was not supported in this study. At the end of the 20-minute practice period, mothers in all training conditions had significantly decreased their use of these leading behaviors. However, only 24% of mothers were able to decrease these leading behaviors in the CDI to fewer than six in the 5-minute assessment period, which was the definition for a treatment responder in this brief analog study. In regard to specific Negative Leading behaviors, mothers in each training condition rarely asked information questions at the training post-assessment and critical statements were infrequent at pre-training and remained low. The use of direct and indirect commands in each training condition at the training post-assessment was also quite low. Descriptive/reflective question was the highest frequency Negative Leading behavior demonstrated by mothers post-training. The majority of CDI coaching is focused on reinforcing parental approximations of the Positive Following skills and Negative Leading behaviors in the CDI are initially ignored with the expectation that the parent behaviors gaining most therapist attention will increase and replace parent behaviors receiving less attention. Therapists gradually introduce gentle corrections for Negative Leading behaviors that remain in later CDI coaching sessions, to raise parental awareness of habitual leading behaviors used in interactions with their child. The additive value of coaching parents to decrease their leading behaviors may not have been supported in this study due to the brief nature of the training. Further research is required to determine if parents are able to meet mastery criteria for avoiding the negative leading behaviors with continued self instructional methods and unaided practice, or if therapist coaching is necessary.

This analog study standardized the amount of parent practice in order to compare directly the effects of guided versus unguided practice following gains made from didactic presentation. One observation of note was our finding that some mothers' skills declined from the assessment immediately after didactic training to the final assessment after practice. Of the 26% of mothers that decreased their use of one of the Positive Following skills, 90% of these mothers were in the PRAC and FDBK conditions. A major advantage of coaching is that therapists are able to explain the effects of the CDI skills on the child's behavior as it happens, which may increase the mothers' "buy-in" or motivation to work on using the range of skills they were taught. The intensive coach training method may be more effective because of the therapist's ability to encourage and support the parent's perseverance in concentrated skills practice throughout the 20-minute practice period and final assessment in the context of the range of child behaviors that may present. Coaching assists parents with incorporating and sustaining new parenting behaviors in on-going interactions with their child.

Maternal satisfaction with the parenting skills they learned or the instructional components was not related to training group. Generally parents reported that they felt the skills were helpful in their interaction with their child and that they were satisfied with the instructional components, which suggests a ceiling effect. This replicates previous research finding no relations between parents' overall impression of training, how well they felt they understood the content, or how likely they were to use the techniques and four different instructional methods for positive reinforcement skills (O'Dell et al., 1982), as well as no relations found between parental attitudes and training methods for time out skills (Flanagan et al., 1979; O'Dell et al., 1979). The brief nature of the trainings in the skill acquisition literature and the types of skills taught may have influenced mothers' generally high satisfaction ratings.

The amount of home practice of the skills reported during the two-weeks post-training was also not related to training condition in this study. Variables unrelated to a treatment's instructional components, such as the type of skills taught or parent and child characteristics, may relate to parent's continued practice. Daily practice is an important clinical goal and further research is needed to determine the most successful ways to promote parent practice.

A number of group and abbreviated adaptations of PCIT have retained the core instructional components of PCIT but have altered the "dose" of coaching, and some abbreviated PCIT programs have used video didactic instruction and therapist telephone contacts to decrease therapist contact time (e.g., Niec et al., 2005; Nixon et al., 2003). This study provides preliminary evidence for the additive effects of the coach training method for faster acquisition of the Positive Following skills over practice alone, with or without brief therapist performance feedback. Further treatment component research must continue to examine systematically potential adaptations that may improve the efficiency or effectiveness of PCIT (Eyberg, 2005). For example, in the current study mothers demonstrated significant improvements in most of the targeted parenting skills following the 18-minute CDI didactic video alone. When delivered by the therapist, the length of the CDI Teach session is typically 60 to 90 minutes. For some parents, watching a didactic video prior to their first session with the therapist may improve treatment efficiency and allow the therapist to focus treatment time based on parent improvement from the self-guided didactic instruction. Indeed, the favorable outcomes for the abbreviated PCIT format that used didactic videos to supplement face-to-face treatment time (Nixon et al., 2003) and the earlier finding that a brief 7-minute therapist check-out following a didactic video was more efficacious than a 30-minute therapist didactic and role-play session for acquisition of time-out skills (O'Dell et al,. 1979) would support further study of the role of didactic videotapes and

therapist coaching to promote parenting skill acquisition and improve treatment efficiency. Adaptations that deviate from the use of the coach training method to assist parents with meeting PCIT behavioral mastery criteria should examine questions such as the minimal amount of coaching necessary to support skill acquisition and maintenance for individual families.

It must be noted that parents exhibited great variability in skill acquisition regardless of training group. Morowska and colleagues (2005) have described efficient modes of treatment delivery in which parents are assigned to self-directed or intensive treatments based on a number of individual difference characteristics, such as level of child behavior problems or parental mental health. Others have proposed that clinicians begin with the least expensive method of training, with supplemental instruction provided only for those skills that fail to meet performance criteria established by the therapist and parent (Lerman et al., 2000). These methods allow for the clinician's time and efforts to be focused more precisely where they are most needed. The current study suggests that it may be beneficial, at least for preventive intervention, for families to begin with didactic instruction plus a brief, intensive coach training procedure to promote fast and accurate skill acquisition. Future research could help determine which families would require repeated coaching and which families might continue to improve on their own or with minimal therapist guidance.

The current findings are restricted by the use of only one post-assessment observation immediately following training. Multiple observations, including in the home environment, are recommended for future research to better understand mothers' generalization and maintenance of skill gains based on instructional methods. Findings are also restricted to the specific way that the training conditions were defined and implemented in this study. Changes in the

implementation of the didactic instruction, performance feedback, or coaching methods may impact the relationship between these training methods and parent skill acquisition.

Although our sample size was small, it was substantially larger than most previous research in this area and allowed for further examination of socio-demographic variables in relation to speed of skill acquisition. Higher family income and maternal education were positively related to decreases in Negative Leading behaviors following didactic training alone. Although we excluded mothers with elevated maternal depressive symptoms, change in labeled praises over the practice period was negatively related to maternal depressive symptoms reported. Further study of the impact of parent and child characteristics on parenting skill acquisition is warranted to learn more about the efficacy of instructional formats for acquisition of specific parenting skills with different populations presenting for behavioral parent training.

The analog study methods allowed for the examination of the interaction between the well defined training methods used in PCIT and the specific parenting skills of the CDI. Preliminary evidence suggests the additive value of the coach training method over therapist performance feedback prior to unaided practice or unaided practice alone for greater acquisition of the range of CDI Positive Following skills (defined as using five or more of each positive following skill), and for greater increases of behavioral descriptions in particular. These gains were over and above gains made with didactic training alone. Further research of the multiple variables (and the interaction of these variables) important in skill acquisition – parent and child characteristics (including differences for mothers and fathers), specific parenting skills, and the range of training methods – will help to identify those factors that will improve treatment efficiency and effectiveness for individual families.

APPENDIX A
SUMMARY OF CHILD DIRECTED INTERACTION (CDI) SKILLS

"Positive Following" Skills

- **Labeled praise**: A labeled praise to the child provides a positive evaluation of a specific behavior, activity, or product of the child.

- **Reflective statement**: A reflective statement is a declarative phrase or statement that has the same meaning as a preceding child verbalization. The reflection may paraphrase or elaborate on the child's verbalization but may not change the meaning of the child's statement or interpret unstated ideas.

- **Behavioral description**: Behavioral descriptions are non-evaluative, declarative sentences or phrases in which the subject of the sentence is the child and a verb describes the child's ongoing or immediately completed observable verbal or nonverbal behavior.

"Negative Leading" Behaviors

- **Question**: Questions are verbal inquiries that are distinguishable from declarative statements by having a rising inflection at the end and/or by having the sentence structure of a question. Questions request an answer but do not suggest that a behavior is to be performed by the child. There are two types of questions: **Descriptive/Reflective Questions** are usually closed-ended questions that call for no more than brief acknowledgement in response. **Information Questions** are open-ended questions that ask for specific information.

- **Command**: Commands are statements in which the parent directs the vocal or motor behavior of the child. There are two types of commands: **Direct Commands** are statements that indicate a specific action to be performed by the child. **Indirect Commands** are often in question form and suggest that compliance is optional.

- **Criticism**: Critical statements are verbal expression of disapproval of the child or the child's attributes, activities, products, or choices. This also includes sassy, sarcastic, rude, or impudent speech.

APPENDIX B
CHILD DIRECTED INTERACTION (CDI) DIDACTIC PRESENTATION

Give overview of CDI strategies

- Teaches you the kinds of skills that play therapists use with children to build a good relationship with them and help them feel safe and calm.
- Improves your child's self-esteem.
- Improves your child's social skills, like sharing, which children need to get along with other children and have friends.
- Results in a secure, warm relationship between you and your child

Explain that the rules of CDI apply only to the short play therapy sessions ("special time") that you will ask parents to have at home each day with their child.

- Indicate that while some of the rules you will be describing are good general parenting skills, CDI is a special therapeutic playtime and that the rules are not intended for use throughout the day when parents have to carry on regular routines or direct the child's activity.

Next explain behaviors that should be <u>avoided</u> during this special time:

Avoid *Commands*

- Commands are statements that try to direct the play by suggesting what the child should do.
- There are two types of commands:
  - Direct: "Sit down." "Please hand me the car."
  - Indirect: "Would you like to sit down?" "Let's put the cars away."
- Commands take over the lead of the play.
- If the child doesn't obey, the play can stop being fun.

Avoid *Questions*

- A question asks the child to give an answer.
- There are two types of questions:
  - Questions that ask for information – who, what, where, when, how.
  - Insincere questions – voice tone goes up at end of sentence.
- Questions are often hidden commands – "Would you like to clean up?"
- Questions take over the lead of the conversation.
- Questions sometimes suggest disapproval.
- Questions often suggest you aren't really listening to your child.

Avoid *Criticisms*

- Criticisms are negative or contradictory statements about your child or his actions
  - You're not nice," or "That doesn't go that way."
- Criticism points out mistakes rather than correction:
  - "That's wrong" is a criticism.
  - "It goes like this" allows you to correct without criticizing.
- Criticisms lower your child's self-esteem.
- Criticism creates an unpleasant interaction.

Explain what parents are <u>to do</u> during special play:

***Praise* your child's appropriate behavior.**

- Giving your child a compliment about his behavior.
- There are two types of praise:
  - Labeled praise is specific about <u>what</u> you like. For example, "You choose such pretty colors!" "You're being so careful with your car!" "I like it when you draw neatly!"
  - Unlabeled praise is nonspecific praise. For example, "Good!" "That's great!" "Nice job."
- Labeled praise is better because it lets your child know <u>exactly</u> what you like.
- Increases the behavior that is praised.
- Increases child's self-esteem.
- Adds more warmth to relationship.
- Makes both parent and child feel good!

***Reflect* appropriate talk.**

- Repeating/paraphrasing what your child says. "Yes, that's a blue crayon."
- Allows child to lead the conversation.
- Shows child you're really listening.
- Shows you accept/understand what he is saying.
- Improves and increases child's speech.
- May feel awkward for you, but children love it!

***Imitate* appropriate play**.

- Doing the same thing the child is doing, such as drawing a tree if your child is drawing a tree.
  - Remember to keep your attention/comments focused on what your child is doing.
- Lets child lead.
- Approves of child's activity.
- Shows child you're involved.
- Teaches child how to play with others (for example, taking turns).

***Describe* appropriate behavior**.

- State exactly what your child is doing: "You're drawing a sun."

- Like a sports announcer, a running commentary.
- Lets your child lead.
- Lets your child know you're interested and paying attention to him.
- Lets your child know you approve of what she is doing.
- Models speech and teaches vocabulary and concepts.
- Holds your child's attention to the task, and teaches your child how to hold her own attention to a task

Be *Enthusiastic!*

- Let your voice show excitement about your child's appropriate behavior. For example, "You are being *SO* nice to share with me!"
- Lets your child know that you enjoy the time you are spending together.
- Increases the warmth of your play.

Review PRIDE acronym

Describe *Ignoring* inappropriate behavior when child misbehaves.

"*Children usually like CDI a lot and show good behavior, but we will practice using ignoring if your child misbehaves.*"

- Serves to decrease **ONLY** attention-seeking behaviors (yelling, sassing, whining, crying for no good reason); **not** for hitting, stealing, etc.
- Any attention, positive or negative, can increase attention-seeking behaviors.
- Avoid any verbal or nonverbal reaction to inappropriate behavior (e.g., looking at the child, smiling, frowning).
- Once you begin ignoring, you must continue until the behavior stops (explain consequences of stopping ignoring too soon and increasing the negative behavior).
- Continue ignoring until your child is doing something appropriate.
- Praise your child immediately for appropriate behavior.
- Helps your child notice the difference between your responses to good and bad behavior.
- Ignored behavior gets worse before it gets better, so only ignore a behavior if you can continue to ignore it when it gets worse.
- Consistent ignoring eventually decreases many behaviors.

Describe how to combine ignoring with the PRIDE skills.

- While ignoring the negative behaviors, look for any positive behavior occurring at the same time, and comment on it.
- If a negative behavior stops, look at your child with a friendly look, and comment on what your child is doing that is the opposite of negative behavior.
- Any time you see behavior that is opposite to the negative behaviors you have to ignore, give your child BIG labeled praises for the positive opposite.

Explain that if the behavior can't be ignored, the parent must stop the play

- These behaviors include:
  - Aggressive behaviors (e.g., hitting and biting).

- Destructive behaviors (e.g., drawing on the wall).
- Teaches your child that good behavior is required during special time.
- Shows your child that you are learning to set limits.
- Tell your child, "Special time is stopping because you hit me. Maybe next time you will be able to play nicely during special time."
- Try to initiate CDI again later in the day, if possible.

Model CDI for parents

- Model what CDI looks like using all the PRIDE skills and avoiding negative leading behaviors [3 minutes]

Describe the kinds of toys that are good and not good to use for CDI at home and why

- Toys that don't have rules are best, so that parents can let the child lead the play without worrying about the child breaking rules.
- Construction toys, such as Lego's, blocks, tinker toys.
- Play sets, such as farms, houses, and towns.
- Creative toys, such as crayons and paper are good. Many objects around the house can make excellent creative toys, like pots and pans.
- Avoid board games. Structured rules prevent free play.
- Avoid pretend-talk toys such as puppets, toy telephones. You want to communicate directly with your child.
- Avoid toys that encourage rough play (balls), aggressive play (Super-hero figures), or messy play (finger paints). These increase the chances of behavior problems, and you want this special time to be very positive.

Explain how to set up the CDI play session at home.

- Ask parents to think about the best place and time each day to have this special time with their child.
- Minimize distractions (siblings, telephone, TV, etc.).
- Place two or three appropriate toys in CDI area before starting the session.
- Let the child choose from your selection once CDI begins.
- Ask each parent when is the best time for them.

Explain the importance of practicing CDI every day for 5 minutes.

- Long enough to provide therapeutic effect for the child.
- Long enough for parents to be able to learn the skills.
- Short enough not to be too time consuming.
- Short enough that parents will not become frustrated with the concentration required at first to learn the skills.

APPENDIX C
SKILLS FREQUENCY CHART FOR PERFORMANCE FEEDBACK

	After Didactic Instruction	After Practice
Labeled Praises		
Reflections		
Behavior Descriptions		
Descriptive/ Reflective Questions		
Information Questions		
Direct Commands		
Indirect Commands		
Criticisms		

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BIOGRAPHICAL SKETCH

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