

Contemporary Perspectives on Facilitating Language Acquisition for Children on the Autistic Spectrum: Engaging the Parent and the Child

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“In order to develop normally, a child requires progressively more complex joint activity with one or more adults who have an irrational emotional relationship with the child. Somebody’s got to be crazy about that kid. That’s number one. First, last, and always.” (Bronfenbrenner, 1979).

Scenario One

A clinician sits with Max, a three-year-old boy diagnosed with autism. Max pushes a train back and forth at the edge of a small table without referencing the therapist. The clinician playfully joins Max with another car of the train, gently bumping his train with hers. Max looks at the clinician and smiles. The clinician smiles back and says, “I bumped your train.” Max’s mother sits silently off to the side watching the therapist engage her son with the train that he often holds in his hand. Following this session, the therapist encourages the mother to try similar activities and strategies at home.

Scenario Two

A clinician sits with Max, a three-year-old boy diagnosed with autism and his mother. Max pushes a train back and forth at the edge of a small table without referencing the clinician or his mother. The therapist suggests that Max’s mother join him in his play with another car of the train by gently bumping his train with hers. The therapist encourages mom to try to catch Max’s gaze and say “boom” as the train cars bump into each other. When Max does not respond, the therapist suggests that mom make highly intonated “choo-choo” noises as she bumps the trains again. At this point Max looks briefly at mom, smiles at her, and mom smiles back. Following this ses-

sion, the therapist and mom discuss the strategies that were most successful in engaging Max as well as how mom felt when he did and did not respond to her.

Due to the increase in the prevalence of children diagnosed with autistic spectrum disorder (ASD), professionals currently treat greater numbers of children with this diagnosis than ever before (National Research Council, 2001). Parents as well as clinicians and educators working with children on the spectrum often look to the speech-language pathologist (SLP) for direction on how to address their child’s pervasive communication challenges (ASHA, 2006). The two scenarios above represent different conceptualizations of the parent’s role in her child’s therapy. These sessions differ on at least three dimensions: 1) the parent’s participation during the intervention (onlooker vs. interactant), 2) the nature of the instruction with the parent (modeling vs. coaching), and 3) reflection on the parent’s feelings about the session (overlooked vs. addressed).

Although many programs are available to address the communication challenges of children on the autistic spectrum, few are rooted in a developmental understanding of what children know before they begin to talk and how the relationship between the child and the caregiver contributes to this knowing. The prevalence of programs which do not reflect this developmental understanding, such as those that are more behaviorally-based, is of concern to many professionals. In current practice in New York State, for example, parents of young children who have recently been diagnosed with ASD are often advised to initiate behavioral approaches and are given less information about the kind of developmental relationship-

based approach that will be discussed here (New York State Department of Health, 1999). While behavioral approaches vary, their common characteristics include the belief that children need to learn language in highly structured contexts, through the application of unidirectional adult-directed operant conditioning procedures and reliance on preset curricula for all children (e.g., Lovaas, 1977). Behavioral approaches are often contrasted with paradigms that are child-centered and social-interactionist (Fey, 1986; McCauley & Fey, 2006). These perspectives prioritize goals that are based on developmental sequences, use naturalistic contexts and everyday routines, acknowledge that interactions are bi-directional with partners mutually influencing one other, and recognize and support individual variation among children.

Despite the fact that developmental programs reflect contemporary thinking, parents are often not familiar with this perspective and consequently, their implementation is the exception rather than the rule. Our review of the chapters covering intervention approaches in a recent handbook on ASD (Volkmar, Paul, Klin, & Cohen, 2005) supports the prevalence of behaviorally-oriented programs. Our hope is that with greater awareness of developmental parent-based programs for language facilitation and with paradigm shifts in the training of speech-language pathologists and other professionals, more children on the autistic spectrum and their families will be able to access these contemporary alternatives.

The purpose of this article is 1) to review three parent-based programs which are grounded in the core belief that the parent-child relationship is the primary context for facilitating development, 2) to identify the common threads and unique features of each of these child-centered, social-interactionist programs and 3) to generate for professionals a composite of interdisciplinary competencies which are necessary for our work with children with ASD and their families.

To begin, best practices for the development of language intervention programs should be rooted in the science of child development and the science of language acquisition. Reconsidering the core deficits of children on the autistic spectrum underscores the importance of understanding the process of typical development and the origins of language and communication for each developing child. For example, challenges in engagement and social communication are seen not only in children on the autistic spectrum who are non-verbal, but also in children who have well-developed linguistic systems (Prizant & Wetherby, 1998). Prioritizing the social-communication capacities that set the stage for the acquisition of language and the ability to use language in interpersonal in-

teractions is central to developing intervention programs. Similarly, understanding the interpersonal context in which these social-communication capacities are typically nourished is central to determining who the participants will be during the intervention process. Finally, understanding the cognitive resources needed to learn language will set the stage for developing strategies that may simplify the task for children who are challenged in these capacities.

Current thinking about the process of language acquisition and the caregiver-child relationship can guide our development of intervention programs for all children with challenges, including those on the autistic spectrum. In order to illustrate how the three programs reviewed here meet this challenge, they are explored in light of a contemporary model of language acquisition. By doing this, we hope to highlight why these programs offer such impressive alternatives to more structured product-based approaches. It is our belief that the Bloom and Tinker (2001) Intentionality Model offers a particularly helpful conceptual framework for understanding the developmental challenges of children on the autistic spectrum as well as for generating the goals and strategies of intervention. This model in combination with recent findings on the power of the child's early relationships sets the stage for the review.

In Bloom and Tinker's (2001) model (see Figure 1), two aspects of the mental life of the young child—social and emotional development (engagement) and cognitive development (effort) are tied to the child's acquisition of language. Bloom and Lahey's (1978) earlier conception of language as the integration of form, content, and use is now embedded in the context of early social-emotional interactions and various processes of cognitive development (Bloom & Tinker, 2001). With an understanding of engagement and effort, the developmental integrity of the three parent-based programs reviewed here is emphasized.

Engagement. The area of engagement can be understood as the social and emotional motivation for learning a language in the first place. Bloom and Tinker (2001) reiterate the widely accepted view that infants are responsive to other persons from the beginning of their lives. The intersubjectivity that develops between infant and parent during the first year of life serves as the foundation for the child's social connectedness to other people throughout life. "Engagement builds on the intersubjectivity between the child and other persons, and on the relationship between both the child and other persons to the physical world" (Bloom & Tinker, 2001, p. 15). The notion of engagement is a central organizing principle for clinicians and parents who wish to facilitate language for

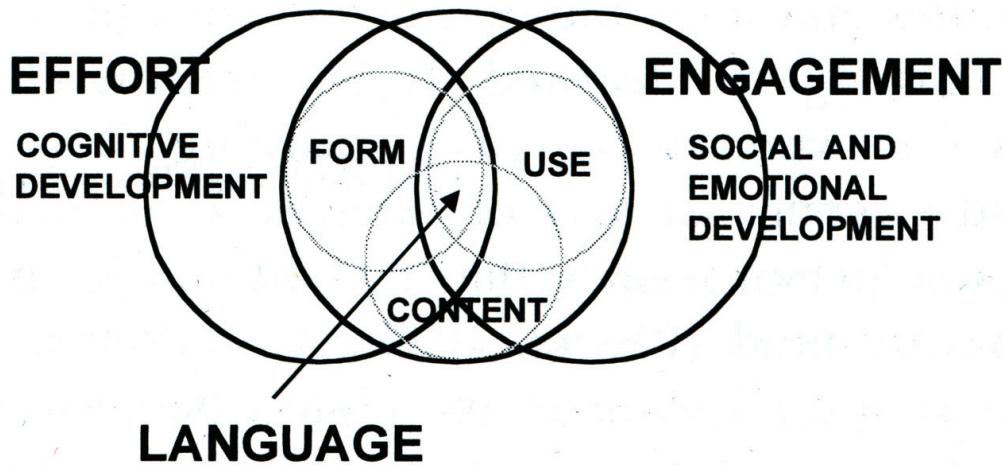


FIGURE 1. The Intentionality Model

From *The Intentionality Model and Language Acquisition*, by L. Bloom and E. Tinker, 2001, Monographs of the Society for Research in Child Development, 66(4, Serial No. 267), p. 14. Copyright 2001 by Blackwell Publishers. Reprinted with permission of the author.

children with challenges in the social-emotional and affective domains. In fact, it is the child's connectedness to his primary caregivers and all he learns from the "dance" they engage in that sets the stage for the comprehension and production of language. Children who are unable to participate in the affective back and forth of interaction, who have difficulty reading and producing non-verbal signals, or are less active in communicating intentions, are at risk for developing the form-meaning relationships that define language.

Since engagement is both a process and a product of early development, the role of the caregiver-child interaction is key to describing what needs to be encouraged and facilitated in atypical development. "The initial emotional duet created by mother and baby—with their complementary interweaving of smiles, gestures, and animated vocalizations in social play—builds and strengthens brain architecture and creates a relationship in which the baby's experiences are affirmed and new abilities are nurtured" (National Scientific Council on the Developing Child, 2004, p 4). It is in the context of this caregiver-child relationship that the child's emerging capacities are fostered, setting the stage for development in every domain, including language. The fact that family-centered service delivery models were designed to capitalize on the power of this relationship must be remembered as we review parent-based intervention programs.

Effort. The Intentionality Model also includes the component of effort, which "captures the cognitive processes and the work it takes to learn a language" (Bloom

& Tinker, 2001, p.15). This component of the model considers the limitations of the resources of the young child and the demands of the processes of learning to interpret and express language. These constructs have immediate resonance for our thinking about children with ASD. For them, the demands of learning to comprehend and produce symbols are evident from their inability to do so easily. Although it is not known whether the child with ASD has problems in the mental representation of an intentional state, the perception and memory required to develop the intention, the association of the word with the intention, and/or the encoding of the word, the work required to accomplish these processes is difficult for the child with compromised resources. Intervention programs, which address these processes at the same time that they maintain the integrity of development, offer strategies and contexts to help children learn language more easily.

Three programs are discussed in this article: More than Words™ (Sussman, 1999), Communicating Partners (MacDonald, 2004) and the Developmental Individual Relationship-based™ model (Greenspan & Wieder, 1997a). These parent-based programs are consistent with current notions of best clinical practices for children on the autistic spectrum (Girolametto, Sussman, & Weitzman, 2007; Kaiser, Hancock, & Nietfeld, 2000; Mahoney & Perales, 2003; 2005; National Research Council, 2001) and the family-centered mandate of early intervention. It is our feeling that these three intervention paradigms are consonant with the components of the Bloom and Tinker (2001) Intentionality Model. Specifically, the children's

challenges in the social-emotional aspects of development have been placed center stage and the role of the parent has been prioritized. The notion that the young child's "relationships . . . incorporate the qualities that best promote competence and well-being" is embedded in this thinking (National Scientific Council on the Developing Child, 2004, p.1). Further, an appreciation of the resources and demands of learning language are reflected in intervention strategies used to simplify the complex process of language learning.

Program Descriptions

More than Words: The Hanen™ Program for Parents of Children with Autistic Spectrum Disorders (MTW) (Sussman, 1999) was developed by the Hanen Center, a charitable organization based in Toronto, Canada which was founded more than 30 years ago. An innovator in family-centered early language intervention, the Hanen Center provides services to children, develops resources for professionals and parents, and conducts research. MTW is one of several Hanen programs including It Takes Two to Talk: The Hanen Program for Parents (Manolson, 1992; Pepper & Weitzman, 2004) and Learning Language and Loving It™ (Weitzman & Greenberg, 2002). Hanen programs empower parents to become their child's primary language facilitator, thus maximizing the child's opportunities for communication development in everyday situations. MTW, developed specifically for children on the autistic spectrum and their families, provides communication and language intervention, parent education, and social support. The program teaches parents how to promote their child's social interaction, communication, and play. In MTW, parents are educated about their child's level of development, individual learning styles, and sensory preferences, and are taught specific strategies designed to facilitate communication and language. Parent training is carried out in both small group workshops and individual sessions with coaching and feedback by a speech-language pathologist who has received specialized training.

Communicating Partners (CP) (MacDonald, 2004) is a parent and professional education program guided by the belief that parents are in the best position to ensure that their children reach their potential in social communication skills. Previously known as the "ECO" ecological program (MacDonald & Carroll, 1992), the current version of the approach provides explicit guides for both parents and professionals working with children who are delayed in their communication skills, including children with ASD. The focus of the program is to enable children

to become social in the context of their family members who serve as daily life partners. The key goal of the program is to help parents and professionals develop socially effective relationships with the child who might otherwise become isolated from society. The philosophy of the approach is to support each child's current strengths to build enduring social relationships, primarily in the context of the home.

The Developmental Individual Difference Relationship-based Model™ (DIR) (Greenspan & Wieder, 1997a) rests on a comprehensive intervention program with the goal of strengthening individual developmental domains such as engagement, symbolic play, language, and motor planning. DIR, which is often referred to as Floortime (a specific strategy within the broader model), is an interdisciplinary approach for working with children with developmental challenges. Although not specifically a language intervention program, the DIR approach speaks to the kinds of capacities that are integrally tied to the development of language. A goal of the program is to help children build core functional developmental capacities, which serve as the foundations for relating, thinking, and communicating. The functional developmental capacities include the ability for shared attention, engagement, reciprocal emotional interactions, and the creative and logical use of ideas. At the higher levels of development, the DIR model addresses the kind of symbolic thinking that leads to more complex levels of language such as cause and effect, problem solving, inference, and critical thinking. The comprehensive intervention focuses on interdisciplinary developmental domains, the child's individual profile of processing abilities, and relationship-based work. As with the other programs mentioned above, parent involvement throughout the intervention is required.

In summary, MTW (Sussman, 1999), CP (MacDonald, 2004), and DIR (Greenspan & Weider, 1997a) are interventions developed for young children with ASD which emphasize engagement and effort, the two components of the Intentionality Model (Bloom & Tinker, 2001). Each program underscores the importance of the child's connectedness to his primary caregivers who are encouraged to play critical roles in their child's development and addresses the individual differences which impact on the child's effort in learning to talk.

Similarities among the Programs

We begin the review of the three programs by addressing the shared core components which tie them to one another and to a distinct perspective on serving

young children with developmental challenges. These components include the theoretical paradigms from which they have been generated, the child's developmental profile, and the family-centered commitment which is consistent with current thinking about best practices. Following this, the differences among the programs are delineated, including how the clinicians are taught to work with parents, how the parents are taught to work with their children, and the specific goals and strategies used in each of the interventions. The review of the similarities and differences between and among the programs sets the stage for the kinds of competencies needed by professionals who are eager to embrace this approach and are interested in preparing themselves to do so.

Theoretical Paradigms. MTW. Unlike its predecessor, *It Takes Two to Talk* (Manolson, 1992; Pepper & Weitzman, 2004), the MTW program, while clearly developmental, blends aspects of both behavioral and naturalistic child-centered models, taking an eclectic middle ground approach (Sussman, 2002) described as contemporary behavioral (Prizant & Wetherby, 1998). The breakdown of activities into structured small steps is consistent with a behavioral approach, whereas the provision of opportunities to use language for spontaneous, functional communication is consistent with social pragmatic models. MTW is theoretically based on social interactionism (Bohannon & Bonvillian, 1997) emphasizing the child's learning in the social context of everyday, naturalistic interactions in the home. A central tenet of this framework is the facilitative effect of the responsiveness of the parent on the development of the child's social communication (Girolametto, Sussman, & Weitzman, 2007).

CP. This program "reflects values and perspectives from several fields including child development, disabilities, education, and behavior change" (MacDonald, 2004, p. 60). Like MTW™, CP is a developmental approach which shares some contemporary behavioral theoretical foundations. For example, MacDonald (2004) draws on the notion of identifying pivotal response behaviors (Koegel, Koegel, & McNerney, 2001) as important intervention targets because they impact on the development of several other behaviors. Motivation, a pivotal behavior, (Koegel et al., 2001) is relevant to the CP model because it is necessary for spontaneous communication. MacDonald (2004) notes the tendency of children with ASD to exhibit "learned helplessness" (Seligman, 1990) allowing their caregivers to communicate for them. He emphasizes that children's motivation to interact with others improves when they are encouraged to express their own interests and intents. Four additional pivotal response behaviors, self-regulation, initiation, empathy, and social interaction (Koegel et al.,

2001), have been identified as playing essential roles in the development of social communication.

Developmental principles are key in all aspects of the CP approach, which emphasizes reciprocal responsive relationships between the child and members of his family. Engagement between children and their life partners is at the heart of the program. Social relationships are seen as crucial not only to the development of communication, but also to the development of other domains such as cognition, a position consistent with prominent psychologists, including Bruner (1977) and Vygotsky (1978), whose work has influenced the program.

DIR. Although not specific to language and communication, the DIR model is consistent with the programs described above. In this approach, six functional emotional developmental levels serve as the foundation of the assessment and intervention. These levels represent how children integrate their capacities (motor, cognitive, language, spatial, sensory) to achieve emotionally meaningful interactions and to develop higher levels of thinking. Thus, similar to MTW and CP, stages of typical development are used as the theoretical-clinical paradigm from which children with challenges are understood. In DIR, these stages address different domains including emotional development, symbolic development, sensory processing and regulation, as well as language. The science of early development, which supports the parent-child relationship as the context for learning in the young child, is realized in the intervention program by emphasizing the coaching of parents as the clinician's major role. This perspective is common to the three programs discussed here and is distinct from interventions where the therapist works with the child with the parent on the sidelines.

As can be seen, MTW (Sussman, 1999), CP (MacDonald, 2004), and DIR (Greenspan & Weider, 1997a) address aspects of engagement and effort, the two components of the Intentionality Model (Bloom & Tinker, 2001). Like the Intentionality Model, the three programs recognize the importance of developmental sequences such as engagement before communication and communication before language, the transactional relationship between partners in a dyadic interaction, and the importance of responsivity of the partners in order to foster affective interactions. Further, like the Intentionality Model (Bloom & Tinker, 2001), the programs acknowledge the role of the child as an active participant in the language learning process, the limitations of the child's resources, and the effort or work needed to learn language, especially when learning capacities are compromised.

The Child's Developmental Profile. MTW, CP, and DIR have been designed to support the development of children with disorders of communicating and relating, in

particular children on the autistic spectrum. Despite the fact that this diagnosis represents a heterogeneous group of children, challenges in social interaction, communication, and range of interests are typical (American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders*, 2000, text revision).

In reference to challenges in social interaction and communication, or engagement, children with ASD may be placed on a continuum ranging from those children who are preintentional and nonverbal to those who are intentional and verbal. Children who are preintentional do not communicate with others. The child might whine or fuss, causing a reaction from a listener, but she has not produced those signals for purposeful communication. In contrast, the child who is intentional but nonverbal, may also fuss or whine, or use other nonverbal forms of communication such as eye gaze and gesture, in order to achieve a result (e.g., mother's attention). Children who are both intentional and verbal communicate through words, word combinations, and/or well-developed syntactic utterances, but may have difficulties in the pragmatic aspects of language use.

Notably, while each program addresses different domains relative to stages of development, all three approaches describe children using developmental anchors. MTW identifies four stages of development in social communication and language: 1) the own agenda stage, 2) the requester stage, 3) the early communicator stage, and 4) the partner stage (Sussman, 1999). These reflect a child's ability to engage with others, the forms and functions used to communicate, and the child's level of language comprehension. For example, children who are at the own agenda stage interact briefly, but do not yet communicate intentionally or understand words. In contrast, children at the partner stage interact for longer periods, communicate intentionally for a variety of purposes using gestures, words and sentences, and understand many different words.

Like MTW, the CP stages of development focus on social interaction and communication. The stages of CP, 1) interaction, 2) nonverbal communication, 3) social language, 4) conversation, and 5) civil behavior, represent a continuum from earliest engagement to later complex conversations (MacDonald, 2004). Children at the interaction stage join the activities of others engaging in reciprocal turn-taking such as rolling a ball back and forth. Children at the stage of nonverbal communication interact for social reasons other than to satisfy their needs. For example, the child might point to an object to capture the parent's attention, whereas at the earlier stage of interaction, the child might point only to satisfy a need such as obtaining a toy out of reach on a shelf.

In the DIR approach, the stages represent six levels of functional emotional development: 1) shared attention and regulation, 2) engagement and relating, 3) two-way purposeful emotional interactions, 4) shared social problem solving, 5) creating symbols and ideas, and 6) building logical bridges between ideas: logical thinking. Although these six levels are not specific to language and communication, they are integrated with the interpersonal and symbolic domains of language at every stage. More recently (ICDL-DMIC, 2005), corresponding developmental levels of speech, language and communication have been generated within the DIR paradigm and include 1) self-regulation and interest in the world, 2) forming relationships and affective vocal synchrony, 3) intentional two-way communication, 4) first words, 5) word combinations and, 6) early discourse.

In terms of effort, young children are limited in the cognitive processes and resources they bring to the task of acquiring language (Bloom & Tinker, 2001). Learning to communicate and use language becomes even more of an effort for children with ASD who may have limitations in cognitive processing and challenges in sensory processing and self-regulation. The three programs emphasize the importance of characterizing children in terms of their individual differences in reactions to the sensations of movement, touch, sight, sound, and smell. Some children are oversensitive, or hyperreactive, to certain sensations and consequently try to avoid them, whereas others are undersensitive, or hyporeactive, and seek out certain sensory stimuli. For example, a child who is hypersensitive to movement might be afraid of escalators. Another child who is hyposensitive to movement might enjoy jumping on the bed. These individual differences are important in helping parents understand their children's atypical behavior beyond language and can be used to create contexts which may compensate for the child's regulatory needs. For example, parents can turn their children's love of motion into an interactive chasing game in which parent and child take turns playfully pursuing one other.

Role of the Family. The three programs share the view that parents are the primary agents of engagement and learning. All recognize that as partners in their child's first relationship (Stern, 1977), parents are the most emotionally invested agents of their child's development as a social-communicative person. Not only are parents seen as the best facilitators of development, but they are also recognized as the ones who can offer the intensity of intervention recommended by the National Research Council (2001). As such, parents are seen as indispensable to their children's progress in learning to interact and communicate. All three programs seek to empower

parents to become their child's primary language and social-emotional facilitator through natural interactions that take place during everyday events such as meal time, bath time, or looking at books. The role of the clinician is seen as providing a collaborative, respectful partnership with the parents who clearly know their child best.

In terms of similarities, MTW, CP, and DIR are developmental parent-based, family-centered interventions whose goal is to facilitate social communication and language in children with ASD. The programs place parents center-stage, recognizing them as the primary agents of change in their child's development as we saw in Scenario Two at the beginning of the article.

A final similarity across the programs is that the child's particular profile of sensory processing and regulation is considered key to determining the contexts of learning. We suggest that the threads of engagement and effort (Bloom & Tinker, 2000) are interwoven in the three aspects of the programs discussed thus far.

Differences across the Programs

Having discussed the common theoretical bases of the three programs, the characteristics of the children they were designed to help, and the significant role of the family in each of them, we now address the differences among the interventions. Reviewing these differences allows us to consider additional program components, which are translated into interdisciplinary competencies for graduate or continuing education at the end of the article. These include: 1) how the clinician learns to teach the parents, 2) how the parents learn to teach their child, 3) the goals the parents facilitate, and 4) the strategies the parents learn.

How the Clinician Learns

The three programs represent a continuum for teaching clinicians how to engage parents in the intervention process, from the more explicit to the more experiential. On the more explicit side, in MTW, speech-language pathologists are taught how to provide parents with the information and support needed to facilitate their child's social-communication by participating in a variety of learning experiences including demonstration, discussion, and role-play. Clinicians are encouraged to teach parents to make changes in their language interactions by remembering helpful phrases. For example, "go slow and show" and "say less and stress" facilitate parents' ability to increase the salience of their speech, reduce the complexity of their language, and emphasize key words.

In contrast to MTW, the CP training is available not only to speech-language pathologists but to other professionals such as psychologists. Training of the professional occurs through large group seminars, review of videotapes of parent-child interactions, which demonstrate the five stages and the five strategies of the program (MacDonald, 1992; MacDonald & Wilkening, 1993), and a manual-based curriculum (MacDonald & Mitchell, 2002). Specific strategies, which can be used by the clinician to coach parents, are suggested. For example, parents are taught to increase certain behaviors, such as "waiting silently with expectation" and decrease other behaviors, such as "dominating turns" to promote reciprocal turn taking.

On the more experiential end, the DIR training embraces clinicians who are from many fields such as speech-language pathology, psychology, social work, occupational therapy, education, and pediatric medicine. The learning process involves periodically presenting one's work with children and parents to an interdisciplinary group of peers and engaging in ongoing supervision with a DIR certified mentor. A primary competency in the training is for clinicians to demonstrate how they have coached parents to interact with their children, a skill learned through didactic training and review of their work with the mentor. Although not a prescribed program, the supervisory process would be considered the most effective avenue for teaching clinicians to help parents facilitate their child's development. Clinicians are also supervised regarding mental health issues that impact on the parent-child relationship and are encouraged to engage in reflective practice.

How the Parents Learn

MTW. Each MTW program begins with a group orientation meeting for each family that has enrolled. The intervention consists of a combination of group-training sessions and individual home visits for videotaping, coaching, and feedback. A unique aspect of all Hanen programs is that parents are taught through principles of adult learning, which include providing opportunities within the group sessions for parents to practice what has been presented (McCarthy, 1987). For example, to teach parents about a particular strategy such as "follow your child's lead," parents might be presented with segments of the teaching videotape that demonstrate other parents applying that strategy with their children, followed by a discussion of how they could practice the strategy at home with their own child.

CP. In CP, parent training occurs through three phases: education, professional training, and home practice. In the

education phase, parents are introduced to developmental information on how children communicate at different stages. The clinician helps the parents identify their child's stage of development, how to facilitate the child's development at different stages, and how to move the child across stages, for example, from nonverbal communication to social language. In the professional training phase, a clinician demonstrates the program strategies such as "balance," "match," and "respond," and then coaches the parent to become the child's communicating partner. During the home practice phase, parents apply the strategies during daily routines and are encouraged to maintain a written diary of concerns and progress. Although designed for families for home use, the program can be adapted for clinical and educational settings.

DIR. In the DIR model, the parents are asked to play with their child while the therapist provides coaching on the use of DIR principles. For example, parents are encouraged to promote "circles of communication" which are continuous back-and-forth exchanges between the child and the parent. The therapist helps the parent to identify the child's functional emotional level and to work towards strengthening and expanding the child's capacities. The clinician reflects with the parent, addressing her questions and concerns relative to the roadblocks to achieving interactive flow and higher symbolic capacity. The clinician also guides the parent's understanding of the child's sensory and regulatory challenges and models how the parent might work around and with them. For example, the parent might be instructed to bounce their child seated on a large therapy ball in order to increase affective interactions and vocalizations.

Goals Parents Facilitate

In each of the programs, goals are determined based on paradigms of language acquisition and/or social-emotional and symbolic development. Differences can be seen in the specific parameters addressed.

MTW. In MTW, parents complete a form/function checklist at the outset of the program. This form is used to identify why their child communicates, for example, to request a desired object, and how the child communicates, for example, through gestures, vocalizations, or words. From this, the child's specific form/function goals are generated, such as using pointing to indicate. A second area for goal setting is expressing communicative functions through more sophisticated forms, such as the child's use of words rather than sounds to comment. A third area for goal-setting is turn taking, for example, the child's engagement in a reciprocal game of blowing and popping bubbles with the parent.

CP. The CP program uses the Adult-Child Relationship Map (ARM) for assessment and for determining goals. The child's stage of communication, that is, interaction, nonverbal communication, social language, conversation, or civil behavior is determined. Parents focus on moving the child through these stages to promote more sophisticated levels of social communication. The most effective goals derive from the child's current strengths rather than norms of typical development based on chronological age. A goal at the stage of interaction might be for the child to play reciprocally in a give-and-take manner, for example, rolling a ball back and forth several times. Goals at the level of nonverbal communication include helping the child to express intentions such as getting attention or protesting through facial expressions, gestures, or vocalizations. A goal at the conversational stage might be for the verbal child to take reciprocal back-and-forth turns with her parent while looking at pictures in a book together.

DIR. In DIR, parents and therapists collaboratively focus on moving the child up the Functional Emotional Developmental Levels (Greenspan & Wieder, 1997a), eventually helping the child mobilize all six levels in each interaction. Since the program is interdisciplinary, goals are established in several developmental domains such as symbolic play, language and communication, sensory integration, and regulation. Eventually, parents are asked to provide the child with three types of activities: 1) spontaneous, floor-time sessions throughout the day, 2) semi-structured, problem-solving interactions to learn new skills, concepts and academics, and 3) motor, sensory, and spatial play to strengthen processing. Parents are instructed that the floor-time sessions are the core of the DIR approach and that this kind of spontaneous, emotional, symbolic, creative interaction is critical to the child's progress.

The Strategies Parents Learn

While all of the strategies that parents are taught reflect attention to the notion of effort (Bloom & Tinker, 2001), each program offers some interesting alternatives.

MTW. Parents participating in MTW instruction learn three groups of strategies: 1) child-oriented strategies such as being face to face at the child's physical level, 2) interaction-promoting strategies such as cueing, then waiting for the child to take a turn, and 3) language-modeling strategies such as labeling objects the child is attending to and expanding the verbal child's utterances. In addition, parents are taught strategies to improve the child's interactions and communication such as intruding on the child's unengaged, repetitive behavior. For

example, if a child is repetitively turning a Ferris wheel in an unengaged manner, the parent can playfully stop the Ferris wheel, saying “stop!” at the same time joining in and expanding the child’s play by placing a small figure on the Ferris wheel for a ride. Parents’ engagement of their children in interaction, reciprocity, play, and the facilitation of communication and language is at the heart of these MTW strategies.

CP. In the CP program (MacDonald, 2004), social interaction is fostered through the adult’s use of five key strategies: 1) balance, 2) match, 3) respond, 4) share control, and 5) be emotionally playful. Balance assures that neither child nor parent dominates the interaction. In this way, the interaction has the frequent give and take typical of conversation. To match, the partner acts and communicates in ways that are appropriate to the child’s level. For example, if the child is pushing a car, the parent can join in the play and push the car too, engaging in a back-and-forth game rather than directing the child to push the car to a specific destination. The third strategy requires the caregivers to respond without judgment or correction and to ignore disruptive behavior. When sharing control, the partner and child both contribute to the activity equally. This is achieved when parents limit questions, directions, and commands while increasing their comments on their child’s behavior. The fifth strategy of being emotionally playful refers to the partner’s acceptance of what the child is doing, finding ways to enjoy the child, and interacting flexibly with animation, affection, and emotion to keep the child engaged and interactive. For example, if the child enjoys being tickled, the parent can engage the child in a spirited tickling game where rules of back-and-forth interactions can be learned.

DIR. DIR strategies include using high affect and playful obstruction, obligating responsiveness, opening and closing circles of communication, and using one’s self as the “first toy.” Parents are steered away from more structured adult-led interactions and are encouraged to use whatever the child is doing to promote thinking. The idea that the child creates the context of play by his actions and interests is a basic tenet of this approach. Even the objects of the child’s preoccupations can be hidden and searched for in a playful interchange. At more sophisticated levels, the parent is taught how to keep the circles going by upping the ante in the play (e.g., giving the child a pretend horn when he asks for a real one), asking questions (e.g., “why do you want to go to the park?”), exaggerating affect, or doing something unexpected, which leads to a problem that requires a solution (e.g., “uh oh, the door is locked” when the child is trying to go outside).

In summary, MTW, CP, and DIR differ along several dimensions including the ways clinicians learn to work

with parents, how parents learn to engage their child, how the goals for social-communication and language are derived, and the strategies parents learn to use with their child. Despite the differences among the three programs, the two components of the Intentionality Model (Bloom & Tinker, 2001), social-emotional engagement and cognitive effort, are apparent in the goals and strategies typical of these programs.

What the Evidence Indicates

In this section, evidence-based practice, a topic of increasing interest in clinical decision-making in speech-language pathology and related fields, is addressed to gauge the effectiveness of the programs described. Evidence-based clinical practice shifts the basis of clinical decision making from protocols centered solely on expert opinion to the integration of best current research evidence, clinical expertise, and individual client values (ASHA, 2004).

The levels or strength of evidence refers to the scientific rigor and quality of research (Robey, 2004). While the gold standard in intervention research is the randomized controlled clinical trial, Johnston (2006) points out that this level of evidence does not exist in parent education program research. This rigorous research design poses ethical and logistical problems, including the possibility of assignment to a no treatment group (Mahoney et al., 1999; Woodyatt, 2005). An additional challenge to conducting research in this area is that parents often enroll their child with ASD in multiple treatments with various and sometimes conflicting theoretical orientations (Prizant & Rubin, 1999), which would confound the dependent variables or outcomes of the research. Finally, the limited evidence for approaches which prioritize engagement is a result of the dominance of the behavioral paradigm for clinical interventions for children with ASD over the past fifty years. (National Research Council, 2001). Despite these challenges, some attempts have been made to gather evidence regarding the value of the three programs.

MTW. The evidence base for the MTW program follows a tradition of empirical validation characteristic of all Hanen programs such as *It Takes Two to Talk* (Girolametto, 1988; Tannock, Girolametto, & Siegel, 1992; Girolametto, Weitzman, & Clements-Baartman, 1998; see McCauley & Fey, 2006 for a review) and *Learning Language and Loving It* (Girolametto & Weitzman, 2002; Girolametto, Weitzman, & Greenberg, 2003; 2004). McConachie, Randle, Hammal, & LeConteur’s (2005) study of MTW is a controlled trial of 51 participating families

who were assigned to an immediate intervention group or a delayed intervention control group, which consisted of those on a waiting list for the program. The results indicated that the parents who enrolled in the program improved in their use of facilitative strategies based on ratings of videotaped observations. The children who participated improved in their vocabularies, but not in social communication. This study provided preliminary evidence that participating in MTW positively impacted parent-child interactions and an aspect of children's early language.

Girolametto, Sussman, and Weitzman (2007) conducted detailed case studies of three children whose families were enrolled in an MTW program. These investigators, like McConachie and others. (2005), reported positive outcomes for both the participating mothers and their children. The three mothers increased their responsive comments during play interactions and were rated as more responsive on a rating scale. The three children demonstrated positive outcomes in vocabulary, frequency of engagements in social interaction, and social initiation skills. This study provides preliminary support that the MTW program positively impacts children's social communication skills.

CP. MacDonald's (2004) research support for the CP program consists of a series of pre- and post-treatment designs without controls. For example, in a one-year study conducted at Ohio State University, 80% of 25 preschool children with ASD showed significant improvement in their social interactions with their parents. Unfortunately, the particular aspects of social interaction that improved were not specified. Parents were more animated, playful, and responsive with their children following participation in the program as measured by evaluator judgments of videotaped samples.

In another study, 50 families including 20 with children with ASD participated in training on the CP strategies during hourly training sessions conducted over a year. Results indicated that the parents became more responsive, matched, playful and balanced with their children and that the children demonstrated gains in social communication skills and language, although specific areas were not delineated. Results for the children with ASD were grouped with the data for the children with other developmental delays, making it difficult to determine the impact of the program on this specific population. In addition, since a control group was not employed, the effects of maturation cannot be discriminated from the treatment effects, a limitation of all studies without controls.

DIR. Greenspan & Weider (1997b) conducted a chart review of 200 children with ASD who received the DIR model of intervention for at least two years. The children

were diagnosed between 22 months and 4 years. Outcomes for the children were reported as percent of cases that realized three levels of response to the DIR treatment: 58% of the children achieved "good to outstanding" outcomes, 25% attained "medium" outcomes, and 17% demonstrated "continued difficulties." In terms of engagement, 95% of the children demonstrated reciprocal gestures and imitation to fulfill needs. A limitation of the study was that the outcomes were based on the observations of one experienced clinician so the reliability of the data could not be determined. Further, outcomes for the parents were not provided and the outcome measures for the children lacked specificity. Nonetheless, Greenspan & Weider's (1997b) chart review of a large number of cases elucidated clinical patterns among this group of children and generated hypotheses for future research.

In summary, the evidence base for the three programs is limited. Of the three interventions, MTW has the highest level of evidence with one controlled trial involving relatively large groups of children (McConachie et al., 2005) and a series of case studies, which reported detailed positive outcome measures for both parents and children (Girolametto, et al. 2007). The research base for CP involves large groups of children but lacks rigorous controls, and it groups children with ASD with those with other developmental delays, making it difficult to draw conclusions regarding the impact of the treatment on the target population. The one study of the DIR approach involved a large number of subjects, but it did not include detailed outcome measures. Indeed, the need for rigorous research on all the programs is apparent and may be due, in part, to the challenges of conducting developmental intervention studies. Until further investigations are reported, speech-language pathologists can rely on the existing research as well as the two other parameters of evidence-based practice suggested by ASHA (2004), namely, practitioner expertise and family preferences when making clinical intervention decisions.

A Paradigm Shift for Contemporary Clinical Training

Currently, students in speech-language pathology receive minimal training in relationship-based work with parents. Graduate students and practicing clinicians alike acknowledge the importance of this area for personnel preparation programs (Justice & Ezell, 2001; Bernstein, 2005). In terms of coursework, students are generally exposed to views about the impact of disability on the family and the value of supporting parents in their efforts to

facilitate language, but are rarely taught the specifics of how to address these feelings or how to orchestrate the support. Further, in the area of clinical practice, students typically do not learn how to collaborate with parents or how to coach them to interact with their child. In training programs, students' interactions with parents are often focused on reporting how their child's therapy is progressing or providing follow-up home practice assignments or suggestions at the end of a session.

In addition to limited coursework and clinical experience with family issues and coaching, graduate speech-language pathology students typically receive minimal training in ASD. In most graduate programs, this complex area is addressed in courses which cover several groups of language-impaired children including the hearing impaired, mentally retarded, and learning disabled in addition to children with ASD. Due to the breadth of the other topics to be covered, the discussion of ASD is generally limited to one or two class sessions. This is inadequate given the depth of the knowledge required to understand this complex, developmental disability. Presently, professionals across clinical and educational fields who wish to obtain the type of training recommended here must expand their knowledge and skills after graduate school by engaging in continuing professional education.

The review of MTW, CP, and DIR suggests basic interdisciplinary competencies which reflect contemporary thinking from the science of child development (e.g., National Scientific Council on the Developing Child, 2004; National Research Council & Institute of Medicine, 2000) and more specifically, the science of language acquisition (Bates, 1976; Bloom, 1970; Bloom & Lahey, 1978; Bloom & Tinker, 2001; Brown, 1973; Bruner, 1977). A list of Interdisciplinary Clinical Competencies is offered as a starting point for the development of training modules for graduate programs and continuing education seminars. The competencies, which are neither hierarchical nor sequential, are presented in Table 1 under the organizational headings, which framed this review and are referred to as Curriculum Content Areas.

Summary and Conclusions

In summary, MTW, CP, and DIR are parent-based, family-centered programs which address the development of social-communication and language in children with ASD. The Bloom and Tinker (2001) Intentionality Model of typical language acquisition captures two important features common to the programs, social-emotional engagement and cognitive effort. While differ-

ences among the programs have been discussed, the indispensable role of parents in facilitating their child's development, the assessment of individual differences in sensory capacities and learning styles, the generation of goals that are grounded in developmental sequences, and the use of strategies to facilitate the child's engagement and communication in everyday routines and play are common ground. Professional preparation and continuing education programs can provide better training to graduate students and practicing clinicians working with children with ASD by embracing a shift to greater integration of contemporary models of child development and language acquisition.

Perhaps the clinician involved with children on the autistic spectrum can use the notions of engagement and effort as central organizing principles for her own process of learning and evolving. For both the child and the family, engagement with the therapist must be the first goal of any therapeutic process that hopes to enhance the learning of language and the pleasures of communication for the child and his caregivers. Although somewhat overlapping, engaging with children and their parents goes beyond the notion of teaching them. It is this engaged quality and therapeutic talent that we must expect from those who support a child's development and a parent's potential to enhance this development. The challenges to the child, the parent, and the clinician are imposing and require a great deal of knowledge and a broad range of skills including sensitivity to the dynamics of human interactions.

As the clinician recognizes the enormous effort that it takes the child to regulate, engage, and learn as well as the constant effort that is demanded of the parent in the process of nurturing the child, so too, the clinician must understand and reflect on the effort that is required of her in the moments of struggle that are a natural part of the process. As the parent supports the child and the clinician supports them both, so too, the clinician's efforts can best be enhanced by finding a safe haven in a mentor or supervisor. Within this relationship, the clinician has the invaluable opportunity to learn and grow, and with this, move closer to providing the most informed intervention program for the child and his family.

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Table 1.

Interdisciplinary Clinical Competencies for Professionals Working with Children with ASD and their Families

Curriculum Content Areas	Interdisciplinary Clinical Competencies
Theoretical Paradigms	<ul style="list-style-type: none"> • Be well versed in the trajectory of early development in social-emotional, affective, cognitive, language, and regulatory domains. • Be well versed in the integration of developmental domains and the potential derailment of all domains when one or more is challenged.
Child's Developmental Profile	<ul style="list-style-type: none"> • Be well versed in clinically relevant developmental assessment paradigms. • Be well versed in the individual sensory and regulatory challenges that can disrupt the development of communication and language.
Role of the Family	<ul style="list-style-type: none"> • Recognize and address the need to prioritize, observe, and analyze parent-child interaction as the anchor of the intervention program. • Recognize and address the parental issues, which emerge when raising a child whose language and communication is severely compromised. • Recognize and address the impact and the complexity of relationship-based work with families.
How the Clinician Learns	<ul style="list-style-type: none"> • Recognize and address mental health constructs, which embrace the nature of the child's issues as well as the family's. • Recognize and address the notion of reflective practice as an invaluable part of one's learning. • Recognize and address the need to identify master clinicians to serve as mentors.
How the Parents Learn	<ul style="list-style-type: none"> • Appreciate the ongoing process of parent learning and embrace individual variation in styles and rates. • Appreciate and embrace the need for frequent therapeutic contact between the parent and clinician.
The Goals Parents Facilitate	<ul style="list-style-type: none"> • Recognize and address the importance of relationship-based intervention. • Recognize and address the importance of children's expression of intentionality before language. • Recognize and address the importance of affective engagement, symbolic thinking, and individual differences across developmental stages.
The Strategies Parents Learn	<ul style="list-style-type: none"> • Appreciate and facilitate the parents' role in incorporating their child's goals throughout the contexts of daily life to insure that the therapeutic process extends beyond the therapy room. • Appreciate and facilitate the parents' understanding of effort and resources as they balance their child's learning opportunities. • Appreciate and facilitate the parent's individual strengths in using specific strategies to enhance development.
What the Evidence Indicates	<ul style="list-style-type: none"> • Be well versed in the need for evidence-based clinical decision-making. • Be well versed in the use of single subject designs to collect and evaluate the effectiveness of one's work with individual children.

References

- American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders (DSM-IV-TR)*. Washington, DC: Author.
- American Speech-Language-Hearing Association (2004). Evidence-based practice in communication disorders: An introduction [Technical Report] Available from www.asha.org/policy.
- American Speech-Language-Hearing Association (2006). Knowledge and skills needed by speech-language pathologists for diagnosis, assessment, and treatment for autism spectrum disorders across the lifespan. From www.asha.org/members.
- Bates, E. (1976). *Language and context: The acquisition of pragmatics*. New York: Academic Press.
- Bernstein, S. (2005). *The effectiveness of a training program targeting speech-language pathologists' attitudes toward family-centered practices in early intervention*. Unpublished doctoral dissertation, Nova Southeastern University, Ft. Lauderdale, FL.
- Bloom, L. (1970). *Language development: Form and function in emerging grammars*. Cambridge, MA: The MIT Press.
- Bloom, L., & Lahey, M. (1978). *Language development and language disorders*. New York: Macmillan.
- Bloom, L., & Tinker, E. (2001). The intentionality model and language acquisition. *Monographs of the Society for Research in Child Development*, 66 (4) Serial no. 267.
- Bohannon, J., & Bonvillian, J. (1997). Theoretical approaches to language acquisition. In J. Berko Gleason (Ed.), *The devel-*

- opment of language (4th ed., pp. 259–316). Boston: Allyn & Bacon.
- Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.
- Brown, R. (1973). *A first language: The early stages*. Cambridge, MA: Harvard University Press.
- Bruner, J. (1977). Early social interaction and language acquisition. In H.R. Schaffer (Ed.), *Studies in mother-infant interaction* (pp. 271–289). London: Academic Press.
- Fey, M. E. (1986). *Language intervention with young children*. Boston: College Hill.
- Girolametto, L. (1988). Improving the social conversation skills of developmentally delayed children: An intervention study. *Journal of Speech and Hearing Disorders*, 53, 156–167.
- Girolametto, L., Sussman, F., & Weitzman, E. (2007). Using case study methods to investigate the effects of interactive intervention for children with autism spectrum disorders. *Journal of Communication Disorders*, 40(6), 470–492.
- Girolametto, L., & Weitzman, E. (2002). Responsiveness of childcare providers in interaction with toddlers and preschoolers. *Language, Speech and Hearing Services in Schools*, 33, 268–281.
- Girolametto, L., Weitzman, E., & Clements-Baartman, J. (1998). Vocabulary intervention for children with Down syndrome: Parent training using focused stimulation. *Infant Toddler Intervention: A Transdisciplinary Journal*, 8, 109–126.
- Girolametto, L., Weitzman, E., & Greenberg, J. (2003). Training day care staff to facilitate children's language. *American Journal of Speech-Language Pathology*, 12, 299–311.
- Girolametto, L., Weitzman, E., & Greenberg, J. (2004). The effects of verbal support strategies on small group peer interactions. *Language, Speech and Hearing Services in Schools*, 35, 254–268.
- Greenspan, S. I., & Weider, S. (1997a). *The child with special needs: Encouraging intellectual and emotional growth*. Reading, MA: Perseus Books.
- Greenspan, S. I., & Weider, S. (1997b). Developmental patterns and outcomes in infants and children with disorders in relating and communicating: A chart review of 200 cases of children with autistic spectrum disorder. *Journal of Developmental and Learning Disorders*, 1, 87–141.
- ICDL-DMIC. (2005). *Diagnostic manual for infancy and early childhood*. Bethesda, MD: ICDL Press.
- Johnston, J. (2006). *Thinking about child language: Research to practice*. Eau Claire, WI: Thinking Publications.
- Justice, L. M., & Ezell, H. K. (2001). A needs assessment: Perceptions and practices of student speech-language clinicians regarding parental involvement. *Contemporary Issues in Communication Sciences and Disorders*, 28, 64–73.
- Kaiser, A. P., Hancock, T. P., & Nietfeld, J. P. (2000). The effects of parent implemented enhanced milieu teaching on the social communication of children who have autism. *Early Education and Development*, 11, 423–446.
- Koegel, R. L., Koegel, L. K., & McNeerney, E. K. (2001). Pivotal areas in intervention for autism. *Journal of Clinical Child Psychology*, 30, 19–32.
- Lovaas, I. O. (1977). *The autistic child: Language development through behavior modification*. New York: Irvington Press.
- MacDonald, J. D. (1992). *ECO II video training series: Five responsive teaching strategies with language delayed children*. Columbus, OH: Communicating Partners.
- MacDonald, J. D. (2004). *Communicating partners*. London: Jessica Kingsley Publishers.
- MacDonald, J. D., & Carroll, J. Y. (1992). A social partnership model for assessing early communication development: An intervention model for pre-conversational children. *Language, Speech, and Hearing Services in Schools*, 23, 113–124.
- MacDonald, J. D., & Mitchell, B. (2002). *Communicate with your child*. Ashland, OH: Bookmasters, Inc.
- MacDonald, J. D. & Wilkening, P. (1993). *ECO II video training series: A parent based language training model with language delayed children*. Columbus, OH: Communicating Partners.
- Mahoney, G., Kaiser, A., Girolametto, L., MacDonald, J., Robinson, C., Safford, P., & Spiker, D. (1999). Parent education in early intervention: A call for renewed focus. *Topics in Early Childhood Education*, 19, 131–140.
- Mahoney, G., & Perales, F. (2003). Using relationship-focused intervention to enhance the social emotional functioning of young children with autism spectrum disorders. *Topics in Early Childhood Special Education*, 23, 77–89.
- Mahoney, G., & Perales, F. (2005). Relationship-focused early intervention with children with pervasive developmental disorders and other disabilities: a comparative study. *Journal of Developmental and Behavioral Pediatrics*, 26, 77–85.
- Manolson, A. (1992). *It takes two to talk: A practical guide for parents of children with language delays*. Toronto: The Hanen Center.
- McCarthy, B. (1987). *The 4MAT System: Teaching to learning styles with right/left mode techniques*. Barrington, IL: EXCEL.
- McCauley, R. J., & Fey, M. E. (2006). *Treatment of language disorders in children*. Baltimore, MD: Brookes.
- McConachie, H., Randle, V., Hammal, D., & LeCouteur, A. (2005). A controlled trial of a training course for parents of children with suspected autism spectrum disorder. *Journal of Pediatrics*, 147, 335–340.
- National Research Council. (2001). *Educating children with autism* (Committee on Educational Interventions for Children with Autism, Commission on Behavioral and Social Sciences and Education). C. Lord & J. P. McGee (Eds.). Washington DC: National Academy Press.
- National Research Council & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early child development*. (Committee on Integrating the Science of Early Childhood Development). J. P. Shonkoff & D. A. Phillips (Eds.). Washington, DC: National Academy Press.
- National Scientific Council on the Developing Child. (2004). *Young children develop in an environment of relationships*, Working Paper No. 1. Cambridge, MA: Center on the Developing Child at Harvard University.
- New York State Department of Health. (1999). *Clinical practice guidelines: Report of the recommendation for autism/pervasive developmental disorders: Assessment and intervention for young children* (Publication 4215). Albany, NY: Author.
- Pepper, J., & Weitzman, E. (2004). *It takes two to talk: A practical guide for parents of children with language delays* (3rd ed.). Toronto: The Hanen Center.
- Prizant, B. M., & Rubin, E. (1999). Contemporary issues in interventions for autism spectrum disorders: A commentary. *Journal of the Association for Persons with Severe Handicaps*, 24, 199–208.

- Prizant, B. M., & Wetherby, A. M. (1998). Understanding the continuum of discrete traditional behavioral to social-pragmatic developmental approaches in communication enhancement for young children with autism/PDD. *Seminars in Speech and Language, 19*, 329–352.
- Robey, R. (2004). Levels of evidence. *The ASHA Leader*, April 13, p. 5.
- Seligman, M. (1990). *Learned optimism*. New York: Pocket Books.
- Stern, D. (1977). *The first relationship*. Cambridge, MA: Harvard University Press.
- Sussman, F. (1999). *More than words: Helping parents promote communication and social skills in children with autism spectrum disorders*. Toronto: The Hanen Center.
- Sussman, F. (2002). Helping parents become communication facilitators. More than words: Helping parents promote communication and social skills in children with autism spectrum disorder. Retrieved June 19, 2006, from HYPERLINK <http://www.hanen.org/Hanen2002/pages/LearningResourceCenter>.
- Sussman, F. & Honeyman, S. (2004). *Making Hanen happen: More than words—The Hanen program for parents of children with autism spectrum disorders. Leader's guide for Hanen certified speech-language pathologists*. Toronto: The Hanen Center.
- Tannock, R., Girolametto, L., & Siegel, L. (1992). Language intervention with children who have developmental delays: Effects of an interactive approach. *American Journal of Mental Retardation, 24*, 145–160.
- Volkmar, F. R., Paul, R., Klin, A., & Cohen, D. (Eds.). (2005). *Handbook on autism and pervasive developmental disorders. Vol. 2: Assessment, interventions, and policy* (3rd ed.). New York: John Wiley & Sons, Inc.
- Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes*. Cambridge: Harvard University Press.
- Weitzman, E., & Greenberg, J. (2002). *Learning language and loving it* (2nd ed.). Toronto: The Hanen Center.
- Woodyatt, G. (2005). Building responsive relationships with late-talking children. *International Journal of Disability, Development, and Education, 52*, 361–365.