

## Chapter 12

### Play and Autism: Facilitating Symbolic Understanding

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Autism is a pervasive developmental disorder characterized by impairments in three discrete domains: communication, social abilities, and imagination (resulting in repetitive interests and behavior) (American Psychiatric Association, 2000). The incidence of autism has dramatically increased in recent years, with estimates between 1:500 and 1:1000 births in the United States (Volkmar, 2005). According to the Center for Disease Control, recent estimates are as high as 1:166 births. Autism spectrum disorder (ASD) is now considered a national epidemic. The spectrum has been expanded to include Autism, Asperger's syndrome, Pervasive Developmental Disorder – Not Otherwise Specified (PDD-NOS) and the rarer Rett's Syndrome and Child Disintegrative Disorder.

There are varying degrees of impairment among subtypes across the spectrum, but the more "classic" symptoms of ASD occur in autism, Asperger's syndrome and PDD-NOS, rather than Rett's Syndrome and Child Disintegrative Disorder, which appear to have a different etiology. There is a fairly specific profile generally seen in these former three subtypes, which will be referred to here collectively as ASD. There is a reduced sensitivity to language and a decreased response to the child's own name, so much so that many children are suspected of having hearing impairments since they often fail to orient to words, even if spoken in close proximity. Expressive language deficits are also quite severe, with 1/3 of individuals with ASD remaining functionally non-verbal. Those with verbal language often have bizarre linguistic

output, with frequent pronoun reversal, limited social reciprocity, and scripted or echolalic speech. Children with ASD tend to engage in ritualistic or obsessive behaviors (e.g., lining up cars, having to put books away in a specific order, or insisting on wearing a particular hat at all times) possibly because such behaviors are routine and familiar and therefore bring comfort. An overwhelming environment or a change in an established routine could result in temper tantrums, anger attacks, and will often encounter severe resistance.

Lower-functioning individuals with autism often have co-morbid mental retardation that manifests itself not only in impairment in the three major diagnostic domains, but also in diminished cognitive capacities. These individuals are also more likely to have non-functional speech or limited spontaneous speech. It is important to note that children with ASD vary individually in terms of severity within each of the domains, and therefore while all children with this diagnosis share the core features of the diagnostic criteria, symptoms and degree of severity differ from individual to individual.

As of yet, there is no cure for ASD. There is some evidence to suggest that genetics play a role in the proliferation of the disorder (Hallmayer, Rogers, Kalaydjieva, Petersen, & Nicholas, et al., in press; Ingram, Stodgell, Hyman, Figlewicz, & Weitkamp, et al., 2000; Folstein, & Santangelo, 2000). Parents with one child with ASD have a 5% chance of having a second affected child, compared to a baseline incidence rate of .05%. In addition, the greater incidence of ASD in boys to girls (4:1) and more variance in alternative forms of a gene (alleles) indicate that chromosomes play a role (Ingram, et al. 2000). A common biological or environmental causal mechanism has not been identified, and with the rise in incidence of the disorder, due in part to increased awareness by physicians and alert parents and sensitivity of diagnostic measures, it is paramount to address the treatment of this increasing population with special

needs. The primary form of treatment is educational therapy, combined with other specific therapies as needed (e.g. physical, occupational, speech and language). The most frequently implemented educational treatment with consistent proven results is behavioral therapy (McEachin, Smith & Lovaas, 1993), in which the principles of operant conditioning are applied to teach new skills across a broad domain. There are a growing number of alternative treatments, such as restrictive diets, prism glasses, sensory integration, and chelation (an invasive treatment to rid the body of metals such as mercury). However, the efficacy of these treatments has not been established. One increasingly recognized and legitimate component of therapeutic interventions involves play, since play skills are staggeringly different in children with ASD than typically developing children.

### *The Importance of Play*

The act of play extends far beyond the recreational factor, enabling children to learn many skills such as decision making, turn-taking, and significantly, language skills and social interaction, monitoring, and reciprocity. Both Piaget (1962) and Vygotsky (1966, 1978) acknowledged the significance of symbolic play for normal development. According to Vygotsky, play is not parallel to development, but rather a central driving force to its unfurling. Recent research emphasizes that rather than being possibly superfluous, a view endorsed by many parents particularly in a Baby Einstein-laden society, play is rather a disguised opportunity to learn (for reviews of the importance of play in learning, see Hirsh-Pasek & Golinkoff, 2003 and Zigler, Singer & Bishop-Josef, 2004). It provides children with a creative outlet, where they have the power to create a fantasy world or make decisions impacting what and whom they play with. It increases problem solving abilities, encourages spontaneity, and promotes intellectual growth (Hirsh-Pasek & Golinkoff, 2003). It also becomes a foundation for acquiring and

practicing joint attention skills, which consist of a shared, coordinated visual interaction between two individuals and an object or event (Tomasello, 1995). Encouraging play breaks in a school environment allows children to maximize their attention during lesson hours (Pellegrini & Smith, 1992; Pellegrini & Holmes in this volume).

Pretend play bridges the gap between real events in the changing world and imagination within one's head. Marilyn Segal notes (p. 42) that pretending "represents a critical step in passing from the sensory-motor intelligence of infancy to the symbolic thinking of adulthood" (Zigler, Singer, & Bishop-Josef, 2004). It also provides children with the opportunity to learn vocabulary and complex language (Ervin-Tripp, 1991), story comprehension (Pellegrini, 1985), and an understanding of literal and non-literal meaning (Garvey, 1977; Howes et al., 1992), that in turn underlies the capacity to develop theory of mind skills (Baron-Cohen, Leslie & Frith, 1985).

According to Piaget, there are discrete stages of a child's play across development. Initially, young children exhibit sensorimotor play. In this kind of play, infants and toddlers experiment with the interaction of their bodily movements with people and objects. They may explore toys by mouthing them or throwing them to the floor, learning about the principles of gravity. During this time, children learn cause and effect contingencies. This type of play is important, but falls short of symbolic. Importantly, it is a building block for more sophisticated skills.

Symbolic play requires imagination, as children learn to substitute one object for another, such as using a banana as a telephone or setting up a pretend tea party. More advanced stages include mastery, when a child is in fully control of his or her actions, and can flexibly switch their actions from reality to make-believe. Finally, children can explore games which require

turn-taking and rule-following. Symbolic play remains a critical foundation for normal social growth.

### *Link Between Symbolic Play and Symbolic Language*

There is a critical link between the development of symbolic play and the use and understanding of symbolic language. Children's ability to use language in a functional or flexible manner coincides with the emergence of predictable symbolic play routines (Westby, 1980). Supporting this is Deacon's view that what sets humans apart from the rest of the species is our ability to conceptualize symbolically (Deacon, 1997). Without such ability, one might be restricted to learning via associative based strategies, like those seen in autism (Preissler & Carey, 2004, Preissler, under review, Preissler & Carey, 2005). In fact, many children with ASD appear to have an associative learning style, reflected in scripting, contextual based responding, and difficulties with generalization.

Longitudinal research indicates that early joint attention, receptive language, and symbolic play are predictors of long-term outcome in autism (Sigman, et al., 1999). Westby (1980, 1991) asserts that she has not seen an evaluation in which a child's meaningful use of language has been above his cognitive play level. It is also imperative that a child has the necessary cognitive prerequisites for the linguistic structures he is learning; otherwise he will not utilize them in actual social situations.

Although many recent interventions focus on teaching symbolic skills, the interventions are inconsistently administered between children and by different therapists working with the

same child. Therefore, teaching language use and promoting symbolic play skills should co-occur in a standard fashion. Westby (1980) points out that interventions for ASD which incorporate only operant conditioning based behavioral therapy, *without* a component of symbolic development, fall short of providing children with the symbolic cognitive skills to foster language development. This argument can be traced back to Piaget (1962), as he suggested a common underlying structure behind cognitive and other areas of development. More recent theories specifically suggest a direct link between symbolic play and symbolic understanding (Doswell et al., 1994, Lewis et al., 1992). What are the skills necessary to support the development of symbolic understanding?

### *Precursors to Symbolic Understanding*

In order to attain symbolic understanding, one must first master basic communicative behaviors beyond mere instrumental responding, and appropriately begin to track the intentions of others. For an individual to succeed at these actions, one must show proficiency in using the joint attention skills, as they are the “precursors” to symbolic representation. Joint attention encompasses a variety of behaviors, including gaze following (following the direction of a person’s eye movements as a cue to reference), social referencing (looking at another individual to share an experience), joint engagement (looking at a stimulus, then another person to include them in the social experience), and imitation (copying the motor moves or vocalizations of another). During the time these skills develop, typical children also begin to point proto-imperatively (for the purpose of requesting) and proto-declaratively (for the purpose of commenting), and they additionally show objects to adults. As speech develops, this behavior extends into verbal commenting on stimuli in the environment “Look Mommy, a car!” or “It’s

red!” for the mere sake of sharing the experience. These joint behaviors are essential to learn language effectively and to learn about participation in the social world. They enable one to initially share attention, encode social and linguistic input from the environment, then as skills develop, to connect interpersonally and become an effective communicator and engaging participant in the social world.

Joint attention skills are compromised in individuals with ASD, and remain one of the core symptoms of the disorder. There is evidence for impairments in both production and comprehension of these behaviors (Charman, 2000). Abundant research reveals that children with ASD are notoriously poor at following another person’s eye gaze (Baron-Cohen, 1995). Children with ASD have difficulty both recognizing complex facial expressions such as fear and surprise, and find it problematical to infer what someone wants based upon where he or she is looking. Even adults with ASD in Baron-Cohen’s gaze task struggle with monitoring intent from the eye region. One reason they are not following acts of others is that they are missing the subtle cues eye expression affords (Baron-Cohen, 1995; Klin, et al., 2002a, 2002b). Klin and colleagues showed that whereas typical adolescents focus on the eye region of the face to infer the content of a situation, adolescents with autism instead focus on irrelevant details, such as a light switch, or on the mouth region. This eye tracking research is concordant with behavioral measures. Aspects of a scene which may appear irrelevant to a typical person may maintain relevance for a child with ASD. For instance, children with ASD will sort pictures of faces on the basis of the presence or absence of a hat, whereas typically developing children will sort them by emotional expression (Hobson, 1986). Thus, there exists a fundamental deficit in seeking the relevant social stimuli in the environment, and this deficit constrains the way

children with ASD learn about the world. It also impacts how children with ASD expressively communicate.

Children with ASD usually begin to get their needs met by using an adult as a tool to achieve a desired item, rather than interacting with an adult as a socially responsive being. In many cases, children with ASD can use gestures for the purpose of requesting or within the context of a scripted social routine (e.g., the 'itsy bitsy spider' song). However they do not use pointing to share their interest or comment on the environment. (Mundy et al., 1993; Wetherby & Prutting, 1984).

Imitation, another joint attention skill, is either absent or quite delayed among very young children with ASD. The relation between imitation and theory of mind has been studied by several researchers (Meltzoff, 1990; Meltzoff & Gopnik, 1993; Rogers & Pennington, 1991). The ability to imitate is essential, as it allows children to make a connection between their own internal states and stimuli out in the real world (Tomasello, 1999). Early imitation involves vocalizations, body movements, and facial expression, and allows one to communicate and get needs met without the requirement of functional speech. As more complex imitation skills develop, children use these behaviors to socially engage with others and feel a sense of connectedness. Typically developing children begin advancing on this trajectory of imitation at a very young age. If you stick your tongue out at a newborn, you will be delighted to find that the baby will mimic the action (Meltzoff & Moore, 1977; 1983,). The existence of other early imitative gestures suggests that this is an innate ability. Children with ASD, however, show deficits in any gestural imitation even at later ages, including tongue protrusion, supporting the idea that the disability is present at birth, rather than being acquired as a toddler. After their first birthday, young normally developing children will imitate a bizarre act, such as turning off a

light with their head, and will complete actions based on the intent of an adult, such as trying to pull apart dumbbells or hang something on a peg, even when the adult's action failed (Meltzoff, 1988 1995). Even 12-month-old typically developing infants can identify the goal of an agent and interpret its actions causally in relation to it (Gergely, Nadasdy, Csibra, & Biro (1995). Imitation studies in ASD tend to focus upon facial motor imitation, actions of objects, and manual motor movements such as clapping hands, etc. The results are consistent and reveal deficits across all these domains in ASD (see Charman et al., 1997).

When one has difficulty recognizing the connection between one's own movements and the movements of others, the result is impairment in social functioning, as seen in both chimpanzees and some children with autism (Tomasello, 1999). According to Tomasello, children with ASD fail to establish a 'like me' connection, which is required for understanding that oneself and others possess intentions. If this connection is not established, one can not expect an individual to ever be able to track the intentions of another.

Other joint attention skills include social referencing and joint engagement. Young typically developing children are likely to look up at a parent when they are happily engaged in playing with a toy. The purpose of this behavior is to share the child's experience and it is of a purely social quality (see Vygotsky, 1978). Joint engagement occurs when the child is able to look at an adult, for instance, then look at an object, then check back with the adult to make sure she is attending to what the child wants her to attend to. This occurs a bit later in development, but both behaviors are strikingly impaired in children with ASD. Often you will see a child fixating on an object for a long period of time, and adults can come and go without protest, as they appear to be irrelevant to the child's world.

In total, these joint attention skills can be considered building blocks for a formation of a “theory of mind”, which includes utilizing pragmatic information, being aware of one’s own mental state, and being able to monitor others’ intentions. Children with autism have a general deficit in attaining a theory of mind (Frith, 2003, Baron-Cohen, 1995, 1997, 2000; Baron-Cohen, Leslie & Frith, 1985; Lord & Paul, 1997; Klin, Schultz, & Cohen, 2000; Tager-Flusberg, 1997; Gopnik, Capps, & Meltzoff, 2000). Essentially any task related to theory of mind, such as those examining the appearance-reality distinction, gaze following, intention tracking, false-belief, etc., reveals robust deficits in children with ASD (for a review see Baron-Cohen, 2001).

Very young typically developing children are sensitive to cues about referential intent such as speaker’s gaze. These cues are successfully utilized to constrain the meanings of newly heard words. In a task by Baldwin (1993), children as young as 18 months of age were able to look at and follow a speaker’s gaze for the referent of a novel word, even when the children were staring at an unnamed, unfamiliar object in their own hands during the labeling phase. Young typically developing children naturally seek out social cues for language acquisition and semantic identification. The same paradigm was replicated and extended to children with ASD, who failed to use intention as a clue for word-referent identity (Baron-Cohen, Baldwin, & Crowson, 1997; Preissler & Carey, 2005). Children with ASD were more likely to map the novel word to the item they were looking at during the labeling phase. Acquiring and using language symbolically is impaired in those with ASD; in order to foster a natural understanding of symbols, the role of play must be examined, as the development of symbolic language arises with the development of symbolic play.

When Leo Kanner (1943) first described the symptoms of the 'autistic syndrome' he included deficits in pretend play as a core feature of the disorder. As mentioned above, play enhances social, communicative, and linguistic competence, all of which are impaired in children with ASD (Bruner, 1986). The play of children with ASD is less innovative, less symbolic, and more developmentally immature than normally developing peers (Sigman & Ungerer, 1984). As suggested by Rogers and Pennington (1991), delay in these abilities may lead to executive function deficits such as coordination and planning. Consistent with a spectrum disorder, there is a wide range of variety in the play skills of individual children with ASD. Compared to mental-age matched populations, children with ASD have been found to have much less restricted symbolic play in free play scenarios, but the degree of impairment of functional play is debatable (see Jarrold, Boucher, & Smith, 1993 for a review; Charman, et al 1998). Children with ASD often are passive participants in play, offering limited initiation and approaching peers in an awkward, one-sided manner (Lord, 1984; Wolfberg, 1999).

If you were to observe a child with ASD in an unstructured play situation, you would see something quite different than what you would witness if you watched a normally developing peer. The child would prefer solitude rather than social interaction, at times being on his own in the corner of the room potentially engaged in self-stimulatory behavior such as hand posturing or rocking back and forth. The child might line up toys such as blocks or cars in a particular order, rather than playing with them in an appropriate or functional manner. In this population, play is often routine and scripted instead of spontaneous and creative, and imitation skills are diminished (Frith, 2003). There are few attempts to show others the objects in their focus of attention, and to share enjoyment with another person. Eye contact is limited, and therefore

social referencing during play is dismally low or absent in many cases. These behaviors are far different from the seemingly effortless way typical children express themselves through play.

Children can play in a variety of ways and enact a myriad of scenarios. Some solitary play occurs with every young typical child; however this becomes the preferred mode of play for many children with ASD, which clearly does not promote the benefits of social interaction. In parallel play, children play side by side without interaction. This is a popular form of play for children with ASD who already have the capacity for functional play. A child with ASD might be interested in other children, but lacking in the ability for spontaneous social engagement, and therefore will play next to others without communication or reciprocity. With a quick glance, you might see what appears to be a normal play scenario with a child with ASD and typical peers. Upon closer inspection, you might find that the typically developing children are interacting with each other and the child with ASD is playing close by, but by himself. Notably absent is the sharing of this experience with peers. Often a young child with ASD will even use other children as tools, climbing over them like a ladder to obtain a particular toy.

Researchers have termed the repetitive, unimaginative qualities of play as “echoplaylia” – (Schuler & Wolfberg, 2000), as the same qualities apply to echolalia, a property of expressive language often seen in ASD. The quality of speech in verbal children with ASD is often bizarre, ranging from execution of memorized ‘scripted’ material, pronoun reversals, and frequent repetitions of pieces of language heard before. This repetition of recently heard speech typifies echolalia, which has the quality of unimaginative, non-symbolic repetition of speech sounds. It is in this way echolalia and echoplaylia seem like parallel deficits. The play behaviors rely less on imagination and more on repeated actions, as the language relies on previously heard speech and lacks creativity.

Spontaneous pretend play in children with ASD is certainly very impoverished or noticeably absent (Ungerer & Sigman, 1981, Charman & Baron-Cohen, 1994). These play deficits in ASD have been explained by two distinct theories. One of the prevailing theories of autism is that it is a deficit in theory of mind (Frith, 2003, Baron-Cohen). According to this theory, the deficit arises from a child's failure to reflect on one's own imagination (Leslie, 1987). An executive function explanation instead posits a deficit from flexibly switching attention from reality to a pretend state (Rogers & Pennington, 1991). Regardless of the origin, the deficits in spontaneous pretend play reflect a general deficit in symbolic understanding.

### *Symbolic understanding in autism*

The ability to manipulate symbols such as pictures and words, helps humans to reason abstractly and process the variety of stimuli in the world efficiently, as it permits categorization and flexible use of symbols to represent items in the world, without the necessity of their physical presence. The emergence of such representational abilities is considered an adaptation (Greenspan & Lieberman, 1994). It provides children the freedom to move past mere somatic behavioral responses to environmental occurrences and form mental representations, a much more efficient method of communicating.

The process by which children with ASD acquire potentially symbolic stimuli such as words and pictures differs greatly from how typical children acquire language. Symbolic understanding of words arises in parallel with symbolic play, so fostering one will impact development of the other (McCune, 1995). Therefore the impoverished play abilities of those with ASD should affect communication strategies and the acquisition of words and pictures. Although many children with ASD can acquire a fairly substantial vocabulary, they have

difficulty using this language in a flexible, spontaneous manner (as a symbolic system would predict) and fail to use it to appropriately engage socially with peers.

Consider what life might be like if you lacked the ability to understand the symbolic connection between arbitrary stimuli such as words or pictures and real objects in the world. In terms of language, if you were to encounter a new word (such as ‘monkey’) in the presence of a detailed scene of a zoo, you would have no way of knowing what or who the word referred to, since you are not equipped with sensitivity to social cues such as gaze and gesture. You would require many pairings of that word and its referent to learn an association between the two. According to such an account, consistent with associative learning, one would have to initially encounter the word or picture in the same context as the real-world entity (Plunkett, 1997). This may make word learning especially difficult as words are generally spoken without their referents in plain sight, and one would expect some associatively based errors. This is precisely what happens in some cases of autism (see Kanner, 1943; Frith and Happé, 1994, p. 98), but such errors do not occur during the course of normal development (Bloom, 2000).

Empirical evidence supports this associative account (Preissler & Carey, 2004; Preissler, under review). Children with ASD and mental age matched typically developing toddlers were taught to pair a new word (e.g. ‘ziff’) with a picture of a novel stimulus (a garbage disposal crusher). After several pairings, children were then given the picture they just learned a label for and the previously unseen object the picture depicted. When asked to show the experimenter “a ziff”, children with autism selected the picture alone 55%. This is in contrast to typically developing children who *never* indicated the picture alone and always indicated the real object. The interpretation is that normally developing children understand that the purpose of a picture is as a symbolic representation of a real world object; When a picture is named, what is really being

identified is a real referent in the world. Children with ASD are instead constructing associative pairings between pictures, words and objects in the world, and fail to connect such stimuli in a symbolic manner. Verbalizations made by some typical toddlers support the notion that symbolic understanding is developing by 2 years of age. For instance, children often labeled both the picture and object as a “whisk”, which is consistent with the way adults use language. One child indicated that the real object was a “whisk” whereas the flat 2-dimensional stimulus was a “picture of whisk”. Results of the population with ASD are consistent with an associative learning system, rather than a referential, symbolic system of representation. Such statistical models have been frequently endorsed in animal learning since the days of Thorndike (1898) and Pavlov (1957), and can be examined in a closely parallel situation of lexigram learning by chimps (see Savage-Rumbaugh, 1982 and Savage-Rumbaugh, McDonald, Sevcik, Hopkins & Rubert (1986) for a referential view, and Seidenberg & Pettito (1987) for an associative explanation).

According to Vygotsky, abstract thought is initially unattainable for young children because meaning and objects are fused together as one (Vygotsky, 1978). It is therefore difficult for young children to think about a stimulus (such as a ball) when not in the presence of the real, tangible object. As children engage in pretend play, the ability to use objects or pictures to stand for other things in the world arises, and meaning is thereby separated from the physical objects themselves. This is the very conceptualization that children with ASD fail to accomplish naturally. When one uses something to stand for something else (e.g. the word “ball”, picture of a “ball” or some other entity which stands for a ball) the meaning of the substitute stimulus serves to separate the meaning between the symbolic representation and the real referent. As a

result, children soon become able to think about meanings independently of the objects they represent. Hence, symbolic play maintains a crucial role in the development of abstract thought.

How to foster the development of symbolic play remains a challenge for interventionists and therapists. One of the key problems is the inconsistency in administration of play interventions, between schools and home programs, across individual children, and even between different therapists for the same child. There is a paucity of literature about play intervention with children with ASD. Most of the literature describes case reports, which are difficult to generalize to a population already so variable (Joesfi & Ryan, 2004; Schuler, 2003). There have been several reported interventions for preschoolers to evoke symbolic play in particular (Thorp et al., 1995; Goldstein et al., 1988; Rogers & Lewis, 1989), and these represent a starting point for intervention change, but research needs to be more widespread, with a significant sample size.

When considering an educational intervention, it is essential for parents to remain aware of their child's program to ensure consistency in behavior and progress in the home. However, parents should not have to bear the burden of being a 24-hour therapist. It is often difficult for parents of children with ASD to take a step back from administering therapy and to just take time to be a parent and enjoy interactions with their child. Play is one way parents can interact with their children in a natural and supportive way, while fostering cognitive and social development. To facilitate play, parents can assist by organizing a specific area to address and practice these activities. Since children with ASD respond better to a structured environment, parents can set up an activity board to select the items for play; although the setting may be initially structured, the interactions themselves should promote creativity and flexible use of materials. Siblings also play an important role and can be effective social partners and models of correct social behavior.

### *Intervention*

The National Research Council recommends targeting cognitive development and play skills as part of any effective intervention for ASD (Lord & McGee, 2001, p.6). A child's capacity for symbolic behavior is significant to consider in order to determine appropriate intervention (Sparrow, 1997). One can use imagination provoking strategies for normal toddlers, but such indirect or independent techniques must be adapted to capture the interest of those with ASD.

It is also useful to classify the depth of social impairment to devise an appropriate level of intervention. Three sub-categories of social impairment are described further by Lorna Wing (Wing, 1992). The first type pertains to children who do not appear at all interested in others. They will accept necessary items such as food and drink, yet use instrumental responding (e.g., using a person as a tool rather than a social being) to get their needs met. A second type of social impairment is "socially passive", in which children rarely initiate social interactions, but can respond when others do the initiating. They also tend to imitate peer movements and behaviors without actually understanding what the behaviors mean. In the last type of social impairment, children with ASD may initiate interactions but the interactions are often scripted and appear strange to others. It is important to design different therapeutic interventions for social and play skills to meet the varied needs of these children.

Many social skills training sessions fail to foster reciprocity and initiations by the child (Shuler & Wolfberg, 2000). In the current state of the art, play therapy for children with ASD tends to target individual skills which are the presumed developmental building blocks, and fails to emphasize flexible modes of communication. For example, a child may be taught to look up

at a person's eye region when he hears a greeting, but is unable to use this skill naturally in other, less structured settings or with unfamiliar individuals. This flexibility and ability to generalize skills from one setting to another work together to promote social interaction, as people are the most unpredictable stimuli one could encounter and the world is full of a myriad of environments. Wolfberg and Schuler (1993) suggest that children with ASD are more capable of interacting in play sessions than has typically been observed, and that it is the limited scope of intervention programs which fails to enhance these spontaneous play skills.

One of the most heavily followed interventions targeting a multitude of skills including language, behavioral issues, social interaction and social skills, is behavioral therapy. This type of program is commonly referred to as Applied Behavioral Analysis (ABA) (Lovaas, 1987, McEachin, Smith & Lovaas, 1993). This therapy is based on the principles of operant conditioning, and provides a heavily structured, adult driven environment. According to its proponents, it addresses a multitude of problems which manifest in children with ASD, including issues of motivation, attention to task demands, and using concrete rather than abstract examples to teach skills. Reinforcement such as a child's favorite snack, access to a preferred toy, or verbal praise is administered for correct behavior throughout each session. Ideally, motivation issues are addressed on an individualized basis to maximize a child's learning potential. ABA therapy also breaks steps into small components, to account for failing attention and increased levels of frustration. The therapy is usually administered in a very structured and adult controlled environment, which tends to minimize distraction and reduce a child's over-stimulation due to an unpredictable environment.

In terms of play therapy, ABA therapists tend to focus on discrete, individual skills and the therapists themselves provide the opportunities for children to play rather than allowing

children the freedom to make decisions. Particular skills are taught in the context of very specific routines, such as turn-taking in a certain card game with the same players or introducing a scripted line for children to rely upon to initiate conversation. The skills taught may include all the precursors to symbolic understanding. However, the execution of such skills occurs in a tight environment, and as generalization is a problem for those with ASD (Tager-Flusberg, 1981), sometimes these skills which are wonderfully executed in a single environment do not translate to unfamiliar settings or unfamiliar individuals (Hadwin, Baron-Cohen, Howlin & Hill, 1997). The goal of ABA is to provide a direct example of correct behavior and require the same performance from the child, since learning by observation alone is poor among this population. Play skills are taught so that children with ASD can be busy independently, rather than slipping into a self-created world of isolation. Again, it is important to note that ABA tends to focus on structured behavior patterns rather than spontaneous behaviors, which requires a closely regulated environment.

Another popular intervention is Pivotal Response Training (PRT) (Koegel, et al. 1999). In this treatment protocol, the precursors to symbolic understanding and other capacities, such as learning contingencies, are referred to as “pivotal behaviors”. Acquisition of such important behaviors allows a child to learn subsequent skills more readily. The main pivotal behaviors include motivation and responsivity to multiple cues (Koegel & Koegel, 1999). The program intends to teach children the rules of engagement, how to join in with other activities and how to communicate. PRT can be taught to typically developing children in order to help children with ASD maintain effective social interactions and sustain attention to social stimuli. Koegel and colleagues argue that PRT has been successful in fostering language, play and social interaction skills in children with ASD. Research on the successful generalization of such skills and

applicability to unpredictable social situations is limited, or characterized by results of few subjects (Koegel & Frea, 1993; Pierce & Schreibman, 1997). However, targeting the essential pivotal skills, which, if lacking, interfere with the acquisition of precursor symbolic skills, does emphasize the importance of an early social intervention and play behaviors. PVT also acknowledges the importance of peer interaction for developing such abilities.

A third method of play and social skills intervention is a scaffolding approach. Shuler and Wolfberg (2000) advise that in order for interactions with peers to be more effective, the inclusion of more able peers is essential in order to provide social models and ample opportunities to learn by imitation. The interventions that focus on play are driven by individual skill accomplishment, without a more cohesive conceptual framework, which the authors feel underestimates the play capacities of children with ASD. They argue that a behavioral type approach does not acknowledge child initiatives, but rather focuses on accuracy and compliance. Essentially, a therapist is likely to overlook or dismiss a child's spontaneous action if it is not expressly dictated by the behavioral program.

Of course, many educators do incorporate typical peers into play scenarios. While this is a step in the right direction, Shuler and Wolfberg note that it is difficult to teach other professionals to implement the same supports, and there is no recourse when such scaffolding efforts fail. Essentially, there is no consistency in the interventions, and they are centered on particular cues and stimuli and driven by adult instruction, reinforcing repetitive behavior rather than encouraging spontaneous actions or expressions. Another limitation of current play skills programs incorporating behavioral techniques is the restricted environment, which does little to contradict the compulsion of children with ASD to remain isolated. This, in turn, leaves them ill prepared for inclusion in the unpredictable real social world. A final possible limitation of such

direct approaches is that they may not be compatible with the reciprocal nature of symbolic representation and communication, the very skills such interventions are intended to target.

In a scaffolding approach, the use of peer models in play scenarios is essential. Typical children and novice (children with ASD) players are guided to coordinate play, with the former being both models and facilitators for shared activities. The role of the adult varies; at times the adult sets the scene for play scenarios, in other cases, the adult takes a step back and allows the children to build interactions. It is a guided form of intervention, but allows for spontaneity on the part of the play participants. Of critical importance is the proper training of both the adult and the peer models so they can be effective partners for children with ASD.

#### *Recommendations for Intervention*

Regardless of which intervention is implemented, and there are certainly many more not discussed in this chapter, in order to enhance social and play skills children with ASD would benefit from both individual and group social skills training. Of particular importance is the role of a therapist or peer to model appropriate behavior. Peer groups should include a mix of special needs children and typically developing peers without social difficulties, so as to learn and practice appropriate social skills. As children with ASD do not have the natural inclination to pay attention to and monitor social stimuli in the world, they must therefore specifically be taught the skills which are the foundation of social interaction. These include imitation, gaze following, the interpretation of facial expression, and how to modify others' and their own social behaviors. There are a variety of venues to teach such skills, including social stories, role modeling, and videos, all coupled with extensive positive reinforcement and inter-modal supports (e.g. visual and verbal). Consistent with each child's therapeutic intervention plan, distinct target behaviors need to be identified, and addressed in a stepwise fashion. It is essential

to teach these skills in a variety of manners and settings to promote generalization of the acquired skills, and reduce dependence on particular cues and stimuli. It is also imperative to use toys appropriate for a child's mental age rather than chronological age, and to begin with scenarios that are not more advanced than a child's current capacity.

The format of both group play and social skills training should be initially quite structured, since children with ASD typically fare better in a predictable and familiar environment (Dawson & Osterling, 1997; Harris & Handleman, 1985). It is important to specifically let the child know what behavior is required, and then to heavily reinforce that behavior when observed. For a child who has learned the precursors to symbolic functioning and has emerging language, a play program emphasizing the flexible use of such skills should be implemented. The level of structure can be faded out gradually, but it is important to allow children at any stage to make decisions themselves and to be given every opportunity for spontaneous play interactions.

There are several stages in typical development that children naturally progress through in order to attain linguistic communication. The first transition is to intentional communication, which is using conventional behaviors to affect another person, as when a baby uses eye gaze to express desires. The second transition is to symbolic communication, where children use words and gestures to represent objects. The final stage is linguistic communication, incorporating syntax, multi-word constructions and semantic relevance. If children with ASD have difficulty with the initial stage, how can we expect them to naturally proceed to effective linguistic communication?

Interventionists must be careful to target a child's specific needs to develop an appropriate program. Initiation strategies in general are appropriate for preverbal children with

ASD, whereas teaching verbal initiations should obviously only be focused upon children with speech. Despite the common sense aspect of the previous statements, many interventions simply overreach a child's communicative abilities, and therefore affect a child's social progress either minimally or not at all.

Speech and language skills are typically paramount in therapeutic interventions, and the importance of peer play is frequently underrated. When supported by an adult or peers, studies show that children with ASD can engage in more complex forms of play (Greenspan & Wieder, 1997; Lord & Hopkins, 1986, Wolfberg & Schuler, 1993). These research reports suggest the essential nature of structured supports for promoting play behavior, with the full acknowledgement that intervention research studies testing these hypotheses are limited.

### *Policy Implications*

Public policies are standards by which scarce public resources are allocated to almost unlimited needs (Gallagher, 1994). This is especially valid in the case of ASD, as the incidence of the disorder is at an all time high, prompting the classification of national epidemic. Parents of children with ASD often fight an uphill battle to gain appropriate services for their children, and the money is stretched tightly within educational districts.

Currently policy items for children with ASD include: zero reject (a free education public education), nondiscriminatory evaluation, an Individualized Education Program (IEP), a least restrictive environment, due process, and parental participation. The least restrictive environment clause specifies that when appropriate, children with ASD should be included in typical classrooms. One pitfall to this clause is that many children with ASD often are not yet

equipped to make the transition to a classroom flooded with stimulation, and sometimes the precursors to effective communication have not been established.

One significant challenge to the execution of policy items is the actual implementation of successful IEP programs, since many parents are uninformed of their rights, and the IEP varies from district to district. If not specifically argued for, the programs that are implemented for many children are impoverished and the services provided meet only the minimum required standards. There is tremendous variation in the quality of the program and the flexibility of the district.

Since we know that early intervention provides the best possible outcome for those with ASD, it is essential that the early intervention programs target each child's specific needs, but also follow a standard protocol for targeting the skills we now know are critical for giving children the best possible outcome over time. The precursors to symbolic knowledge which enable children to engage socially with peers are particularly important and require a specific mandate.

One policy implication regards free early screening for all children at risk, specifically siblings of children already identified with ASD, and families with a history of social disabilities, mental retardation, or mental disorders. Retrospective research based on videotapes of affected children at their first birthday party, before they were diagnosed, show impairments that skilled psychologists and other professionals can detect. This type of research, coupled with the recent onslaught of research targeting siblings of those with autism and the efficacy of early intervention programs indicates that early detection is not only feasible, but should be imperative (Werner, Dawson, Osterline, 2000) (Klin, et al., 2000) screening instruments used to diagnose the disorder, such as ADI, ADOS, Mullen Scales of Early Learning, have been applied to

children under the age of 3, and recently under the age of 2. These early diagnoses tend to be stable over time.

Another implication is the specificity of early intervention programs. Since joint attention skills such as gaze monitoring, imitation, social referencing are imperative for the development of symbolic and abstract thought and the proper development of linguistic competence, these skills must be targeted in all early intervention programs. The power of play in assisting the development of such skills is well established (Hirsh-Pasek & Golinkoff, 2003). Incorporating a standard play and social skills intervention is essential to provide a child with ASD the best possible chance of developing language and symbolic thought.

A third policy implication should mandate appropriate peer training for social skills groups, as research indicates that peers can be invaluable for offering support, reinforcing social interactions, and helping to elicit social initiations. Often, typical peers are included with children with ASD with good intentions, but the interventionists fail to prepare the typical peers with the appropriate skills to effectively interact and elicit interaction from such children with special needs. Since the least restrictive environment clause tends to move children with ASD into typical classrooms at time prematurely, it is essential that the normally developing peers be equipped to interact with this population with special needs.

### *Conclusion*

Children with ASD have impairments in social, behavioral, and communicative domains. The ability to detect ASD autism has become more sensitive increased in recent years, and although it may be tentative, children under the age of two can now given the diagnosis of autism spectrum disorder (Lord & McGee, 2001). This early detection is critical given the wealth of

information revealing that early intervention predicts a better outcome (Dawson, & Osterling, 1997; McEachin, Smith, & Lovaas, 1993; Gallagher, 1994). Children with ASD included in early therapeutic interventions are more likely to become verbal, have fewer behavioral problems, and have an opportunity to learn many more daily adaptive and educational skills.

The most effective mode of treatment is a very specific, intense, program of intervention administered as early as possible. There are many direct behavioral treatments proven to effectively teach children skills such as compliance, increase receptive and expressive language, and target motor skills in an ordered, structured environment. However, these skills are often not generalized to novel settings and stimuli and lack a certain social quality. An effective part of any therapeutic program should incorporate play therapy. Play is an effective modality to teach children the precursors to symbolic thinking and the dynamics of social interaction. With structured supports and trained peers to enhance and facilitate communication, play can be an immense resource to build symbolic and social skills in children with ASD.

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