

Parent-Child Interaction Therapy and Language Facilitation: The Role of Parent-Training on Language Development

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Abstract

The high rate of comorbidity between language delays and externalizing behavior problems has been well established. The enduring nature and negative projections of delayed language supports the need for further examination of language facilitation and early interventions aimed at altering language development, which may also positively influence later behavioral outcomes. Specifically, the role of parenting styles in altering both language development and behavior problems has been examined. Although independently established within each field, characteristics of facilitative parenting styles remain similar between the language development and parent-training literatures. In particular, Parent-Child Interaction Therapy (PCIT) shares many similarities with existing language intervention approaches. The current paper explores the potential influences that PCIT may have in facilitating children's language development.

Keywords: Language development, Parent-Child Interaction Therapy, facilitative parenting styles, language intervention

Introduction

High rates of comorbidity exist between language impairment and behavioral problems in children. Roughly half of language-impaired children are diagnosed with one or more co-occurring behavioral disorders. Interestingly, an estimated average of 71% of children seen clinically for externalizing behavioral disorders are also suggested to have clinically significant language deficits, (e.g., Benner, Gregory, Nelson, Ron, Epstein, & Michael, 2002; Cohen, 2001). The high prevalence rates of these disorders are well established, yet the etiology of the relationship between language impairment and behavior disorders continues to be debated. Processing and language-production difficulties may result in inattentiveness, aggression, or social withdrawal. Behavioral difficulties may also lead children with behavioral problems to be less responsive to adult attention, further delaying the development of language skills. Although both of these causal relations seem plausible, language difficulties and behavioral problems may also be influenced by alternative environmental, biological, or individual characteristics (e.g., parenting style, socioeconomic status, gender).

Regardless of causal pathways, language delays put individuals at risk for numerous adverse outcomes (e.g., low educational attainment, aggression). Given the negative consequences of delayed language development, there has been considerable focus on clinical interventions aimed at increasing child verbalization skills. Some of these skills have been addressed specifically within the speech and language literature through clinician-directed and child-centered intervention approaches. However, the uncontested influence of parents in child-language development supports the need for further incorporation of parenting techniques aimed to facilitate language. In particular, parenting interventions targeting young children such as Parent-Child Interaction Therapy may teach parents skills to help foster children's language development.

Parent-Child Interaction Therapy (PCIT) is a behavioral parent training program empirically supported for the treatment of disruptive behavior in children 3 to 6 years of age (Eyberg, Nelson, & Boggs, 2008). PCIT's emphasis on direct parent-child practice allows clinicians to coach as parents act as their child's own therapist. The first stage of PCIT, Child-Directed Interaction (CDI), resembles facilitative play as it implements parenting techniques (e.g., praise, reflection, imitation, description) aimed at enhancing the quality of communication within parent-child interactions. Facilitative play is an approach described within the speech and language literature in which clinician-arranged activities provide the child with opportunities to demonstrate target behaviors during natural play (Paul, 2001). The

second stage of PCIT, Parent-Directed Interaction (PDI), focuses on discipline and limit-setting. Within both stages of intervention parents are coached and coded through dyadic play situations as they work to reach and maintain a level of skill mastery. Although originally developed to treat disruptive behavior problems, PCIT has been expanded to different clinical populations (e.g., mental retardation, separation anxiety, abuse and neglect, chronic illness; McNeil & Hembree-Kigin, in press). The current paper integrates the language development and PCIT literatures to demonstrate how PCIT may positively affect child language skills.

Language Development

The enduring nature of childhood language impairment is well established. Longitudinal investigations demonstrate that early-childhood language impairments tend to persist throughout late childhood (e.g., Aram & Nation, 1980; Conti-Ramsden, Botting, Simkin, & Knox, 2001), adolescence (e.g., Aram, Ekelman, & Nation, 1984; Johnson, Beitchman, Young, Escobar, Atkinson, & Wilson et al., 1999; Stothard, Snowling, Bishop, Chipchase, & Kaplan, 1998) and adulthood (e.g., Beitchman, Jiang, Koyama, Johnson, Escobar, & Atkinson et al., 2008; Hall & Tomblin, 1978). Persistent language impairment has been linked to negative long-term outcomes including poor literacy development (e.g., Nation & Snowling, 2000), low educational attainment (e.g., Snowling, Adams, Bishop, & Stothard, 2001), lower IQ scores (e.g., Hart & Risley, 1995), problematic interactions (e.g., Spackman, Fujiki, & Brinton, 2006), poor-quality friendships (e.g., Durkin & Conti-Ramsden, 2007), internalizing and externalizing behavior problems, attention deficits, and aggression (e.g., Beitchman, Brownlie, & Wilson, 1996; Beitchman, Wilson, Douglas, Young, & Adlaf, 2001; Tomblin, Zhang, & Buckwalter, 2000). These general projections of development support the need for further examination of language facilitation and suggest that interventions aimed to alter early language development may also positively influence later behavioral, emotional, and psychological outcomes.

The potential for such adverse effects has led to exploration within the literature of the influences that individual characteristics and environmental factors have on language acquisition and development. Specific relations between language development and individual differences in phonological memory, sex, and temperament have been demonstrated (e.g., Anthony, Williams, McDonald, & Francis, 2007; McDonald, 2008). Environmental factors such as socioeconomic status (e.g., Hoff, 2003; Hoff & Tian, 2005), the quantity and quality of child-directed parent-child communication (e.g., Hart & Risley, 1995; Huttenlocker, Haight, Bryk, Seltzer, & Lyons, 1991), parental education status (e.g., Dollaghan, Campbell, Paradise, Feldman, Janosky, Pitcairn et al., 1999), and family structure (e.g., Amato & Keith, 1991; Beitchman et al., 2008) have also been shown to predict vocabulary acquisition and development.

Although distinct associations among these different factors and language have been studied extensively, it is important to also take into consideration the multifaceted nature of these factors, and therefore, these associations. Such related factors as parental upbringing, genetic inheritance, gender, cognitive abilities, or caregiver knowledge and awareness of the role of language development in childhood may also play direct or indirect roles although not studied to such extent.

In addition to general environmental factors within the family household, specific characteristics of parental speech have been found to be positively correlated with measures of children's language development (e.g., Barnes, Gutfreund, Satterly, & Wells, 1983; Hoff-Ginsberg, 1990; Hart & Risley, 1995). During parent-child communication, parents often naturally fill conversational gaps with questions and commands. These attempts to maintain positive interpersonal contact with a child are commonly used when the child appears unmotivated to initiate communication or is relatively unresponsive. Frequent parental use of directive and corrective statements (e.g., questions, command giving) has been shown to correlate with delays in children's language development (e.g., Barnes et al., 1983; Hart & Risley, 1995; Vibbert & Bornstein, 1989). A parental style in which the parent focuses on the same activity as the child, engages the child in conversation by eliciting child verbal replies, and contingently responds to child speech is viewed as most facilitative to language development (Hart & Risley, 2001).

Contextual elements have been found to influence parental speech during parent-child interactions. In particular, maternal speech during book reading interactions may contain a higher frequency of positive predictors of language development than maternal speech in contexts such as free play and caretaking tasks (e.g., Dunn, Wooding, & Herman, 1977; Hoff-Ginsberg, 1991; Tulviste, 2003). Within free play situations (i.e., natural toy play), parental speech is characterized as having the highest rate of directives and the lowest rate of facilitative parent speech such as conversation-eliciting utterances. Contextual differences in the quality and quantity of parental speech may in part be due to the tasks required within each context. For example, the type of toy chosen during free play has been found to affect the quantity and purpose of maternal speech (e.g., O'Brien & Nagle, 1987).

Although variance in development is found across contexts, specific consistencies persist. Children within low-income households may be at a greater risk for language, intellectual, academic, and behavioral disorders than children from higher income homes (Hoff, 2003; Kaiser & Delaney, 1996; Noble, Farah, & McCandliss, 2006). Most germane for this paper are findings that children from low-income families are primarily at risk for both language delays and conduct problems (e.g., Webster-Stratton & Hammond, 1998). With this, characteristics of parental speech associated with child language development may vary as a function of social class. The existing literature suggests that the speech received by a child positively predicts vocabulary growth, vocabulary use, and general accomplishments (e.g., Hart & Risley, 1995; Huttenlocher, Haight, Bryk, Seltzer, & Lyons, 1991). Findings further suggests that parents among different social classes may vary in both the quality and quantity of speech provided to their children during parent-child interactions (e.g., Hart & Risley, 1995). Mothers within low-income households have been shown to spend less time talking or in mutual play with their children than parents within middle-class households (e.g., Hart & Risley, 1995). Within low-income households parents less frequently talk to their children (e.g., Lacroix, Pomerleau, Malcuit, Seguin, Lamarre, 2001), ask questions for the purpose of engaging the child in non-goal oriented communication (e.g., Farran & Haskins, 1980; Hart & Risley, 1995), engage in fewer joint attention activities (e.g., Galboda-Liyangage, Prince, & Scott, 2003), are less responsive (e.g., Greco, Sorrell, & McNeil, 2001; McNeil & Hembree-Kigin, in press), make fewer child-behavior contingent responses aligned with the child's focus (e.g., Cole, Teti, Zahn-Waxler, 2003; Hart & Risley, 1995), and more frequently communicate with their children for the purpose of directing child behavior (e.g., Farran & Haskins, 1980; Hart & Risley, 1995). Thus, the research suggests that children within low-income households may have fewer opportunities to experience supportive language interactions. These behaviors subsequently, put children at greater risk for both behavioral problems and language impairments.

Although research has shown that socioeconomic status (SES) accounted for 30% of the variance in children's language development skills, parenting style has been demonstrated to account for 61% of the variance of children's scores on the Peabody Picture Vocabulary Test-Revised (PPVT-R; Dunn, & Dunn, 1981) and Test of Language Development (TOLD; Hammill & Newcomer, 1988), and 59% of the variance of children's scores of general accomplishments on the Stanford-Binet IQ test (Terman & Merrill, 1960; Hart & Risley, 1995). Regardless of SES, parents with a facilitative parenting style have children with higher language development in late childhood. Most interestingly, Hart and Risley noted several components of positive verbal interaction that are believed to support higher levels of development and are similar to those taught within PCIT (e.g., praise, reflection, imitation, description, enthusiasm). Within all levels of SES, parent-child interactions with children having high vocabulary levels consisted of parents described as follows: (1) "they just talked," (2) "they tried to be nice," (3) "they told children about things," (4) "they gave children choices," and (5) "they listened" (Hart & Risley). Using these five identified parenting behaviors, Hart and Risley formed a parenting composite of parent-child interaction when each child was age 3 and then re-evaluated child language development at age 9. These researchers found a correlation of .78 between the parenting style at age 3 and the children's PPVT-R and TOLD scores at age 9.

Speech-Language Interventions

The strong association between environmental factors and poor spoken and written language skills has prompted the development of speech and language services and school-readiness programs such as Head Start (Aughinbaugh, 2001). Speech and language interventions are commonly implemented to assist children with language difficulties. Intervention may be applied to: a) change or eliminate language problems in normal language learners, b) alter disorders by teaching skills to improve communication, c) teach compensatory strategies, or d) modify the environment to better facilitate speech (Paul, 2001). The benefits children receive from early intervention may positively extend beyond the language behavior itself to further affect a child's social skills, behavioral repertoire, self-esteem, and family relations. When comparing children among different levels of SES, the spoken language abilities of preschool children in low-income households are significantly lower than those of the general population (Hart & Risley, 1995; Locke & Ginsborg, 2003). Programs such as Head Start have been demonstrated to significantly improve vocabulary and language comprehension in low-income children in comparison to peers within low-income households who are not enrolled in Head Start. However, Head Start has not been shown to alter the performance of low-income children when compared to age-matched peers of higher SES (e.g., Aughinbaugh, 2001). Therefore, programs such as Head Start may positively benefit children from low-income households, but enhanced or adjunctive treatments may also further address the gap in language development between low-income children and children from higher earning households.

In addition to early intervention programs, speech and language specific therapies have been developed and clinically-tested. The continuous modification and advancement of clinical approaches based on empirical support have led to enhanced evidence-based practices demonstrated to significantly alter language development (e.g., Brackenbury, Burroughs, & Hewitt, 2008). Although an abundance of approaches exist, interventions can often be grouped into two general categories based on the focus of the treatment: Clinician-Directed and Child-Centered Interventions. Both of these approaches may consist of parental assistance, yet primarily involve the child working directly with a trained clinician.

Clinician-Directed Interventions (CDs) are designed to facilitate speech and language learning within a highly-structured environment. Clinicians prompt the practice of specific behaviors and skills (i.e., drills), provide toys and games to initiate drills (i.e., drill play), and demonstrate correct technique through direct modeling. Behavioral skills are efficiently implemented through the presentation of stimuli and child-behavior-contingent reinforcement and punishment (e.g., tokens, stickers, snacks). CD interventions are designed to provide children with clear instructions and criteria for appropriate responses. Yet CD interventions may also be seen as unnatural and dissimilar to the context in which language is used in everyday conversation and therefore may not promote the highest level of generalization of skills outside the structured clinic setting (e.g., home and school; Hubbell, 1981).

Within Child-Centered interventions (CCs), clinicians facilitate language practice by allowing the child to direct the play activity and creating a natural environment in which the child is motivated to communicate spontaneously. Child-centered approaches may motivate language learning and prevent the long stretches of intervention time that clinicians spend trying to encourage unmotivated children to participate in CD formats. Two basic types of CC approaches exist: whole language and indirect language stimulation. Whole language approaches have an aim to teach reading and writing skills based on oral language development during natural interactions (Paul, 2001). The current paper will focus on indirect language stimulation as it is most relevant to the purpose of this paper. For a more complete description of whole language approaches see (Paul, 2001).

Indirect Language Stimulation is often called facilitative play and occurs when a clinician arranges activities to provide the child with opportunities to demonstrate target behaviors and skills, while also allowing the child to lead the play activity (Hubbell, 1981; Paul, 2001). Unlike CD approaches, emphasis is placed on clinicians' responsiveness to child behavior by following the child's choice of activities and topics, placing child behavior in a communicative context, providing an attentive and

responsive play partner, and supplying models of more mature language. In this way, Indirect Language Stimulation may be the best method for establishing a facilitative avenue for communication. During Indirect Language Stimulation, clinicians use facilitative language techniques (e.g., praise, expansions, extensions) to enhance language during natural child play.

Speech-Language Interventions and Parent Training

Although parents are often involved in these speech interventions, they do not typically take on the primary role of language facilitation during treatment. However, research from the speech and language literature has documented the importance of environmental factors (e.g., parental speech, SES, parent-child interaction) in language development. Given the role that parents play in language development, it is conceivable that interventions targeting parental behavior (i.e., parent-training programs) may be an efficient means to reduce child language delays. Historically, parent-training programs were developed to treat children with disruptive-behavior problems and thus contain instruction using components aimed to modify behavior such as praise, differential attention, and time-out (e.g., Eyberg, 1988; Forehand & McMahon, 1981; Patterson & Guillion, 1968; Webster-Stratton, 1981). Parent-training programs stemming from the Hanf two-stage model have been suggested to effectively alter behavior problems in children with general-and-specific language delays (Cunningham, 1989).

Additionally, in the area of speech-language interventions, several parent-training programs have examined the treatment effects on child language development in children with normal language development (e.g., Fanning, 2008; Ratner & Bruner, 1978) as well as children with delayed language and specific language disorders (e.g., phonological impairment; Bowen & Cupples, 2006). These studies demonstrate promising effects on both parent and child behavior. Compared to a control group, treatment-group parents demonstrated increased facilitative behaviors that included, modifying their language behaviors during play, demonstrating correct facilitation techniques, and engaging in more balanced turn-taking and language modeling events (e.g., Fanning, 2008; Hancock, Kaiser, & Delaney, 2002). Furthermore, implementation of similar parent-training programs has been found to enhance children's language skills (e.g., McIntosh, Crosbie, Holm, Dodd, & Thomas, 2007). In particular, treatment-group children have displayed increased expressive language and positive trends in increased utterances and words when comparing pre-and-post-test results (e.g., Fanning, 2008). Studies examining the effectiveness of parent-training programs aimed at addressing disruptive behavior problems and facilitating language development in at-risk children identified with mild language delays (e.g., Hancock, Kaiser, & Delaney, 2002) and children from low-income households at risk for behavioral and language difficulties (e.g., Delaney & Kaiser, 2001) have found greatest changes in parenting behaviors as well as parent-reported child behavioral problems, with only modest overall gains in child-language performance. The lack of significant improvement of language skills may be a result of various factors including treatment dosage, parent reported lack of adherence to at-home practice, numerous life stressors, and need for longer follow-up period to experience language gains. Although some studies show that parent training programs may initially have a weak effect on language skills, McIntosh, Crosbie, Holm, Dodd, & Thomas (2007) demonstrated that, by the final follow-up, children had enhanced language skills equivalent to those of average SES peers serving within the control group. Furthermore, Weiss (1981) examined the use of a behavioral-parenting intervention as a preventative program and found that parent-and-teacher training focused on facilitative language skills decreased future child costs and use of continuing special education services.

These promising findings suggest that parent training may be an effective prevention or intervention program for children with or at-risk for delayed language development. Although different approaches to parent training result in favorable outcomes when treating children with disruptive behavior problems, specific treatment components may be especially beneficial when treating children with language delays or co-occurring language delays and disruptive behavior problems. Specifically, there

may be advantages to using PCIT with these populations given the targeted age-range, specific skills taught, and the format of this intervention.

Parent-Child Interaction Therapy

PCIT is an evidence-based treatment aimed at modifying a broad range of behavioral, emotional, and family problems (Eyberg, Funderburk, Hembree-Kigin, McNeil, Querido, & Hood, 2001; Eyberg, Nelson, & Boggs, 2008; Hembree-Kigin & McNeil, 1995) for preschool children with disruptive behavior, as well as families with a history of child maltreatment (Brinkmeyer & Eyberg, 2003; Chaffin et al., 2004). PCIT consists of two phases: Child-Directed Interaction (CDI) and Parent-Directed Interaction (PDI). The first phase of treatment, CDI, resembles traditional play therapy and focuses on increasing positive parenting and improving child social skills. The second phase of treatment, PDI, resembles clinical behavior therapy and focuses on improving parents' limit-setting, consistency in discipline, and reducing child noncompliance.

During the CDI stage of PCIT parents learn and work towards mastery of a set of facilitative parenting skills known as the PRIDE skills: *P*raising the child (i.e., labeled praise), *R*eflecting the child's statements (i.e., paraphrasing, active listening), *I*mitating the child's play, *D*escribing the child's actions (i.e., behavioral description), and using *E*nthusiasm throughout play (see Table 1 on the next page for definitions of skills). When using the PRIDE skills, parents also learn to avoid questions, commands, and criticism. These skills of CDI are aimed at elevating child self-esteem and appropriate talk.

Parents acquire CDI skills through didactic instruction and direct practice. Following the initial didactic session, parents and their child attend weekly coaching sessions together. Clinicians use a bug-in-the-ear microphone communication device to guide and monitor the parent-child interaction from an observation room. Alternatively, the clinician can provide direct in-room coaching in a clinic playroom or the home (Masse, McNeil, Wagner, & Chorney, 2008; Ware, Fortson, & McNeil, 2003). In this way, parents receive coaching and practice specific communication and behavior management skills as they fill the role of their child's play "therapist" (Eyberg, 1988). Observations conducted within a 5-minute coding interval at the start of each session are used to evaluate and guide treatment progression. Behavioral classifications defined within the Dyadic Parent-Child Interaction Coding System-III (DPICS-III: Eyberg, Nelson, Duke, & Boggs, 2005) are utilized to assess behavior within each observation (i.e., CDI, PDI) To assist with both the mastery and generalization of skills learned in the clinic, parents are asked to practice the CDI skills at home during a daily 5-minute special playtime. In order to advance to PDI, parents must independently demonstrate mastery of the CDI skills. CDI coaching sessions continue and clinicians instruct parents in their use of the PRIDE skills until attaining mastery based on the following criteria: use of 10 labeled praises, 10 reflections, and 10 behavioral descriptions, while providing three or fewer commands, questions, and criticisms, and ignoring mild inappropriate child behavior (e.g., whining) during a 5-minute parent-child play situation.

PDI emphasizes directly decreasing disruptive behaviors while increasing child compliance. Parents continue to use positive attention and ignoring (i.e., differential attention) to differentiate between appropriate and inappropriate behavior. However, parents are also taught to issue clear, developmentally appropriate, direct commands and to provide consistent consequences for both child compliance and noncompliance. At the start of PDI, parents attend an additional didactic session, in which the therapist describes, models, and role-plays command giving and a time-out procedure with the parents alone. Following the didactic session, parents practice PDI skills in session with the therapist coaching and must demonstrate skill mastery to complete treatment. For a more in-depth review of PDI and a more complete description of PCIT see Eyberg (1999), Eyberg and Boggs (1989), Hembree-Kigin and McNeil (1995), and McNeil and Hembree-Kigin (in press).

Table 1. A Comparison of PCIT PRIDE Skills and Speech Therapy Skills.

PRIDE Skills	Example	Speech Skills	Example
Labeled praise: positive, specific evaluation of behavior, activity, or product of child.	Parent: <i>Great job putting the truck away.</i>		
Unlabeled praise: positive, nonspecific evaluation of behavior, activity, or product of child.	Parent: <i>Thank you.</i>		
Reflection: a declarative statement that has the same meaning as an immediately preceding child verbalization. (i.e., may paraphrase or elaborate upon verbalization but may not change meaning/ interpret unstated ideas.)	Child: <i>Car garage.</i> Parent: <i>The car is in the garage.</i>	Expansion: repeats child utterance using grammatical markers & semantic details of conventional form	Child: <i>Car garage.</i> Parent: <i>The car is in the garage.</i>
		Extension/Expatiation: adds semantic content to child's utterance	Child: <i>Car garage.</i> Parent: <i>He went inside.</i>
		Buildups and Breakdowns: breaks apart and re-builds child's utterance into mature adult form	Child: <i>car car</i> Parent: <i>It's in the garage. The garage. The car is in the garage.</i>
		Recast Sentences: reformulates child's remark into a different sentence type.	Child: <i>car car</i> Parent: <i>Is the car in the garage?</i> or <i>The car is not in the garage.</i>
Imitation: Replication of another's behavior.	Child: (puts nose on potato head) Parent: (puts nose on potato head) <i>I am putting a nose on Mr. Potato Head just like you.</i>	Imitation: imitates what the child says	Child: <i>I put a nose on the potato head.</i> Parent: <i>I am putting a nose on Mr. Potato Head too.</i>
Description: Behavioral Description: a declarative statement in which the subject of the sentence is the child and the verb describes the child's ongoing or immediately completed (<5 sec.) verbal or nonverbal observable behavior.	Parent: <i>You're playing with the blue car, driving the car, putting the car in the garage.</i>	Parallel-talk: Clinician describes child's behavior, providing running commentary of child behavior	Parent: <i>You're playing with the blue car, driving the car, putting the car in the garage.</i>
Information Description: a descriptive statement that introduces information about people, objects, events, or activities, but does not clearly describe the child's current or immediately completed behavior.	Parent: <i>The blue car is driving fast.</i> Or Parent: <i>I'm playing with the blue car.</i>	Self-talk: Clinician describes own behavior as they engage in parallel play with the child	Parent: <i>I'm playing with the blue car.</i>
Enthusiasm: Expression of enjoyment, excitement, or approval	Parent: <i>Yes, the train is red!</i>		

Adapted from

R. Paul, (1987). *Language disorders from infancy through adolescents: Assessment and intervention* (2nd. ed.). St. Louis, MO: MosbyS. M. Eyberg, M. M. Nelson, M. Duke, & S. R. Boggs (2005). *Manual for the dyadic parent-child interaction coding system* (3rd ed.). Available on-line at www.PCIT.org. [see Measures used in PCIT]

PCIT outcome research has established clinical and empirical support for the improvement of child behavior problems and enhancement of parental interaction styles (Eisenstadt, Eyberg, McNeil, Newcomb, & Funderburk, 1993; Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998). The efficacy of PCIT is seen in treatment with a diversity of problem behaviors such as ADHD (Matos, Torres, Santiago, Jurado, & Rodriguez, 2006; Nixon, 2001), separation anxiety (Pincus, Eyberg, & Choate, 2005; Pincus, Santucci, Ehrenreich, & Eyberg, 2008), abuse and neglect (Chaffin, Silovsky, Funderburk, Valle, Brestan, Balachova, et al., 2004; Timmer, Uriquiza, & Zebell, 2005), mental retardation, (Bagner & Eyberg, 2007), and chronic illness (Bagner, Fernandez, & Eyberg, 2004). At treatment completion, parental interaction styles during parent-child interactions have been characterized by increased levels of reflective listening, physical proximity, positive verbal reinforcement, and decreased criticism and sarcasm (Eisenstadt et al., 1993; Schuhmann et al., 1998). PCIT follow-up research suggests that these treatment gains are maintained for 5 years after treatment (Brestan & Eyberg, 1998; Eisenstadt et al., 1993; Hood & Eyberg, 2003; Schumann et al., 1998). Furthermore, the positive treatment effects of PCIT are found to generalize to the home (Boggs, 1990) and school settings (McNeil, Eyberg, Eisenstadt, Newcomb, & Funderburk, 1991). This research demonstrates that PCIT has many beneficial effects for parents and children with various presenting problems.

Although the effects of PCIT on language development have not been an area of direct empirical research, there are many characteristics of PCIT that may foster language development. In particular, research on factors associated with speech growth, components of PCIT that are similar to those employed in speech interventions, and unique features of PCIT all suggest that PCIT's emphasis on enhancing parent-child communication could lead to improvements in children's verbal abilities. In other words, PCIT may modify a child's home environment to better facilitate language (Paul, 2001). Research on environmental factors related to language facilitation demonstrates the importance of both parenting skills and context when considering treatment options.

In terms of parenting skills, PCIT targets both factors associated with increased and decreased speech development. Specifically, CDI helps parents focus on the child's activity, engage the child in a conversation, and utilize contingent feedback (e.g., differential attention), which are all characteristics assumed to facilitate speech. Furthermore, parents learn in CDI to avoid questions, commands, and criticism, which are parenting behaviors associated with speech delays (e.g., Hart & Risley, 1995).

Another promising feature of PCIT lies in the context and nature of the intervention. One of the unique features of PCIT is that the intervention takes place in the context of play between parents and children, which is a situation where parents generally exhibit less facilitative and more directive behaviors (e.g., Dunn, Wooding, & Herman, 1977; Hoff-Ginsberg, 1991; Tulviste, 2003). Parent-child interactions within a play context heighten the ecological validity of the treatment interactions, thus promoting generalization (a limitation of some speech interventions). Lastly, guiding the parents to act directly as the child's therapist increases the potential dosage of treatment (i.e., parents may work with child at home daily whereas a therapist may only see clients 1-hour weekly during treatment sessions, parents may continue skills once family has completed treatment). The dose of treatment is also enhanced with the mastery criteria utilized in PCIT which ensures that parents are giving sufficient praises, reflections, and descriptions in a five-minute interaction. For mastery, parents must use one of these language facilitation skills every 10 seconds during daily practice time at home. By practicing these skills at such a high-rate, parents develop positive language habits that they begin to naturally use when interacting with their children outside of the special playtime. Providing the highest possible dose of treatment is essential for language development because the quantity of language input is predictive of positive outcomes (e.g., Hart & Risley, 1995).

Similarities Between PCIT and Speech-Language Interventions

In addition to PCIT directly focusing on factors related to language development, many similarities exist between techniques utilized in speech interventions and components of PCIT. These

shared characteristics include reflections, praise, and paralleling the child's play. Table 1 displays a comparison of definitions and examples of specific techniques utilized in PCIT and common speech interventions.

Within both literatures (i.e., language and PCIT), reflections are thought to teach parents to properly attend to and demonstrate acceptance, interest, and understanding of the child's speech. In particular, the PCIT literature suggests that reflections may have a positive effect on child speech (e.g., increasing communicative speech, as well as improving vocabulary, grammar, pronunciation, and clarity; Eyberg, 1988). The speech research demonstrates empirically that adult repetition of toddler speech increases the probability that typically developing children will imitate adult verbalizations (e.g., Folger & Capman, 1978). Although reflections are hypothesized to serve similar purposes in PCIT and speech interventions, this component of PCIT has not been systematically investigated.

Another behavior, praise, is used most commonly within both literatures as positive reinforcement for desirable child behavior. For example, labeled praise is used in PCIT to increase compliance and prosocial behavior, whereas praise is used in speech interventions to promote compliance with therapy, and correct answers during drills. Although praise is utilized in speech therapies, it has not been subject to extensive scientific scrutiny. Empirical research in the parenting literature demonstrates that praise increases compliance levels of typically-behaving children (Parpal & Maccoby, 1985). This literature further suggests that other forms of positive attention (e.g., reflection, behavioral description) may be needed to increase compliance levels in children with behavior problems (Parpal & Maccoby, 1985).

Both PCIT and speech interventions suggest the importance of paralleling the child's play. In PCIT, facilitative play is accomplished through praise, reflection, imitation, description, and enthusiasm, while the speech-language literature defines facilitative play skills as praise, extensions, expansions, recast sentences, build ups and breakdowns (i.e., reflection), parallel talk (i.e., behavioral description), and questions. Through facilitative play, adults can communicate that the child's selection of activities is acceptable and viewed as positive from an adult perspective. The speech literature suggests parallel-talk (i.e., behavioral description) allows the clinician to assist the child in pairing words and their referents.

Differences Between PCIT and Speech-Language Interventions

Despite numerous similarities between skills in PCIT and skills utilized in speech interventions, various differences exist. For instance, PCIT clearly differentiates between labeled and unlabeled praise. This distinction is important because labeled praise is associated with a greater increase in behavior than unlabeled praise (Bernhardt & Forehand, 1975). Therefore, theoretically, using labeled praise to reinforce child verbalizations (e.g., 'good talking' or 'I like it when you talk') should increase child verbalizations to a greater extent than unlabeled or general praise.

Another major difference between the literatures involves the use of reflection. Although the PCIT literature categorizes reflective statements into one group, the speech literature further specifies reflective statements into imitations, expansions, extensions, and recast statements (see Table 1 for definitions and examples). Within PCIT, reflections are defined as statements that do not add or alter the child statement with unstated ideas, yet the speech literature suggests that elaborating on child verbalizations facilitates speech. These types of response-contingent speech statements are thought to provide the child with information about how to encode ideas and verbalizations into a more mature linguistic form (e.g., Owens, 1998). Adult expansions have been demonstrated to increase the probability that a child will spontaneously imitate adult speech more than any other type of adult conversation (e.g., Folger & Chapman, 1978; Scherer & Olswang, 1984). Extensions are associated with significant increases in children's sentence length (e.g., Barnes, et al., 1983). Another type of reflection, recast sentences, have been shown to be highly effective in treatment when teaching grammatical forms to children with specific language impairment (e.g., Nelson, Camarata, Welsh, & Butkovsky, 1996; Hoff-

Ginsberg, 1990). Lastly, buildups and breakdowns are thought to demonstrate the correct construction of sentences (see Table 1 for definitions and examples).

Clearly, one of the most central differences between the speech-language and behavioral parent training areas is the conceptualization of adult question use during parent-child or clinician-child interactions. The impact of questions during interactions within each type of intervention approach has been heavily influenced on clinical experience. Speech-language intervention approaches often promote the use of questions (e.g., Paul, 2001), while PCIT recommends that question use should be reduced because questions may serve as subtle directives, take away the child's lead of the interaction, provide limited information, and may be limited in usefulness to progress treatment (e.g., Eyberg, 1988; Eyberg, Nelson, & Boggs, 2008). However, the speech-language literature has demonstrated empirical support for use of questions in increasing child communicative speech (e.g., Fey, 2002; Hoff-Ginsberg, 1986). Furthermore, the categorical classifications of questions vary between the literatures. The speech-language literature has extensively divided question-type for further analysis whereas PCIT classifies questions into two central categories (e.g., information questions, descriptive/reflective questions). With this said, the role of questions in treatment may be due to the overall goals of the treatment intervention (e.g., facilitation of parent-child relationship, facilitation of language acquisition).

Potential Contributions of PCIT in Language Development

It is evident that PCIT and speech-language interventions share similar components including repeating child verbalizations, paralleling child play, and praise. Additionally, unique components of PCIT (e.g., PDI, emphasis on labeled praise, coding parental verbalizations, and direct coaching of parents during parent-child interactions until a mastery level is attained) may potentially enhance treatment gains. Both similar characteristics and unique features are indicative of the clinical utility of PCIT in children with language delays. In particular, PCIT may have beneficial effects on language development in young children with co-occurring language delays and behavioral problems and children who are at-risk for language delays and/or behavior problems.

Children who exhibit both disruptive behavior problems and delayed language may benefit in several specific ways from receiving PCIT in conjunction with speech therapy. First, PCIT may facilitate language development similarly to speech interventions by providing a language-rich environment. Additionally, PCIT teaches parents to use skills throughout daily parent-child interactions which may increase the rate at which language develops given a larger dose of treatment (i.e., parents spend more time with children than speech-language therapists who see children for scheduled therapy sessions). An additional benefit of PCIT is that the PDI stage of treatment directly focuses on reducing disruptive behaviors which are commonly acknowledged as barriers to speech and language treatment (e.g., aggressive behaviors and noncompliance). In particular, this treatment component has the potential to improve child behavior in home and treatment settings. Specifically, research has demonstrated that the effects of PCIT generalize to school environments (McNeil et al., 1991); therefore, it is likely that treatment effects would also generalize to a similar speech and language treatment setting. Given the large dose of treatment, broad generalization of treatment effects, and potential magnitude of these outcomes, it is likely that PCIT could enhance the effectiveness of traditional speech therapy services for facilitating the language development of young children.

PCIT may also serve as a preventative approach for children at a heightened risk for both delayed language and externalizing behavior problems. Both literatures have identified similar risk factors (e.g., SES, parenting style, gender) that may serve as a way to target children in need of an enhanced language environment. As a primary prevention approach, PCIT may alleviate the initiation of problem behaviors and improve the prognosis for at-risk children. First, PCIT may short circuit the relation between various risk factors and problem behaviors which may warrant further clinical attention (e.g., language deficits, clinically significant noncompliance and defiance). PCIT's positive parenting skills (i.e., attending to positive behaviors, ignoring negative non-harmful behaviors) may enhance the parent-child relationship

in a manner that would alleviate communication disconnect that is often thought to hinder speech-language treatment progression. The similarities in treatment style of PCIT and existing speech-language interventions may allow PCIT to familiarize and prepare children for the expectations and context of speech-language treatment (e.g., structure of child-directed play during CDI, combination of facilitative skills and parent-directed commands provided during PDI). In particular, PCIT has been shown to reduce problem behaviors in children at risk for language delays. With this, use of PCIT as a preventative method may potentially mitigate the extent of speech-language treatment necessary, lessen the severity of displayed problem behaviors (e.g., delayed language, disruptive behavior), and positively alter child developmental projections.

Although PCIT's effectiveness for use with a broad range of populations (e.g., children with mental retardation, separation anxiety, chronic illness) is a suggested strength of the treatment program, PCIT is not appropriate for all parents and children. As a program developed for children ages 2 to 7 and empirically-supported for children between the ages of 3-6 years of age (Eyberg, Nelson, & Boggs, 2008), PCIT may not be effective for children outside of this developmental range. In particular, children displaying deficits placing them below the cognitive age of 2 may not be able to appropriately comprehend parental commands or may not have sufficient expressive language to benefit completely from a parallel play interaction. Furthermore, families in which parents are not willing to take an active and consistent role in the facilitation of their child's development through an intensive intervention program may also not be appropriate for a parent-child treatment approach.

Including PCIT as a supplement to existing speech and language intervention approaches has promising implications. However, further empirical examination of these implications remains necessary for progression (e.g., randomized controlled trials including comparison groups such as a wait-list control group, a group receiving standard language interventions, and a group of typically-developing peers). Measures of language abilities (i.e., TOLD, PPVT, IQ scores) should be incorporated into PCIT research studies to assess language levels as both demographic variables and outcome variables. Longitudinal studies examining changes in PPVT and TOLD scores with various treatment methods (i.e., PCIT as a preventative approach, PCIT as a facilitative approach), intervention combinations (i.e., PCIT, PCIT and speech-language treatments) and populations (i.e., children with comorbid language delays and behavioral problems, children with language delays, children with behavioral problems, children at risk for language delays and behavioral problems) also need to be explored. Additionally, the effects of specific speech and parent-training components (e.g., reflections, praise, imitation) on both initial and long-term language skill growth and development must also be assessed. Further examination of the influence of parent-child interactions on child behavioral and language difficulties will provide information on how to better enhance child outcomes in both the speech-language and behavioral parent training settings. These findings may provide important social contributions through the prevention and intervention of language delays in young children.

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