MERIT
Mentalization Enhanced Remediation: an Integrated Treatment
A Comprehensive Intervention for Children with Autism

by

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Abstract

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In the treatment of autism two models have evolved that have attempted to integrate aspects from skill based approaches with a more developmental model. These models remain predominantly developmental. Although these more integrated models have taken into consideration the advances that have allowed us to better understand the neuropsychological profiles of children on the spectrum, they do not attempt to intensively remediate many of the areas we know to be compromised.

In this dissertation I will propose a treatment model that considers these specific deficits while integrating valuable aspects of various existing models and thereby optimizes the outcome for children with autism. I have been implementing this approach for over 15 years and will support its effectiveness with clinical case vignettes. This approach allows the successful integration of the remediation aspects of ABA with interpersonal approaches. It is extremely effective with children with a more severe constellation of symptoms as it remediates in a thorough and global manner.

Mentalization based therapy will be used to foster the developmental approach. Mentalization based therapy offers a less structured treatment which more practically allows the integration of these two previously disparate approaches. Additionally mentalization allows parents and practitioners to better understand the inner world of the child. In this sense the heterogeneneity of each child is considered which is paramount to designing a successful intervention.

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This dissertation reflects my devotion and dedication to the children with whom I work and all those like them. I wish to dedicate this dissertation to these children and their families. I have learned so much from each and every child with autism I have encountered and they have all touched me in a profound way. There smiles inspire me. Their progress amazes me. Their families impress me with their unwavering support and unconditional love. I am grateful for the opportunity to work in this field and with these children and families in particular.

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Chapter 1: Introduction

Autism

Autism is a complex developmental disorder characterized by significant impairments in communication, socialization, and a markedly restricted repertoire of activity and interests (DSM, 1994). Autism has a neurobiological origin that is defined on the basis of behavioral and developmental features (NRC, 2001). Autism, being a developmental disorder, is present from birth or very early in development. Children are frequently diagnosed when those around them observe perseverative and repetitive play paired with a failure to develop expressive language. These children tend to have poor eye contact and may not respond to their names. Many children with autism engage in stereotypes, or repetitive behaviors such as hand flapping, twirling or odd vocalizations. Children with autism often present with rigidity and strong adherence to routines. There are deficits in communicative gestures, such as pointing to create shared attention.

Autism is recognized as a “spectrum disorder”(Wing and Attwood, 1987). There is significant variability in symptom severity, age of onset and comorbid disorders (eg. mental retardation, epilepsy). The expression of autism varies markedly across children and even within an individual child over time. There is no single behavior that is always present in autism and there is no particular behavior which would exclude a child from being diagnosed as being on the spectrum in spite of the fact that there are strong and consistent commonalities (NCR, 2001). The heterogenous nature of autism creates particular challenges in designing effective treatment models. Treatment approaches must take into account individual differences and each child’s unique capacity to learn.

Although a precise understanding of the neurobiological mechanisms remains to be determined, it is clear that autism is reflective of neurological pathology in the developing brain. Current research has yet to identify direct links between pathophysiology and the symptoms of autism. Consequently these research endeavors have yet to impact the treatment of the disorder successfully through biomedical interventions (Rumsey, 2000). Instead interventions have been created to respond to the presentation of symptoms and the research regarding specific areas of deficit including theories about the etiology of the disorder.

For example practitioners working in the field of autism were not always aware of the neurological basis of this disorder. Tracing the history of autism and examining previously held beliefs about its etiology clarifies the origin of treatment approaches that have since been rejected. The history of treating autism also allows us to understand the relationship between etiology and intervention. This next segment will examine how historically, etiology and diagnostics have influenced the treatment of autism.

History of Autism

Children who are described as being “mute” and “repetitive” have been identified as far back as the 1800s. In the early 1900s psychologists and psychiatrists were beginning to publish reports of children who shared a similar profile including impairments in cognition, socialization and communication. These children, initially labeled “psychotic,” were frequently diagnosed with childhood schizophrenia. Children who met this profile were often institutionalized and treatment programs were non-existent.

In 1943, Leo Kanner reported on a small sample of children he had observed who engaged in stereotypies and echolalia, were socially remote and obsessive, and identified these children as “autistic” (Kanner, 1943). Kanner’s observations of these children were framed developmentally and based in part on Gesell's work on the capacity of the human infant to be social even within the first few weeks of life. Kanner established a cluster of common symptoms that continue to be the hallmarks in diagnosing individuals on the spectrum. He was also among the first theorists to imply that parents of autistic children seemed to be cold and removed. His initial comments influenced practitioners and theorists. These initial observations eventually evolved to create a dynamic theory regarding the development of autism.

Research and clinical work expanded our understanding and conceptualization of autism (Chawarski, Klin & Volkmar, 2008). As understanding of autism evolved, so did the treatments that were developed. The first two editions of the Diagnostic and Statistical Manual of Mental Disorders (DSM) did not include "autism" as a diagnosis. Only the diagnosis of "childhood schizophrenia" was available to describe children with autistic symptoms. The work of Kolvin (1971) and Rutter (1972) differentiated autism from childhood schizophrenia (Volkmar & Klin, 2008). Rutter played a pivotal role in expanding the understanding of autism in the late 1970s by weaving the latest scientific findings with Kanner's original report (Chawarski, Klin & Volkmar, 2008). There are four critical features of the diagnosis that were emphasized by Rutter (as cited in Chawarski, Klin &Volkmar):

1. early onset
2. distinctively impaired social development
3. distinctively impaired communication
4. unusual behaviors of the type suggested in Kanner's concept of "insistence on sameness" (resistance to change, idiosyncratic responses to the environment,

motor mannerisms and stereotypies, etc.)

Once autism was classified as a DSM childhood disorder, diagnoses became much more prevalent and clinicians and researchers became more aware of its existence. They began looking for causes and views became divided regarding the etiology of autism. Some believed that autism was environmentally caused while others emphasized the neurological basis of the disorder. The predominant treatment models reflected these disparate perspectives of the etiology of the disorder.

By the late 1970s researchers began publishing findings suggestive of neurological underpinnings for autism. Initially these findings identified an increased incidence of epilepsy in autism (Deykin & MacMahon, 1979) Subsequent studies demonstrated that the greatest risk of epilepsy was amongst autistics with mental retardation or a motor deficit and therefore a more abnormal brain (Olsson, Steffenburg & Gillberg, 1988; Tuchman, Rapin & Shinnar, 1991 b). These studies were the first to suggest neurological substrates of autism and exponential growth began in research focused on a biological basis for autism (Rapin, 2005).

Although findings from the past few decades have considerably improved our understanding of the pathophysiology and neuropsychology, the cause of autism continues to be unclear. Many functional brain systems appear to be impacted by autism (Muller, 2007). The associations of teratogens found in neuroanatomical studies strongly suggest that autism’s mechanism includes alteration of brain development soon after conception (Arndt, Stodgell & Rodier, 2005). This specific alteration appears to start a cascade of pathological events in the brain that are further influenced by environmental factors (Casanova, 2007). Findings such as these highlight the relationship between brain and behavior. These implications have offered better insight into how effective treatments can act as agents of neural plasticity and supported treatment models that incorporated a more remediation based intervention.

Intervention Options

Treatment for children with autism has evolved and changed, always reflecting the current understanding of the symptoms and etiology of the disorder. During the phase when autistic children were likened to schizophrenics the best treatment option seemed to be containment. When environmental factors were thought of as causal, intensive psychodynamic therapies were implemented and mothers were treated simultaneously. As empirical research began to implicate the brain, treatment took on a more systematic and skill based approach. Yet another movement began in the 70s which was the creation of new developmental models.

For many decades there has been a great divide between those who practice skill based intervention and those that use a more developmental approach. Initially there were only two dominant treatment models; ABA and Floortime (National Research Council, 2001). Both groups purport their model to be the more reasonable one. Those who practice skill based interventions argue that first basic skills must be taught and then one can work on play and socialization in a more systemized way. Developmental practitioners insist that the primary deficit is the impaired capacity to socialize and if this is improved then the child can much more readily acquire skills and learn.

Currently there are multiple options that are considered to be “developmental” and a few different “skill based” approaches. Exploring the various treatment models available to parents is a full time and exhausting process. Parents are expected to read lengthy manuals, undergo training and in many cases function as therapists to their child. Parents are forced to make difficult decisions regarding their autistic child’s treatment. Each model seems to sacrifice an important aspect of treatment. Some parents elected to incorporate both models into their child’s treatment. This proves to be exceedingly difficult as there was and continues to be a strong resistance amongst practitioners to acknowledge the benefits to be gained from multiple models . Integration seemed essential but carrying it out was next to impossible.

Recently two models have evolved that have attempted to integrate aspects from skill based approaches with a more developmental model. These models remain predominantly developmental. Although these more integrated models have taken into consideration the advances that have allowed us to better understand the neuropsychological profiles of children on the spectrum, they do not attempt to intensively remediate many of the areas we know to be compromised.

I will propose a treatment model that considers these specific deficits while integrating valuable aspects of various existing models and thereby optimizes the outcome for children with autism. I have been implementing this approach for over 15 years and will support its effectiveness with clinical case vignettes. This approach allows the successful integration of the remediation aspects of ABA with interpersonal approaches. It is extremely effective with children with a more severe constellation of symptoms as it remediates in a thorough and global manner.

Mentalization based therapy will be used to foster the developmental approach. Mentalization based therapy offers a less structured treatment which more practically allows the integration of these two previously disparate approaches. Additionally mentalization allows parents and practitioners to better understand the inner world of the child. In this sense the heterogeneneity of each child is considered which is paramount to designing a successful intervention. As described earlier the presentation of each child with autism is quite variable. Although certain symptoms and manifestations are common each child must be evaluated and treated based on their particular constellation. The following is a review of the most recent findings regarding the symptoms of autism. This review will explore the social, communicative and neuropsychological profiles of this population as these findings helped to mold the principles behind the development of my treatment approach.

Chapter 2: The Core Deficits of Autism

Diagnosis

In the past few decades, the diagnostic clarity of autism has improved and awareness has grown significantly. The incidence of autism has increased substantially in recent years and current epidemiological studies suggest that as many as one in 91 children are currently diagnosed with an autism spectrum disorder (AMA, 2009). Boys are four to five times as likely to be diagnosed with a spectrum disorder than girls (CDC, 2010). Children are frequently diagnosed when those around them observe perseverative and repetitive play paired with a failure to develop expressive language. The most common age that diagnosis is made is between 4.5 and 5.5 years old but many parents report concerns as early as 12 months of age (CDC, 2010).

DSM IV Criteria

The DSM IV groups autistic spectrum disorders under the heading of “Pervasive Developmental Disorders.” These disorders include; Autistic Disorder, Pervasive Developmental Disorder-NOS, Asperger’s Disorder, Rett’s Disorder and Childhood Disintegrative Disorder.

Autistic Disorder is diagnosed by the following criteria:

A. A total of six (or more) items from (1), (2) and (3), with at least two from (1), and one each from (2) and (3):
    (1.) Qualitative impairment in social interaction, as manifested by at least two of the following:

- (a) Marked impairment in the use of multiple nonverbal behaviors, such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction
- (b) Failure to develop peer relationships appropriate to developmental level
- (c) Lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by a lack of showing, bringing, or pointing out objects or interests)
- (d) Lack of social or emotional reciprocity

(2.) Qualitative impairments in communication, as manifested by at least one of the following:

- (a) Delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gestures or mime)
- (b) In individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others
- (c) Stereotyped and repetitive use of language or idiosyncratic language
- (d) Lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level

(3.) Restricted, repetitive and stereotyped patterns of behavior, interests and activities as manifested y at least one of the following:

    (a) Encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal in either intensity or focus
    (b) Apparently inflexible adherence to specific, nonfunctional routines or rituals
    (c) Stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting or complex whole body movements
    (d) Persistent preoccupation with parts of objects

B. Delays or abnormal functioning in at least one of the following areas, with onset prior to age three years: (1) social interaction, (2) language as used in social communication, or (3) symbolic or imaginative play.

C. The disturbance is not better accounted for by Rett's disorder or childhood disintegrative disorder.

(DSM, 1994)

Diagnosis of ASD is made on the basis of a behavioral profile since there is at this time no biological marker that can be used to identify children on the spectrum (Bishop et al, 2008). In recent years there have been attempts to improve diagnostic measures such that early diagnosis is possible. The knowledge that early intervention is paramount to positive outcome has led researchers and clinicians to attempt diagnosis before a child's first birthday. The Childhood Autism Rating Scales (CARS) is used to diagnose children between two and five years old (Schopler, Reicher, & Renner, 1988). Most of the current measures for diagnosing autism are filled out using a parent or teacher report. Catherine Lord and her colleagues designed semi structured interviews known as the Autism

Diagnostic Interview – Revised (ADI-R). This diagnostic instrument provides comprehensive information regarding the child's communication, social and play behaviors (Lord, Rutter & LeCouteur, 1994). Additionally, there are alternative diagnostic measures that allow clinicians to diagnose children based on semi-structured observations of play, communication and socialization. The Autism Diagnostic Observation Schedule (ADOS) is one such measure (Lord et al., 2000). Instruments such as the ADOS provide clinicians with additional information that allows for more accurate diagnosis and assessment of specific areas of delay. Interventions that address the common areas of delay, or the core deficits of autism, are more likely to yield positive results. The following findings reflect the current understanding of the core deficits of autism.

Communication

Approximately 50% of autistic children have difficulty acquiring spoken language to the extent that they require a picture exchange system (PECS) or an augmentative communication device. Many of these children are also diagnosed with Apraxia, which is an inability to properly plan movement (praxis). This motor planning deficit compromises their ability to speak and articulate.

One of the first signs of delayed communication skills is the failure to babble by one year of age. Typically language explodes in the 12-18 month developmental period. Children acquire an increase vocabulary and the capacity to inquire to gain additional information. There are specific categories of speech in which development can be measured. The first of these is semantics which involves the acquisition of words and the understanding of their meaning. Children with autism do not typically acquire language merely through exposure. Increasing semantics is typically one of the first goals of an early intervention program.

Syntax includes the ability to create phrases and sentences. In typical development we see sentence length increase as the child's grammar becomes more complex (Miller & Chapman, 1981). Sometimes this is measured using the expression "mean length of utterance" (MLU). In children with autism their language delay is reflected by their comparatively low MLU.   Additionally, children with autism typically fail to use their knowledge of words in a normal way to facilitate performance on retrieval or organizational tasks (Tager-Flushberg, 1991). Studies of word use in children with autism have also found an under-representation of certain clusters of words such as mental state terms, particularly cognitive states (e.g., know, think, remember and pretend) (Tager-Flushberg, 1992; Storoschuk, Lord & Jaedicke, 1995; Tager-Flushberg, 1994). The use of peculiar words has been found to be one of the best discriminators of PDD and other language disabilities (Mayes et al., 1993).

Phonology involves articulating sounds and words. This is the component of speech that is particularly difficult for the child with apraxia. Children with apraxia need to be taught each individual sound in isolation and the VC (vowel-consonant) and CV (consonant-vowel) blends. These skills can then be translated to simple CVC words and eventually more complex words and phrases. Each of these progressions is complicated by the fact that the apraxia serves as a blockade and most children with moderate to severe apraxia cannot make typical language generalizations but rather have to be taught to articulate at each stage. Autistic children in general have a higher rate of phonological difficulties. Shiberg et al. found that one third of children with autism continued to have difficulties articulating /r/, /s/, and /l/ whereas only 1% of those in the general population have such difficulties.

Theory of Mind

There are cognitive mechanisms that impact the autistic child's ability to imagine different mental states in others. The abilities of a child to engage in "joint attention" and "theory of mind" rely on components of cognition, communication and social understanding (National Research Council, 2001).

The "theory of mind" hypothesis proposes that many of the symptoms of autism are caused by the cascade effect of not being able to perceive or understand the thoughts, feelings, or intentions of others (National Research Council, 2001). Autistic children lack a theory of mind and consequently suffer from "mind blindedness" (Leslie & Frith, 1987). Even higher functioning autistic children have displayed impairments on theory of mind tasks (Leslie, 1987). Klin argues that not all autistic children are impaired with regard to theory of mind (Klin et al, 1992). Others recognize there are various degrees of theory of mind impairment (Happe, 1994). Some conceptualize this particular area of deficit as operating on a spectrum with autistic children being affected to varying degrees as discussed earlier.

The extent to which a child is capable of envisioning another's mind will be considered with this integrated treatment model, and helping the child to increase their capacities to do so will be a primary goal. Through use of mentalizing techniques in my work with autistic children, I have been able to comment on what appear to be their thoughts and feelings. It is a crucial aspect of my treatment model that autistic children experience being with a mentalizing other and it is through this experience that they will develop the capacity to envision another as having thoughts and feelings of their own.

Understanding the mechanism by which theory of mind deficits occur allows for the development of more specific interventions. In autism suboptimal or superoptimal levels of arousal can cause attentional dysfunctions, which have disruptive effects on the establishment of social reciprocity, affective communication and stable joint attention behavior patterns (Buitelaar, 1995). Helping a child achieve optimal arousal is a necessary step in improving regulation and attention. Strategies to regulate arousal and thereby maximize attention will be discussed as a critical part of my treatment approach.

Some additional processes that were found to be deficient were: reciprocity and turn taking, social processes (including imitation), recognition of affective expressions, attribution of mental states to others and social orienting (Sigman, 1989). The lack of social orienting to other's faces was also found by Corona and colleagues (1998). By breaking some of these areas of deficit down into small, more easily mastered components, I have been able to teach children to attend to faces in order to acquire social information. This is a critical step towards processing social experiences and will be elaborated further in subsequent chapters. These social deficits impact the child's ability to attend to the salient aspect of an interaction and to create schemas about experiences of "being with" another.

Executive Functioning

Executive function (EF) is a cognitive construct that has been found to be impaired in individuals with autism as well as their family members. Executive functions include planning, inhibition of prepotent responses (more powerful responses that are habitual in some cases), flexibility, organized search, self-monitoring, and use of working memory (Baddeley, 1986; Goldman-Rakie, 1987; Pennington, 1994).

Executive functioning deficits have been found in both adults and children with autism using the Wisconsin Card Sorting Task (WCST) (Rumsey, 1985; Prior & Hoffman, 1990, Szatmari, Tuff, Finlayson & Bartolucci, 1990). The most common finding was significant perseveration, which consisted of continuing to sort by previously correct rules despite feedback that this strategy was no longer correct. The control groups varied from individuals with dyslexia to those with attention-deficit / hyperactivity-disorder and conduct disorder. This last group of controls are considered amongst those with executive functioning deficits so the significant differences found when comparing individuals with autism to this particular control group are even more interesting. Again the individuals with autism made more perseveration errors than the matched controls.

Another EF measure, the Tower of Hanoi, looks at an individual's ability to plan. This test correctly predicted an autism diagnosis in 80% of subjects (Ozonoff & McEvoy, 1994). Other neuropsychological variables such as theory of mind, memory, emotion perception and spatial abilities predicted autism no better than chance (Ozonoff & McEvoy, 1994).

Finally in a review of the EF literature Pennington and Ozonoff (1996) found that 13 of the 14 studies that had examined EF in autism had found significant deficits.

Making meaning of findings such as those reported for the WCST or the Tower of Hanoi are complicated. There are many different EF functions that contribute to success on such tasks. Component process analysis is a system used by cognitive neuropsychologists to better understand the roles of various EF functions in the completion of a particular task. This system allows researchers to better understand the role of EF in cognitive and social development in both normal and abnormal populations (Ozonoff, South & Provencal, 2010). In understanding the role EF plays in the developmental trajectory of autism more precise interventions can be designed.

Flexibility and inhibition are two EFs that are conceptually linked but postulated to be separate skills. Whereas some researchers ascertain that autistic individuals have more difficulty inhibiting responses (Russell, Jarrold & Henry, 1996; Russell et al., 1999; Turner, 1997) others think that it is more difficult for people with autism to apply flexible thinking approaches (Ozonoff & Jensen, 1999, Wainwright-Sharp & Bryson, 1993, Casey et al, 1993). Recent investigations have delineated inhibitory difficulties from deficits in flexible thinking and found that flexible thinking was the impairment that compromised performance on measures such as the WCST (Ozonoff & Jensen, 1999, Wainwright-Sharp & Bryson, 1993, Casey et al, 1993). Overall these studies have found impairments in both shifting cognitive sets and shifting attentional focus to be compromised in individuals with autism. Some of these specific areas of impairment such as the capacity to set-shift have been linked to social competence and social understanding (Berger et al., 2003). This implies that remediating executive functioning deficits could support increased capacities for socialization for individuals with ASD.

Attention

Empirical research and behavioral observations have emphasized the impairments of attention that occur in autistic individuals (Volkmar, Paul, Klin & Cohen, 2005). Information reduction, response selection and preparation for eventual action all depend on the capacity of an individual to attend. Typically developing children have an increasing capacity to override the impulse to attend to information that is most striking or novel or desired in order to attend to the information (be it internal or external) that is most salient, based on previous experience and prior goals (Volkmar, Paul, Klin & Cohen, 2005). Individuals with autism have a tendency to focus on unusual features of objects (Volkmar, Paul, Klin & Cohen, 2005). Their attention is drawn to non-salient features of the environment and they have difficulty shifting their attention from one activity to the next (Volkmar, Paul, Klin & Cohen, 2005).

In a study conducted by Cieselski, Courchesne and Elmasian (1990) adults with autism were significantly less able, than matched controls, to ignore competing stimuli during a vision and audition task. Findings such as these should influence treatment by contributing to the therapists understanding of the autistic child's experience and the unique ways that they experience the world.

Temple Grandin, a high-functioning autistic adult, described such experiences in her autobiography, "*Emergence (2005)*." In this personal account, Grandin recounts how difficult it was for her to process language when she was young. She describes that initially she had a hard time processing language from one speaker and if more than one person was speaking simultaneously, it sounded like gibberish. Grandin attributed this to her inability to integrate incoming sensory input (Grandin, 2005).

Deborah Fein (1998) and her colleagues have also explored this difficulty that autistic individuals have in attending to input. They suggest that in animals autistic-like behavior occurs in response to a lack of input, in autistic children the social sequelae may occur as a result of not attending to input, thereby resulting in a similar state of deprivation.

These empirical findings support the premise that autistic children may learn best when material is presented in a more simple form. If children with autism were able to learn through typical interactions then incidental learning would be more apparent. Heirarchical, methodical presentation of novel material would be a method that would allow more successful learning when these processing deficits are taken into consideration.

Unlike auditory attention, sustained attention for simple repetitive visual information is generally intact and comparable to developmentally matched peers (Buchsbaum et al, 1992; Casey, Gordon, Mannheim & Rumsey, 1993; Garretson, Fein & Waterhouse, 1990; Goldstein, Johnson & Minshew, 2001). These findings explain the success of behavioral interventions that implement visual schedules and visual teaching via discrete trial methodology, a hallmark of Applied Behavioral Analysis.

It is also critical to explore the role attentional deficits play in the autistic child's capacity to experience joint attention with another. Individuals with autism are often unable to identify the most salient information in stimulus rich environments (Klin, Jones, Schultz, & Volkmar, 2003). As a result autistic individuals have a compromised capacity to attend to meaningful or shared aspects of a learning situation (Klin, 2000). Joint attention requires that both partners be capable of attending to the socially relevant stimuli.

This concept has led to a cognitive-social theory for autism--that the social deficits seen in autistic children may be secondary to the cognitive impairments and that perhaps these impairments are severely limiting the autistic child’s ability to learn socially. If this cognitive-social theory were to be accurate it would detract considerably from developmental models that suggest that learning cannot occur until the child has been guided to achieve more social-emotional goals. The cognitive-social theory lends support to skill based approaches which address cognitive abilities, which would then allow an increased capacity for social engagement.

An opposing theory also exists that states that social impairment, specifically social cognition is at the root of the disorder (Baron-Cohen, Leslie & Frith, 1985; Happe & Frith, 1995). This social-cognitive theory would support the notion that the capacity to mentalize, or to make sense of the thoughts and feelings of another is the critical deficit of autism. The treatment model that has emerged from psychoanalytic literature would be applicable if social deficits are responsible for some of the other areas of delay seen in autism. The following models have been classified as either skill-based or developmental. Exploring the techniques and philosophies of these various models will allow for a better understanding of autism intervention.

Chapter 3: Current Treatment Models

There are currently multiple models for treating autism. They vary in how well they are supported by empirical research and the philosophy on which they are based (table 1). Generally the existing models can be divided into three categories; those that are interpersonal/developmental, those that are skill based, and those that are integrative and contain elements from skill based and developmental approaches. The current models are classified as developmental, skill based and integrated models. The classification of the available treatment models, the most significant tenets, and the intensity level are outlined in table 2.

The developmental models include RDI (Relationship Development Intervention), DIR/Floortime (developmental, individual-difference, relationship-based approach) and the Option Method (National Research Council, 2001). As indicated by the table below, these models have limited empirical support with regard to outcome. They are based predominantly on developmental and relational perspectives and have incorporated some of the intervention philosophy of early psychodynamic approaches. These models are less widely used in school curriculums and early intervention home programs. They are supported primarily through anecdotal evidence and supportive case histories. There is little to no empirical support for the developmental models success in treating children with autism (Roberts, 2004).

The skill based models tend to incorporate some aspect of behavioral interventions. These models include ABA (Applied Behavior Analysis), PRT (Pivotal Response Training), PECS (Picture Exchange Communication System), TEACCH (Treatment and Education of Autistic and Related Communication Handicapped

Children) and Fast Forward (National Research Council, 2001). They are designed to teach new skills and alternative, adaptive behaviors. There is universal agreement that certain skill based approaches such as ABA and PRT have produced positive outcomes for children with autism and are well supported by research (Roberts, 2004). ABA (including more naturalistic versions) and TEACCH are amongst the most common forms of intervention currently used to teach children with autism (Roberts, 2004).

The integrated models are those that incorporate aspects of both the interpersonal models and the skill based models. SCERTS (Social Communication Emotional Regulation Transactional Support) and ESDM (Early Start Denver Model) are both examples of integrated models (Prizant et al, 2010). Both SCERTS and ESDM are predominantly developmental in their philosophical approach to treating autism but they have both included aspects of behavioral treatment. SCERTS has not been independently evaluated as it is a model of service provision rather than a program (Roberts, 2004). ESDM is supported by a recent randomized controlled trial that confirmed its efficacy when compared to treatment as usual (Dawson et al, 2010). In order for ESDM to become a “scientifically based practice” there will have to be additional supportive peer reviewed studies of outcome replications conducted by researchers not affiliated with ESDM.

The following table (table 1) lists the most common interventions currently being used to treat autism. The interventions have been grouped by their general approach and rated in terms of efficacy. These models will be described in further detail in this chapter and their strengths and weaknesses will be identified and discussed.

Table 1.
Empirical Support for Current Models for Treating Autism

	Scientifically based practice	**Promising Practice**	**Limited Supporting Information for Practice**	**Not Recommended**
Interpersonal Relationship Interventions and Treatments				
Traditional Psychodynamic Treatment				X
DIR/ Floortime			X	
RDI			X	
Option Method Son-Rise			X	
Skill Based Models				
ABA	X			
PRT	X			
PECS		X		
TEACCH		X		
Fast Forward			X	
Integrated Models				
SCERTS			X	
ESDM		X		

Interpersonal Relationship Interventions

Psychodynamic Treatment of Autism

Early psychoanalytic views of autism emphasized the relationship between the mother and her autistic child. There are two well known psychoanalytic treatment models based on widely differing perspectives: the early psychoanalytic perspective on treating autism, which continues to be dominant amongst European practitioners, and the more developmental treatment model developed by Greenspan, known as DIR/floortime (Greenspan, 2006). Classic and current psychodynamic approaches differ with regard to their beliefs regarding the etiology of autism. Consequently, the respective treatment models directly reflect these differing views. Both philosophies however prioritize the inner life of the child and attempt to target the core deficits of autism through the relationships the child has with therapists or caregivers. Psychodynamic approaches are particularly successful at targeting the capacity of the child with autism to relate to others.

Some of the first psychoanalytic theorists to speculate about the etiology of autism claimed that maternal insensitivities played a significant role in the development of autistic states of withdrawal (Bettelheim, 1967, Mahler, 1958). According to Mahler, the development of autism was a result of the failed relationship with the mother who played a pivotal role in creating “the vicious circle of the pathogenic mother-child relationship” (Mahler, 1956). Bruno Bettelheim attributed the development of autism to the failed relationship with a typically cold, professional mother. Bettelheim believed that the precipitating factor in infantile autism is the parent’s wish that his child should not exist (Bettelheim, 1967).   Bettelheim and other psychodynamic theorists recommended that autistic children be removed from their parents’ care. The children were then treated in residential treatment centers, where it was presumed they would fare better, and the mothers were referred for intensive psychoanalysis.

Bettelheim served as the director of one such program: the Sonia Shankman Orthogenic School at the University of Chicago, a home for emotionally disturbed children. The Orthogenic School was a residential setting, in which the children were educated and received intensive psychoanalytic therapy. Many children spent a significant portion of their childhood at the school as per the recommendation of Bettelheim, who claimed that this treatment modality was the only hope autistic children had of “recovering.”

In his seminal book, The Empty Fortress, Bettelheim details his treatment of autistic children and the theory that supports his approach. He also describes the progress of the autistic children that resided at the Orthogenic School. Bettelheim recognized the importance that therapy be “intensive and of appropriate duration,” but was confident that treatment could not be as successful if the autistic child were to remain living in the parents’ home or if the mother and child were not treated together (Bettelheim, 1967, p.460). He described the withdrawal as protective and saw it as a defense against fears of annihilation or maternal reengulfment thus illustrating the need for children to be treated outside of the home (Bettelheim, 1967).

In The Empty Fortress, Bettelheim identified the deleterious effects that inadequate responding could have on the development of the self (Bettelheim, 1967). He described the mother who insists on feeding her baby on a schedule and suggests that when the baby makes early attempts to communicate (i.e. crying to indicate that he is hungry) the unresponsive mother sends the baby the message that his communication was unheard (Bettelheim, 1967). Bettelheim stated that both the physical as well as the emotional needs of the child must be tended to and that failure to do so, puts a child’s emotional development at risk (Bettelheim, 1967). Despite the criticisms that Bettelheim’s theory eventually received, he accurately recognized the importance of the emotional life of the autistic child and the need that communicative attempts, however atypical, be heard.

Bettelheim claimed that there was little difference in the constitution of the autistic child and the majority of the symptoms associated with autism were explained in dynamic terms. He described the social avoidance as a defense on the part of the child to “ward off an intrusive and frightening world” (Bettelheim. 1967, p.169). Bettelheim also suggested that this pain was a result of the rejection these children had experienced primarily though their relationship with their mother (Bettelheim, 1967). Bettelheim described the stereotypies frequently observed in children with autism as a defensive attempt to screen out a world that is too painful to tolerate and the child’s attempt at ultimate withdrawal (Bettelheim, 1967). Bettelheim states that it is critical to respect the interests of the autistic child (stereotypies) and not attempt to discourage the child from engaging in these idiosyncratic behaviors. If we attempt to eliminate the behaviors we will “validate the only conviction that he has: that we think him nothing, and that his spontaneous efforts to gain relief, and even some mastery of his tensions are disparaged by us” (Bettelheim. 1967, p.169).

To illustrate this philosophy, Bettleheim describes a 10-year-old girl who came to the clinic and was very intent on blocking out all sensory input from the world around her. She never ate any food with the others because during mealtime she was insistent that she plug up her nostrils and her ears with her fingers thereby leaving no hand free to feed herself. She refused to let anyone feed her. Bettelheim describes how some of the first therapists to have treated her would tell her that she didn’t “need” to plug up her orifices. He points out the futility of this approach because she clearly had a “need” to plug them up. Bettelheim had his staff offer to plug the girl’s ears for her. She then freed up enough fingers to lean down to the plate and feed herself while still plugging her nostrils with two fingers (Bettelheim, 1967).

This example illustrates Bettelheim’s interest in understanding the autistic child’s inner states. Bettelheim did not view the girl’s peculiar behavior as merely an idiosyncrasy related to her autism or a problematic behavior that needed to be eradicated. Instead he tried to understand the world from this child's perspective, and by allowing her to feel understood, was able to help her to share meals with the other children. Although the thoughts and feelings of the students at his school were very foreign to him, he attempted to understand their behavior thus providing them with a model for mentalizing, which will be discussed later in this chapter.

Bettelheim's perspectives were radical and his theory was eventually rejected by the psychological community. Developments occurred in the mid 1960s which contributed to the discrediting of the psychogenic hypothesis. In 1964, Bernard Rimland, a psychologist with an autistic son, published his book: Infantile Autism: The Syndrome and its Implications for a Neural Theory of Behavior. In this publication, Rimland directly attacked the "refrigerator mother" theory and proposed a counter explanation to the commonly accepted causes of autism (Rimland, 1964). He was among the first to recognize autism as a brain disorder.

The next critical factor in the demise of the psychogenic theory of autism was the publication of the work of Marion DeMyer and her colleagues. They published the results of the longitudinal observations they had made of mothers interacting with their autistic children (DeMyer et al., 1972). DeMyers work shed light on the validity of the social and intellectual deficits present in these children and found the mothers to be "no more inept than other mothers" (Rapin, 2005).

Early psychodynamic theories were very damaging in terms of the blame that was placed with families. As a result, the psychological community was so fervent in their need to reject psychodynamic theory that there was rarely any reflection on the positive aspects that were present in the psychodynamic treatment model. The way in which Bettelheim thought about the inner world of the child with autism was disregarded just as readily as his erroneous claims regarding autism's origins. These aspects of early psychodynamic theory are in fact quite beneficial in treating autistic children.

By the mid 1970s Greenspan's approach, which had evolved out of psychodynamic theory and treatment of autistic children, represented an approach to treating autistic children that included a mentalizing stance. This treatment model offered clinicians and families an alternative to the behavioral treatment approaches which had gained considerable popularity.

DIR/Floortime

Stanley Greenspan and his colleagues started observing and treating children with autism in the late 1970s. Greenspan developed a treatment model known as DIR/floortime, in which he identified critical emotional interactions as the foundation for the development of symbol foundation, language and intelligence (Greenspan, 2006). If these interactions are not mastered, he suggested these abilities do not develop (Greenspan, 2006). Greenspan recognizes that there are biological factors that hinder the autistic child's ability to engage in these interactions. Consequently, he proposes that the intervention focus on the development of these "necessary formative emotional experiences" by providing special opportunities to connect (Greenspan, 2006).

DIR stands for the developmental, individual-difference, relationship-based approach. This approach outlines the emotional and lingual development of children by identifying nine critical stages: stage one – regulation and interest in the world, stage two – engaging and relating, stage three – intentionality and two-way relating, stage four –

social problem solving, mood regulation, and formation of a sense of self, stage five – creating symbols and using words and ideas, stage six – emotional thinking, logic and a sense of reality, stage seven – multicausal and triangular thinking, stage eight – gray-area, emotionally differentiated thinking and finally stage nine – a growing sense of self and reflection on an internal standard. The stages are based on those that are achieved in typical development. They begin with helping the child to regulate and develop an interest in the world around him. In the final stage the child is expected to be capable of reflecting on an internal standard.

Greenspan offers tasks to help a child who has failed to master any one of the stages and suggests guiding the child through the stages in a hierarchical progression. DIR/floortime emphasizes the family involvement. As other approaches have identified, one of the keys to a successful treatment is to have the child engaged during most of their waking hours. Greenspan feels that mastery of the stages is necessary for normal emotional development and additionally allows cognitive development, higher level thinking and a fully developed sense of self to occur (Greenspan, 2006).

Greenspan credits the researchers of the 1940s and 1950s who began to explore the role of early emotional experiences on learning and personality development. He acknowledges the role of attachment theory and explains that DIR/floortime builds on these theories.

DIR/floortime model is based on three primary insights. The first is that language and cognition as well as emotional development and social skills evolve through emotionally meaningful exchanges. The second is that the more neurological aspects of the disorder need to be considered and it is critical that individual sensory needs should be integrated into the treatment approach. Finally Greenspan describes how historically all areas of development were considered independent of one another. He feels that it is critical to look at how these various abilities are integrated in a particular child (Greenspan, 2006).

Greenspan is very critical of behavioral approaches, particularly discrete trial teaching. He feels that behavioral approaches are often overly concerned with symptoms and fail to look at the internal world of the child. Although he does not directly criticize Applied Behavioral Analysis, he does mention the failings of approaches that attempt to teach skills without first addressing the emotional development of the child. He states that the children may learn to engage in a matching task, but they often fail to be able to generalize that skill and that there is no evidence that acquiring this skill leads to any cognitive development.

Additionally, Greenspan cites a study conducted by Smith, Groen and Wynn which found that children treated with a behavioral approach made only modest educational gains and little to no social or emotional gains (Smith, Groen and Wynn, 2000). He further discredits behavioral approaches for their failure to account for individual differences. Floortime does not incorporate adult directed tasks, and consequently critics of DIR/floortime postulate that the educational and cognitive progress of the child is compromised.

RDI (Relationship Development Intervention)

RDI theory was developed by Dr. Steven Gustein and is inspired by research on the core deficits of autism including neurology and developmental psychology (Hynes, 2010). The aim of RDI is to teach the skills necessary to communicate with others and improve their dynamic intelligence. Gustein differentiates between static and dynamic intelligence. RDI theory states that children with ASD are much more proficient at static skills. Static intelligence involves absolutes; these inquiries have right and wrong answers. They are unchanging and always produce the same outcome (Hynes, 2010). Dynamic skills include the capacity to problem solve, share experiences with others, curiosity, empathy and the ability to take another's perspective (Gustein, 2002).

Gustein suggests that the shortcoming of most popular treatments for treating ASD is that they focus erroneously on static skills, namely teaching language, social scripts and the ability to follow a schedule. Gustein argues that teaching static skills such as these does not enable children with ASD to interact with others and to create meaningful relationships. RDI proposes that teaching the skills to follow a routine do not prepare children with autism to be flexible and learning vocabulary and social scripts do not prepare children with ASD to have spontaneous conversations.

RDI claims to work on remediating the social deficits of autism rather than working around them. In typical development, children enjoy a relationship with their parent from which they learn to become active thinkers and communicators. RDI refers to this process as "guided participation."   Guided participation is the process that happens between children and their parents in which parents function as guides, providing the child with ongoing challenges and the support needed to be successful. Gustein suggests that simple activities from raking leaves to loading the dishwasher can be wonderful teaching opportunities. There are multiple opportunities to communicate, anticipate and problem solve in such activities. In the case of ASD the child is unable to participate in such exchanges with the typical amount of support. This is where RDI provides the parent or therapist with the skills necessary to scaffold this relationship.

Gustein studied guided participation relationships between typical children and their parents. He looked closely at how parents provide their typical child with opportunities for dynamic growth. He looked at how this critical relationship breaks down in the case of children with ASD. He designed an intervention meant to reestablish this relationship and to teach the child to function in a dynamic unpredictable world. The elements of this relationship were woven to create a curriculum for ASD children based on these objectives.

The curriculum is broken down into three levels from Novice to Apprentice to Challenger. The curriculum is designed to systematically improve the ASD child's capacity to collaborate and communicate with others. As a precedent to peer relationships, children are first encouraged to coordinate their thoughts, actions and ideas with an adult partner. This type of social reciprocity is called co-regulation and is typically an area of deficit for children on the spectrum. Practicing these skills allows a child on the spectrum to begin even at the earliest level to have experiences of co-regulation. It is critical, according to Gustein, that the ASD child not be told what to do in these planned interactions. Once the child with ASD learns to co-regulate many new opportunities for communication and interacting evolve.

Gustein identifies two types of communication, instrumental and experience sharing. Instrumental communication describes more functional language such as requesting, asking a question or providing direction. Experience sharing communication does not necessarily have right or wrong responses but rather the capacity to share feelings, thoughts and past experiences. The communicator must understand the value in sharing such experiences and for children with ASD this value needs to be highlighted. The child with autism must learn to process verbal and nonverbal language simultaneously in order to have a successful conversation. This includes the processing of gestures, intonation, facial expressions, pauses and innuendo all of which are challenging for the child on the spectrum.

Upon beginning an RDI intervention for a child with ASD, the parents are asked to evaluate the communication style they have established with their child. They are encouraged to increase the model of experience sharing and to provide multiple opportunities for nonverbal exchanges. They are asked to decrease instrumental communication. By allowing the child to have meaningful exchanges without verbal language the child begins to understand firsthand the importance of communication. Parents are also encouraged to increase eye contact by using facial expressions that will convey something to the child. They argue that this is far more reinforcing than requiring practiced eye contact exercises. For example, parents can use their facial expressions to be humorous or to respond to a question. In the case of a question, the child has no choice if this is the only response they receive. They have to pay attention to the face and learn to analyze it for meaning. In this way the child practices deciphering nonverbal communication and receives natural reinforcement, in that establishing this skill keeps him socially engaged. This concept of checking in with a communication partner when uncertain is known as social referencing. One of the main goals of RDI is to increase social referencing in children with autism. Thus, instead of responding by withdrawing or tantruming, the child with autism can reference someone else and in that sense "borrow" their higher capacity to understand social situations.

Parents are trained to create moments of uncertainty which are brief enough that the child will not become overwhelmed and frequent enough that they get extensive practice referencing. This exercise is referred to as productive uncertainty. Productive uncertainty can be as simple as pausing while walking with a child so that they have to reference the adult to see why they have stopped and when it is appropriate to continue.

In addition to teaching ASD children to gain information by referencing others, RDI teaches children to be better problem solvers. Gustein believes that in order to navigate the complexities of the social world, one must first learn to depend on others before they can become more independent. Parents are eventually taught to help their child become more independent as through these tasks their opportunities for learning will be increased. Parents often take for granted that certain activities are not yet realistic possibilities for their child and through this intervention they are pleasantly surprised.

RDI is a parent based intervention so consultants work closely with parents to establish goals and to modify their style of interacting with their child. As parents become more experienced in guided participation they can begin to use "dynamic intelligence" in their work with their child. The dynamic intelligence curriculum is comprised of over a thousand goals and objectives that have been created by Gustein based on the continuum of typical development. Consultants meet with parents once or twice a week to review goals and design new objectives. Gustein emphasizes that RDI acknowledges parents as the most important influence in their child's life. RDI empowers parents to guide their children as successfully as possible towards being more related and more independent.

Option Method – Son Rise

The Option Method, also known as the Son-Rise Method is a parent directed, relation-based approach developed by parents, Barry Kaufman and Samahria Kaufman in their efforts to work with their autistic son. Developed in the 1970s, the foundation of the Son-Rise method is the idea that parents must first join their autistic child before they can show the child the way out. Parents are encouraged to join in with their autistic child’s repetitive motions and non verbal articulations. The premise is that by joining their child in these behaviors they are creating a bond and the beginnings of a trusting relationship which according to the Kaufmans is essential to teach any child. By not forcing the child with autism to conform to a world they are not yet able to understand, they are more willing to open up socially to another (Kaufman, 2010). The primary focus of the treatment is establishing relationships and creating interpersonal growth.

Parents interested in creating a Son-Rise program for their child are encouraged to participate in a five week training course. The first principle parents are trained in is “joining.” This, as described above, is when parents imitate the repetitive patterns of their autistic child. In so doing, parents are taught to change their attitude about their child with autism. The Kaufmans teach parents that children with autism move away from or avoid those that they perceive as judgmental and towards those that they feel are accepting. Thus a change of attitude towards their autistic child’s behaviors is paramount to the success of this methodology.

In the beginning of treatment, when the child with autism is withdrawn or easily distracted, parents and therapists are encouraged to work with their child in a small space free of distractions. This stage of the treatment may continue for weeks or months. Eventually the child will develop a connection with the individuals treating him and eye contact will increase. This will afford the parents or treating therapists to begin slowly to introduce novel materials and experiences based on the child's interests.

In the documented intervention of the Kaufman's son Raun, he was unresponsive for approximately four months. The Kaufmans worked with Raun in a large bathroom during this phase of his treatment. They began introducing puzzles, music, bubbles and balls in the second stage of Raun's treatment and worked with Raun over 70 hours a week. Verbalization was not required, but in Raun's case it emerged spontaneously within the first year of treatment.

In this second phase of treatment, the Son-Rise Method emphasizes "capitalizing on each child's own motivation" (Kaufman, 2010). They argue against repetitive trials and instead teach in terms of games and play that that the child enjoys. The Kaufmans make a distinction between information that is "memorized" (as taught through ABA) and information which is "learned" using their approach. They argue that the skills they teach are more naturally generalized and that those taught through ABA are robotic and are not typically generalized (Kaufman, 2010).

In common with DIR/Floortime the Son-Rise method is used to teach social goals initially and academic goals are not considered a priority. Early on in the treatment the priority is to increase communication, eye contact, communication and flexibility. The

Kaufmans feel that by emphasizing social growth, children with autism can be taught to overcome their social limitations rather than merely compensate for them.

Raun was considered by his parents to be “cured.” He developed speech, caught up on cognitive skills and attended mainstream schools. He went on to obtain a degree from Brown University. He eventually became the CEO of the Autism Treatment Center of America.

Critics of the Son-Rise approach question whether Raun was truly autistic. The Son-Rise method has no empirical backing and there have been no documented cases of this approach helping older children with autism. A 2003 study which looked at the impact of the Son-Rise Method on families found that overall the program led to more drawbacks than benefits with many families showing increased amounts of stress (Williams & Wishart, 2003).

Skill Based Intervention and Treatment

Applied Behavior Analysis - ABA

As neurological theories were beginning to emerge, behavioral therapists began to get attention from the psychological community for their success in treating autism using behavioral techniques. Prior to this, the majority of children with autism was considered “uneducable” and were institutionalized by adolescence, if not earlier (Chawarski, Klin & Volkmar, 2008).

The writings and works of Pavlov and Watson were some of the first to illustrate through experimental study the characteristics of habits and the processes of learning and unlearning (Wolpe, 1990). The case of Little Albert presented by Watson and Rayner (1920) illustrated to the psychological community that fears could be acquired through pairing of a conditioned stimulus and a previously unconditioned stimulus. Experimenters exposed little Albert to a loud noise (the unconditioned stimulus - UCS) which had already been established as "causing fear" (the unconditioned response). They then proceeded to pair the loud noise (UCS) with a white rat (which did not initially evoke a fear response). After multiple pairings the white rat (the conditioned stimulus) was able to evoke the fear response (crying) in little Albert even in the absence of the unconditioned stimulus (the loud noise). Generalization also occurred and Albert demonstrated fear responses to other white fluffy animals which had not been specifically paired with the loud noise.

J.B. Watson played a pivotal role in creating a new direction for psychology in the early 1900s. Whereas the majority of the psychological community had been emphasizing unconscious thought and encouraging introspection, Watson argued that observable behavior was for more critical in understanding the individual. Watson proposed that the study of behavior should be scientific and based on the relationship between the stimulus and the evoked response (Cooper, Heron & Heward, 1987). Watsonian-behaviorism became regarded as stimulus-response psychology (Cooper, Heron & Heward, 1987). Watson was confident that the key to helping individuals lay within our ability to analyze, understand and control the relationships between our environments and our behaviors. The following is Watson's well-known claim regarding the critical nature of the environment on child development:

> "Give me a dozen healthy infants, well-formed and my own specified world to bring them up in and I'll guarantee to take any one at random and train him to

> become any type of specialist I might select-doctor, lawyer, artist, merchant, chief and yes even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations and race of his ancestors. I am going beyond my facts and I admit it, but so have the advocates of the contrary and they have been doing it for many thousands of years" (p.104).

Although the extreme nature of Watson's claims served as fodder for critics, his theories regarding the objective study of behavior as a natural science laid the groundwork for behavioralism (Cooper, Heron & Heward, 1987).

The science of behavior was truly initiated by the publication of B.F. Skinner's the Behavior of Organisms (1938). This publication summarized Skinner's laboratory research from 1930 to 1937 and brought two critical tenets to the attention of the world of behaviorists. The first was referred to as respondent behavior. Respondents, similar to Watson's "responses," are behaviors that are elicited by the stimuli that precede the behavior. Reflexes are examples of respondent behavior. Respondent behaviors are generally involuntary and occur whenever the eliciting stimulus is presented (Skinner, 1938).

The second type of behavior described by Skinner was operant behavior. Operant behaviors occur as influenced by a stimulus that follows the behavior (Skinner, 1938). Skinner's observations and research left him to conclude that many human behaviors could not be explained by the respondent or S-R model (Skinner, 1938). Skinner encouraged the further scientific exploration of these paradigms. From the 1930s to the 1950s, Skinner, his students and his colleagues conducted countless controlled studies.

Some of this research was performed with animals in the operant chamber (also referred to as the “Skinner box”). This box contains levers, which when pressed, deliver reinforcement. Skinner and his colleagues were able to study the impact of reinforcers on behavior and to eventually identify which schedules of reinforcement are the most likely to increase and prolong the occurrence of a particular behavior (Skinner, 1938). The research done by Skinner and his colleagues led to the establishment of many of the basic principles of operant behavior that are known today including the concept of performing a functional behavioral analysis. Through this process, the behaviorist attempts to identify the relationship between behaviors and those factors in the environment that are related to the occurrence of that particular behavior.

Although Applied Behavior Analysis (A.B.A.) was not applied to children with autism in a controlled setting until decades later, one of the first applications of operant theory to a human subject occurred in 1949. In this experiment an 18 year old boy who was referred to as a “vegetative idiot” was taught to move his right arm when such behavior was reinforced with sips of a sweet liquid (Fuller, 1949 in Cooper, Heron & Heward, 1987). In the 1950s and 1960s this research expanded to include mentally retarded individuals and preschool children (Cooper, Heron & Heward, 1987). The majority of the studies were conducted in clinics or laboratories and the purpose was to demonstrate whether behavioral principles were effective with human subjects. The research demonstrated that these methods were quite effective (Cooper, Heron & Heward, 1987).

The formal beginnings of applied behavioral analysis can be traced back to this period as well. Many researchers began applying behavioral principles in order to help teach social behaviors to individuals with developmental delays. These methods are now essential tools for eliminating unwanted behaviors in autistic children and in teaching desirable behaviors. The terminology has changed but the principles have remained the same. Many of the principles supported by these early researchers' findings comprise the foundation of Applied Behavior Analysis.

Applied Behavioral Analysis (A.B.A.) is based on the tenets established by previous behaviorists and is scientific and methodical. A.B.A. has been found to be effective in remediating many of the more cognitive and language based areas of deficit that are commonly seen in autism. The early studies that were conducted and published played a pivotal role in proving to society that these children were in fact "educable" (Chawarski, Klin & Volkmar, 2008). A.B.A. is currently one of the most common interventions and the core of many educational programs for treating children with autism. Empirical research has played a pivotal role in the widespread acceptance and use of A.B.A.. The controlled studies performed by Lovaas and his colleagues (1987) were some of the first empirically based examinations of treatment methodology and outcome to be conducted in the field of autism.

Lovaas was able to demonstrate the effectiveness of ABA on the development of receptive and expressive communication, daily living skills, fine and gross motor skills, socialization and daily living tasks(Lovaas, 1987). Importantly the studies that were done by Lovaas and his colleagues found that a program should be between 30-40 hours per week to be effective. He was also able to identify that only 2% of his control group (receiving only ten hours of intervention each week) was able to mainstream in what was identified as "spontaneous recovery." This was in contrast to the approximately 50% of the children who were treated with a more intensive program (30-40 hours) and were able to attend school in typical educational settings with typical peers (Lovaas, 1987). This research led to the conclusion that A.B.A. programs must be intensive (approximately 30-40 hours a week) in order to be effective. The A.B.A. philosophy is that children with autism should be appropriately engaged most of their waking hours.

A.B.A. is very methodical. Programs rely on data to demonstrate measurable gains and it should be evident that the procedures employed were responsible for the improvement in behavior. Programs are written up with goals, which are broken down into small, more easily mastered steps. The procedures for how each step will be taught are described in minute detail. Included in each treatment goal is specific mention of what the instructor will do or say to elicit a specific response and what specific response is expected from the child. Additionally the “error correction” is outlined. Error correction is the steps that will be taken if in fact the desired response is not elicited.

Prompts are used to guide the child to be successful. These prompts range from the most intrusive, full-physical prompt, to less intrusive verbal prompts or gestural prompts. At times an approach is used known as errorless teaching. This approach has been found useful when a child is errorring consistently on a particular response. So for example, every time a child sees a picture of a cat, he says “dog,” the instructor will give the correct response before the error can occur. So if the instructor asks the child, “What is this?” before the child can respond erroneously “dog” the instructor will say “cat!” and ideally the child will repeat “cat.” The level of prompt or support will then be systematically faded until the child successfully and independently can say “dog” when presented with a picture of a dog.

As the theory behind A.B.A. was put into practical use to write programs and curriculum for children with autism, the principles evolved and expanded. Currently, the most important aspects of A.B.A. stem from the concept of operant conditioning, the idea that one can use external reinforcement to increase the likelihood that a particular behavior will occur. The concept defines the relationship between a stimulus and a desired behavior that can be developed through discrete trials. Eventually the discriminative stimulus (Sd) comes to indicate that a particular behavior is expected. If the subject engages in the expected behavior, then reinforcement is provided. The delivery of this reinforcement increases the chance that this sought after behavior would be emitted again in response to the Sd. So for example, one Sd might be “stand up.” If the child stands up then a reinforcer would be delivered, thus increasing the likelihood in the future that when the child hears someone ask him to “stand up” he will oblige.

Operant conditioning is considered to be a critical concept in the treatment of autistic children because they frequently lack the internal motivation to learn from their environment. It somehow evades the child with autism that it is in their best interest to learn to speak. External rewards can function as motivators and increase the autistic child’s capacity to learn and to attend.

The science of behavioralism expanded and soon controlled studies were designed to evaluate potency of reinforcement, reinforcement schedules, and behavioral techniques for eliminating undesirable behaviors.

Some of these studies set out to determine how frequently subjects should be reinforced in order to optimize learning. Through empirical research it was found that one could increase the chances of teaching an organism new behavior by optimizing the reinforcement schedule. Terms such as fixed-ratio and time-interval came to distinguish the various ways that reinforcement could be delivered. If reinforcement was delivered on a one to one basis the organism might satiate or no longer be driven to work for the reinforcer at hand. The various schedules of reinforcement were compared and intermittent reinforcement was found to be the most powerful and therefore the most likely to sustain a behavior.

Some of these empirical findings can be applied readily to interactions between parents and their child with autism. Importantly, behavioral theory identified the fact that negative behaviors are often unknowingly reinforced on an intermittent schedule, meaning that although parents might ignore their child's inappropriate behavior some of the time they occasionally attend to it. That intermittent reinforcement is in fact the most powerful way to assure that the child will continue the behavior. The child, unsure when the parent will respond, but confident that they will respond at some point, continues to emit the problematic behavior.

Behavioralists also developed a concept known as extinction. This concept implies that in order to extinguish an undesirable behavior, the behavior should never be reinforced. If the behavior is occasionally reinforced, that is the equivalent of an intermittent reinforcement schedule and the behavior will continue to occur. Only if the behavior is consistently ignored will extinction occur.

Many parents who are dealing with their autistic child's problematic behaviors are encouraged to examine how they might be reinforcing them. For instance the parents of an autistic child who tends to throw screaming tantrums throughout the day, might be trying to put his tantrums on extinction. The parents might be successfully ignoring the tantrums while at home but when he throws a tantrum at the playground, his parents might pick him up and bring him home to avoid creating a scene. Being picked up and removed from the playground may in fact be reinforcing to the child and therefore increase the likelihood that the tantrum behavior will continue. Behavioral therapists typically conduct a functional analysis to determine the antecedents and potential reinforcers for a particular problematic behavior. Many such analyses demonstrate that negative attention is sometimes reinforcing to a child and even more so to a child with autism. Parents are taught to carefully evaluate their response patterns and to be extremely consistent with regard to “reinforcing” problem behavior.

Other theorists and researchers also contributed to the current intervention approaches being used today to reduce problem behaviors. In the 1920s theorists such as Jones (1924), and Bernman (1924) presented cases in which the use of “counteractive behavior” was employed as the method of eliminating undesired behavior (Wolpe, 1990). “Counteractive behavior” is a behavioral approach whereby the individual is encouraged to engage in a behavior, which is diametrically opposed to the problematic behavior. For example, a child who tends to flap his hands while walking, will be encouraged (via behavioral techniques) to walk with his hands in his pockets. Engaging in the replacement behavior renders it impossible to engage in the problematic behavior and therefore eliminates its occurrence. This technique is currently a well known behavioral technique and is referred to as DRI (differential reinforcement of incompatible behaviors). It is one of the most effective approaches within A.B.A. programming to eliminate undesirable behaviors.

Guthrie expanded on the original work done by Jones and Bernham and proposed that the most efficient way to break a habit is to look for the cues that precede an action and to practice a different response to the antecedents (Guthrie, 1935 in Wolpe, 1990). For example, a child who tends to spin objects that he finds on the floor, instead can be taught to place the objects in a designated basket. The cue (toys on the floor) must be present while the individual engages in the replacement response. Guthrie concluded that the replacement response tends to inhibit the problematic one and thereby weaken it (Guthrie, 1935). Guthrie's replacement technique has also been incorporated into A.B.A. methodology. It is now referred to as DRA (differential reinforcement of alternate behaviors). Both DRA and DRI can be very effective in eliminating undesirable behaviors because they simultaneously teach adaptive and appropriate replacement behaviors.

To summarize: A.B.A. is an extremely effective methodology for teaching children with autism. Operant conditioning techniques provide external motivation and the hierarchical approach fosters a sense of success and encourages children with autism by allowing them to be successful when tasks are broken down. The brain-based nature of autism requires that a successful intervention program treat these areas of neurological deficit specifically and intensively. Neurological remediation is not specific to autism however and it is through exploring other brain based remediation programs that we can better understand what these methodologies have in common and incorporate these commonalities into an integrated approach.

The treatment programs described below employ the use of repetition and exercises created to enhance improvements in a particular aspect of neuro-functioning.

In recent years there have been impressive advances in the field of neurological remediation. While some of these approaches were initially designed to improve the outcome of traumatic brain injury victims and stroke patients, they have expanded to include individuals with developmental delays and early empirical studies are indicating that children with developmental delays respond to remediation.

Criticisms of ABA

ABA has been criticized in terms of general weaknesses of the model as well as criticisms related to the designs of the positive outcome studies. Greenspan argues that repetitive exercises to teach specific skills such as matching shapes have not been shown to be an essential foundation for cognitive or social capacities or auditory processing and language capacities and higher level thinking skills (Greenspan, 2006). Greenspan further claims that ABA works predominantly with surface behavior, while paying less attention to relationships, individual processing differences and the building blocks of thinking (Greenspan, 2006). Greenspan’s comments reflect some of the common criticisms seen in autism literature. ABA is at times cited as failing to promote generalization as a result of its highly structured method (Roberts, 2004). Additionally, supporters of more developmental/interpersonal models argue that by attempting to control the child in such an intensive manner further states of withdrawal are induced (Greenspan, 2006). Finally some argue that ABA tends to be a model that discourages the use of more interpersonal approaches and critics question whether ABA can address all of the needs of the autistic child using this exclusive approach (Roberts, 2004).

The initial studies that were performed by Lovaas and his colleagues have also been criticized for delaying the treatment of group one so that they were six months older than the controls (Johnson, 1998). Different measures were used at pre and post-test. There are many more girls in the control group which may introduce a bias. Many researchers have cited that the assignment of the children to the different groups was less than random (Gresham & MacMillan, 1998; Rutter, 1996; Schopler, Short & Mesibov, 1989). Lovaas argues that such random assignment is difficult to achieve as it poses ethical and practical difficulties (Lovaas, 1989). There were however many reproductions of Lovaas' original findings and overwhelmingly ABA is perceived as an empirically backed, strongly supported model in the treatment of autism (Mesibiv, 1998).

Pivotal Response Training (PRT)

Screibman and Koegel created a particular method for treating children with autism known as Pivotal Response Training. This method was developed in the 1980s and uses the principles of A.B.A.. PRT differs from traditional ABA in that discrete trials are not used. Instead it is emphasized that children must be motivated to interact with adults in order to engage in repeated learning opportunities. The fundamental principles of PRT are: 1) Use of reinforcers that are naturally connected to the child's goals and responses, 2) allowing the child to make choices related to the teaching segments, 3) interspersing maintenance trials with acquisitions trials 4) accepting approximations for skills that are not yet acquired, 5) incorporating activities that are highly motivating to the child, 6) sharing control of the materials and the interactions with the child so they perceive higher levels of involvement (Shreibman & Pierce, 1993).

Studies that have examined the efficacy of PRT and other more naturalistic behavioral approaches have found them to lead to higher rates of generalization and increased rates of spontaneity when compared with traditional behavioral intervention

(Charlop-Christy & Carpenter, 2000; Delprato, 2001; Miranda-Linne & Melin, 1992). Studies of naturalistic behavioral interventions have also found that there is more positive affect expressed by parents while using this approach with their autistic child than seen in traditional ABA (Schreibman et al., 1991). It has not yet been shown empirically however if naturalistic approaches are as effective as traditional ABA in increasing intellectual performance (NCR, 2005).

Structured Teaching - TEACCH

Treatment and Education of Autistic and Related Communication Handicapped Children or TEACCH was developed by Eric Schopler at the University of North Carolina in the 1960s. TEACCH represents the approach used in the North Carolina school system rather than a specific model. The goal of the TEACCH approach is to help every individual with autism achieve the highest level of autonomy possible. This is accomplished by helping them to acquire communication skills that will allow them to interact with others, the skills to understand the world around them and to be able to make decisions in a competent manner regarding their life. All of these goals are achieved through education and the education plan of each individual child is constantly being revised to reflect their current level of functioning. The approach is very optimistically framed, thus rather than referring to an “area of deficit” a TEACCH therapist would identify the child’s “potential for acquisition.”

In contrast to ABA, TEACCH works on the underlying conditions that will foster learning experiences rather than directly on the behavior. The belief is that by engineering the environment (to reduce stress) and increasing the potential for both communicating and understanding communications, problem behaviors will naturally be less frequent.

The engineered environment is particularly useful when applied to a school setting. TEACCH is used in many public school systems to instruct children with autism. A TEACCH classroom has designated areas for each type of task a child may work on. The classrooms tend to be very structured. For example there may be one area for gross motor development and another area in which children work on communication skills and other individual skills.

TEACCH emphasizes visual learning, as this is a strength for many children with autism. Visual schedules are critical to assist children through transitions, which can tend to be difficult for children on the spectrum. These schedules allow the autistic child to anticipate and plan. Typically the child will remove activities that are complete and place them in a finished envelope at the bottom of the schedule. Sometimes children are expected to pull off the picture and/or text for the next activity and match it to materials associated with that particular activity. So a child might pull off a picture that “Cutting with Scissors” is next and will remove that picture and match it to his cutting box. Velcro is placed on the back of his schedule picture as well as on the scissor box so that the schedule picture can be physically attached. Other times the child may remove the picture from their schedule and match it to a corresponding picture in a particular area. For example the child with autism will pull the “lunch” picture off of his schedule and will match it to a corresponding picture that has been hung on the door of the lunchroom. Visual aids such as these allow the child increased independence and reduce frustration by reducing the need for physical prompts.

There is tremendous respect for the parents’ perspectives and parents are encouraged to act as co-therapists. There is also respect for the individual with autism. Whenever possible they are asked to participate in their treatment plan.

TEACCH is one of the most widely used approaches to treat autistic children (Roberts, 2004). In a randomized study conducted by Schopler, Mesibiv and Baker (1982) individuals with autism were randomly assigned to one of three TEACCH treatment groups. The first group received an interview only, the second group received an interview and parent training and the third group received an evaluation and placement in a TEACCH program. The individuals placed in the third treatment group made the most significant gains and upon follow up had the lowest rate of institutionalization (Schopler, 1982). Additional studies have also substantiated the effectiveness of the TEACCH program (Lord, 1991; Venter, Lord and Schopler, 1992; Lord & Schopler, 1989). These studies found substantial increases in IQ scores. Gains were most significant when intervention started at the age of three with children who were initially non-verbal (Lord & Schopler, 1989).

Criticisms of TEACCH

Some professionals find it troubling the degree to which TEACCH enables individuals with autism. These critics argue that TEACCH endorses autistics’ rigidity, therefore failing to help them grow in this domain (Autism-PDD Resources Network, 1997). They feel that by filling the child’s day with schedules and routines, the child is deprived the opportunity to develop socially and to engage in problem solving, as they would if they were encouraged to navigate their environment with a larger degree of independence. Additionally, critics find the visuals and schedules to be socially stigmatizing and therefore a hindrance in terms of social acceptance. They feel that by emphasizing the need for a special tailored environment that mainstreaming is not attempted as often as might be appropriate, creating yet another limitation to the child's growth (Roberts, 2004).

Fast Forward

Fast Forward is a computer based intervention that was created as an outcome of the collaborative work done by Michael Merzenich and Paula Tallal. Tallal was studying the relationship between dyslexia and language processing. Merzenich had been doing research for the past decade on neural plasticity. Together they developed a program to significantly slow down the presentation of consonant-vowel combinations. Children using the program were taught to discriminate these blends and were reinforced via the computer game for doing so. The program responds to an individual child's performance so if the child exhibits repeated success the program speeds up its presentation of these auditory combinations until they have approached typical speech. The theory behind this intervention is that disabilities such as dyslexia are global processing problems are not uniquely visual. There is an auditory component as well and by remediating the child's ability to correctly process certain sounds they will simultaneously help them process written language (Doidge, 2007).

The software was initially created for language-impaired and learning disabled children. The results of a 1996 study demonstrated that children who did the Fast Forward program for a period of six weeks experienced significantly more gains in standard speech, language and auditory processing than the control group (Tallal et al, 1996). A subsequent study included 500 children from over 30 sites and found that the average child who participated in the program moved ahead 1.8 years in language development and that for most of the children in the study, their ability to understand language normalized (Miller, 1999).

Practitioners began recommending Fast Forward as an intervention for children with autism and anecdotal reports were positive. Parents and practitioners reported that not only did the program dramatically increase the autistic child's ability to process language but social gains were observed as well. Two studies were designed to test this hypothesis. The first was a language study which confirmed that Fast Forward moved some children with autism from severe language impairment to the normal range (Merzenich et al., 1999). The other study looked at 100 children with autism and found improvements in language, attention spans, sense of humor and specific social initiations (Melzner & Poglitch, 1998).

The recommended intervention is that children work on the program approximately two hours a day, five days a week for six weeks. Although the designers of Fast Forward attempted to imbed the reinforcement into the program, many children find this intense schedule grueling and therefore are resistant. Critics of Fast Forward challenge the success rates and accurately point out that the program is not a realistic intervention for children at the lower end of the spectrum as it is too difficult for them to comprehend the expectations (Veale, 1999).

Integrated Models

Historically, skill based models and developmental models have been considered opposing forms of treatment; however there has been some progress in the past 10 years in integrating the successful aspects of these leading treatments. Two such integrated models are described below. While both SCERTS and ESDM do incorporate aspects of behavioral interventions they have adopted naturalistic versions and feel that traditional ABA is both inappropriate as well as difficult to integrate. Instead these more integrated approaches have adopted certain behavior techniques such as hierarchical teaching, shaping and priming. They avoid the more repetitive trials consistent with discrete trial learning and prefer a more naturalistic approach.

SCERTS

SCERTS is an acronym which describes the primary goals of this model. SC stands for social communication. Through use of this model practitioners seek to develop spontaneous functional communication, emotional expression and secure and trusting relationships (Prizant et al, 2010). Emotional Regulation (ER) is considered to be paramount to learning. Children with ASD need to be able to maintain a well regulated emotional state in order to cope with typical stress. Transactional Support (TS) refers to the support that is given to the child with ASD in order to maximize the likelihood of success (can include visuals, PECS and sensory supports) as well as the support given to families and teams to increase the overall sense of teamwork.

The developers of the SCERTS model sought to provide parents with an alternative treatment that incorporated developmental theory. This model has a developmental, social-pragmatic focus and is applicable for treatment of toddlers through adults on the autism spectrum. This model reflects clinical and empirical findings regarding the communicative intent of behavior. The model also incorporates much of what is known about arousal modulation and emotional regulation.

SCERTS is an integrated model that combines tenets of “evidence-based” practice with developmental theory. SCERTS is more methodical than other developmental/interpersonal models, although it does not incorporate traditional ABA practices. The individuals who developed the SCERTS model feel that traditional ABA creates a more restrictive environment that would be confusing to incorporate into their more socially based model.

This model does, however, examine the functions of behavior and incorporates positive behavior support. The theorists that developed SCERTS based their model on the relationship they found to exist between communication, social emotional development and emotional regulation (Prizant, 1999, Prizant & Meyer, 1993). This model uses research on existing developmentally based communication interventions. SCERTS operates using a family centered philosophy. The SCERTS model incorporates parents in the treatment and seeks their input in identifying and developing goals. Parents are taught to successfully interact with their child and the model places tremendous importance on the child’s perspective. Although SCERTS incorporates existing models of intervention it is considered to be novel in terms of its emphasis.

Social Communication

The achievement of communicative competence is strongly correlated with outcome of children on the spectrum and this relationship is well documented. There are a host of communicative behaviors that are seen more frequently in ASD children that display a greater capacity to establish and follow the attentional focus of their communicative partner (Carpenter & Tomasello, 2000; Wetherby, Prizant, & Hutchinson, 1998). There are two primary social communication goals: the capacity for joint attention and the capacity for symbol use (Prizant et al, 2003).

Prior to the development of language, joint attention capacities play a critical role in the ability of the child to orient to a social partner, to coordinate and shift attention between people and objects to share and interpret emotional states and eventually to use gesture and vocalizations paired with physical contact or gaze to intentionally affect another person (Prizant et al, 2003). The ability to monitor the social environment (primarily through referencing) and share affect typically precedes intentional communication (Prizant etal, 2003). At the pre-verbal stage, typically developing children use gestures to communicate and elaborate joint attention. An example of this would be pointing to express interest in the environment.

At the preverbal level joint attention involves need-based instrumental communications as well as social initiations. As language begins to emerge, joint attention plays a pivotal role in scaffolding communication in these two domains. Children are able to use joint attention skills in the development of more sophisticated exchanges including concepts of past and future and gauging the interest level of a conversational partner. There are four deficits experienced by most children with autism that impact their ability to engage in joint attention:

1. limitations in coordinating attention and affect
2. limitations in sharing intent
3. a restricted range of communicative function resulting in a reduced frequency of communication
4. difficulty inferring another’s perspective or emotional state.

(Prizant et al, 2003).

These challenges present in various degrees creating a very heterogenous portrait amongst autistic children. They reflect the areas that need to be addressed in order to help children on the spectrum increase their capacity for joint attention.

The SCERTS model uses the literature on the developmental process of language and play in typically developing children as the basis for understanding the deficits seen in children on the spectrum. In typical development, the development of language is an active process. Children begin to construct schemas based on their experiences which are an active part of the acquisition of language. There are three steps that children typically progress through in developing more sophisticated language. The first of these is the development of intentional communication. This typically develops before the emergence of verbal language. This phase includes the intentional use of gesture and vocalizations to interact with another. Next is the development of early symbolic communication. In this phase children begin to use single words to communicate. This phase can include picture exchange for children who are unable to verbalize words. Finally, children progress to linguistic communication. This phase of language development includes speaking in phrases, language construction and discourse.

The child’s play tends to develop in a parallel process that evolves with the development of language. First objects are used for functional purposes, then later we see the beginnings of symbolic play and finally sociodramatic cooperative play develops.

During this process, language development is mediated by the child’s capacity to engage in joint attention with others. The development of language in turn impacts the child's capacity to regulate behaviors and emotions, to plan and to problem solve (Prizant et al, 2000).

An impaired development of symbolization impacts critical areas of development (Prizant et al, 2003). Failure to develop communicative gestures results in less appropriate attempts to guide another such as pulling, pushing and turning their head to direct their gaze. In turn many children with an impaired ability to communicate will tantrum as they do not have more appropriate means to protest or establish social control (Prizant, 2003). Impaired symbolic development also leads to a paucity of spoken words and unconventional vocal development. The unconventional development may manifest in terms of echolalia, perseverant speech or incessant questioning (Prizant, 2003). Finally there will be limitations in terms of symbolic play. These limitations may appear as an inability to use some objects appropriately (affected by poor imitation skills) as well as difficulties representing social events or to elaborate on pretend play schemes (Prizant, 2003).

Using the SCERTS model, interventions are uniquely designed for each child depending on their strengths and weaknesses. Initially an assessment is conducted to ascertain the child's capacity for joint attention and symbol use. Based on the findings, goals are established that will increase the child's abilities in these two domains. The following are the SCERTS goals for the joint attention in the prelinguistic child.

1. Establish anticipatory behaviors
2. Establish shared affect
3. Establish early intentional behaviors (such as coordinating vocalization and gaze).

4. Increase frequency of communicative bids.
5. Expand range of communicative functions beyond instrumental functions.
6. Develop strategies to persist and repair communicative breakdowns.
7. Develop ability to communicative intent across familiar persons, activities and environments.

The following are the goals for symbol use that have been designed for the prelinguistic learner.

1. Establish a consistent means for expressing intent.
2. Replace earlier developing or unacceptable communicative means with socially acceptable forms.
3. Develop a child's ability to use multiple gestural and vocal means (eg. A distal point, a head nod, a head shake).
4. Develop the use of non-verbal strategies for the purpose of sharing and calling attention to oneself.
5. Establish functional use of familiar objects and early play schemes directed towards oneself.
6. Develop the use of more formal augmentative/alternative systems to communicative intentions.

In addition to these goals the SCERTS model also outlines the goals for children at the Emerging Language Level and the Advanced Language Level.

Emotional Regulation

Emotional regulation is a core factor in the SCERTS model (the "ER" in SCERTS). Emotional regulation plays an integral role in attention and social engagement and is essential for the development of optimal socioemotional and communication development and the development of relationships for children with and without disabilities (Prizant and Meyer, 1993). Tronick distinguished between self-regulatory capacities and mutual regulatory capacities (Tronick, 1984). These capacities both affect the child's ability to modulate emotional arousal. Self regulation is initiated and carried out by the individual. Mutual regulation occurs in the context of interacting with another and indicate the child's ability to respond to assistance from another. In the early months of life, mutual regulation is also affected by the caregiver‘s sensitivity in reading and responding to the child's behaviors. These behaviors may be particularly challenging when the child has autism.

A child's ability to transition along arousal states in relation to internal and external factors will impact their ability to engage with those around them. Factors that influence an individual's ability to regulate include the environment (the intensity of stimulation), social context (availability of familiar others), and internal constitutional variables (illness, fatigue and pain) (Prizant et al, 2003).

Pert argues that emotional state and physiological state are interdependent (Pert, 1997). Changes in the emotional state are accompanied by changes in the physiological state and change in the physiological state affects one's emotional state (Pert, 1997). Children with autism have significant difficulties with arousal modulation (Anzalone & Williamson, 2000; Dawson and Levy, 1989; DeGangi, 2000; Kientz & Dunn, 1997; Ornitz, 1989). Most children with autism have a limited ability to be "available" to learn and interact as a result of their difficulties regulating their arousal and emotions. Some children with autism may have a low threshold for physiological and emotional reactivity. As a result they may become overwhelmed causing anxiety and agitation. These emotional responses from the child who is in fact overwhelmed are fight or flight reactions and are frequently misunderstood such that the child may be labeled as aggressive, non-compliant or manipulative (Prizant et al., 2003). For example some children may dart from a room that is overstimulating in an attempt to escape being overwhelmed. Other children with autism experience persistent states of underarrousal and may be perceived as spacey, self-absorbed or unmotivated. Finally other children may cycle back and forth between these two extremes in terms of their regulatory state.

Deficits in the development of language and the use of symbols impact the autistic child's ability to engage in self-regulation as well as mutual regulation. The use of "inner language" has long been understood to play a critical role in the capacity to self-regulate (Vygotsky, 1978). Additionally, there are important cognitive functions that play a role in self-regulation such as the ability to represent past events in memory and to problem solve through inner symbolic means (Prizant et al, 2003). Typical children use these cognitive skills to organize experiences and behavior, to learn from past events and to plan for future events. Lacking these abilities creates a cascading effect in terms of the child with autism's ability to self-regulate.

Mutual regulation is also impacted by some of the other core deficits characteristic of autism. Difficulties with joint attention and social communication affect the autistic child's ability to regulate in relation to a partner. A child with autism may not know that another person can provide comfort through physical or verbal means. They may not be able to experience typical physical and verbal comforting as a regulating act. Therefore they may not seek out others when distressed. In addition the child with autism may even have additional stress and emotional arousal in response to their deficits (eg. not understanding the communication of others leading to increased frustration and heightened arousal).

SCERTS targets emotional regulation by targeting goals that relate to both self-regulation and mutual regulation. It is again important to first assess whether the child is prelinguistic or capable of higher level cognitive-linguistic means. Developmentally a child who is prelinguistic may self soothe by sucking their thumb, averting their gaze or engaging in repetitive motor activity. The more verbal child can use self talk to self soothe in times of stress. These skills can work in conjunction with one another in that the higher level child can use self talk and a repetitive motor activity in times of stress (Prizant et al, 2003).

In assessing the child with autism, it is important to determine the primary factors supporting or interfering with emotional regulation and the specific signals a child gives when he needs assistance (Prizant et al, 2003). Specific goals are set according to the observations that are made initially and then the child is reassessed at various intervals and adjustments are made accordingly. Some of the goals that may be set involve engaging in a particular activity when distressed. One child may be encouraged to hold a favorite toy or listen to music while a more able child may be encouraged to request breaks from overstimulating activities. From a cognitive perspective, teaching children to use an activity schedule may reduce anxiety by allowing the child to predict activities, transitions and time left in a particular activity which in turn reduces frustration and allows for greater self-regulation. In addition, a schedule helps a child to develop an awareness of time as well as to better understand language about past and future events.

With regard to mutual regulation, the SCERTS model supports the notion of increasing the child's ability to protest and refuse. Again goals are set depending on the functioning level of the child. Non verbal children may be encouraged to refuse through gesture and a more verbal child may be encouraged to verbally refuse undesired items. These abilities to self advocate have been found to reduce problem behaviors associated with emotional dysregulation (Carr et al., 1994). The goals developed within the SCERT model regarding emotional regulation also include proactive goals incuding alternating between sedentary and movement activities and attempting to reduce the level of sensory input (Prizant et al.,2003). There are also reactive strategies such as providing access to a calm, quiet space, reducing the difficulty of an activity or reducing the time spent on an activity that is creating distress. Some experiences that tend to be particularly dysregulating for autistic children are exposure to overwhelming sensory input, changes in routine, inappropriate task demands (either too difficult or too long in duration) and disorganizing social and linguistic input. The final segment of the SCERTS model offers suggestions for lessening the impact of these variables primarily through use of nonspeech communication systems and visual supports.

Transactional Support

Most individuals with autism require support in order to be successful in school, the community and in interpersonal relationships. SCERTS emphasizes that these supports must be flexible and respond to the different social contexts and to the changing needs of children and families (Prizant, 2003). Most important however is that the children and the families are comfortable and competent in using the systems that have been established. Transactional supports have been developed for three crucial domains, interpersonal support, educational support and family support.

Accounts of personal experiences as well as empirical research identify how challenging social interactions are for people on the spectrum (Domingue et al, 2000, Bristol & Schopler, 1984). It is not the case that children with autism have no interest in engaging with others socially but rather it is the social-communicative, social-cognitive and regulatory issues that make social interactions so difficult (Prizant, 2003). The apparent avoidance that is frequently seen in persons with autism is cyclical in the sense that repeated failures and excessive stress cause them to avoid such interactions. The first two components of the SCERTS model, social communication and emotional regulation increase the likelihood that children with autism will be more successful socially.

Initially, using the SCERTS model, communication partners are evaluated with regard to their ability to communicate with the child with autism. Expression of emotion, language complexity and style, volume and rate of speech, physical proximity and physical contact are assessed. A very controlling, directive communicator may intimidate some children with autism, thus lessening their communicative attempts. Another autistic child may attempt to escape from an overly controlling partner. An optimal communication partner is one who provides enough structure to support a child’s attentional focus, situational understanding, emotional regulation, and positive emotional experience. At the same time the partner should foster initiation, spontaneity, flexibility, problem solving and self determination (Prizant et al., 2003). Passive compliance is perceived as being as problematic as difficult behavior.

It is critical that this model be applied to peers as well. Many children with autism will particularly avoid peers as they are perceived as less predictable than adults. Training peer models and siblings of children with autism to interact more successfully with the autistic child can enhance their ability to connect with children their age.

The SCERTS model recognizes the importance of providing support to children with autism within educational settings as well. Although some children with extreme challenges may require educational environments that are very structured, SCERTS is optimally applied to situations in which the child is less restricted and has opportunities to learn in small groups and make transitions as independently as possible.

Prizant (2003) emphasizes that one-on-one teaching environments are too restrictive. Children need to learn to shift attention, follow the flow of interactions in a small group, to tolerate proximity to other children and to anticipate one’s turn in ongoing reciprocal activities. Well-designed, semistructured activities and varied social contexts offer the best venue to teach these critical skills.

In order to offer the most useful support to children with autism in the school environment, there must initially be an assessment regarding the barriers that are impeding the learning process. Most children with ASD are better able to process visual information than auditory input (Prizant, 1983; Wetherby et al, 1997). This being the case, visuals can be created to expand communication, support receptive language, increase organization and increase regulation.

In most cases curriculum modification is also an essential part of transactional support. Ensuring that curriculum is appropriate and being taught in an appropriate manner will reduce frustration and increase success.

Practitioners working within the SCERTS model recognize that frequently families are the ones spending the most time with their child with autism. It is considered critical within this model that family support and training be provided. Similar to the interpersonal assessment segment, an assessment is made of how the family members engage with the child with autism. Feedback and goals are provided regarding optimal interactions.

The family's culture and structure are taken into consideration as intervention is provided and the family members play an active role in setting goals for their child. The practitioner is trained to highlight the child's strengths and to train family members to celebrate even the smallest accomplishments. This keeps family members connected and hopeful with regard to their child's treatment.

The Early Start Denver Model (ESDM)

The Early Start Denver Model is an integrative model that is primarily developmental in that it aims to build social initiative and social engagement of children with autism. Sally Rogers and Geraldine Dawson, the creators of ESDM, liken this aspect of the model to other developmental models such as DIR, RDI and SCERTS. ESDM is distinct from these approaches however, in that it incorporates elements of applied behavior analysis (ABA). Children are taught using empirically supported ABA tools such as prompting, fading, shaping and chaining. Data is taken to track progress. Unlike many traditional ABA programs though, there is an explicit focus on quality of relationships, affect, and adult sensitivity and responsivity (Rogers and Dawson, 2010). The incorporation of ABA takes on a more naturalistic approach and the child's interest direct the interactions. Autistic children receiving ESDM do not engage in discreet trial learning, rather speech and socialization targets are imbedded in these child led interactions.

There is also a tremendous emphasis in training parents as partners in their child's treatment. Parents are taught how to become partners in play and how to incorporate the goals for their child into everyday interactions.

The Origin of ESDM

ESDM strongly references a constructionist model of early development. The constructionist view is based on the concept that infants construct their own knowledge base and representational models of their environment through their own sensorimotor explorations of objects and the physical world (Rogers & Dawson, 2010). Rogers and Dawson review the current findings regarding social deficits of autism and conclude that there is a profound deleterious effect of not being socially drawn to attend to language, gestures and social interactions

The ESDM Curriculum

The ESDM curriculum consists of 12 domains of development. The domains are receptive communication, expressive communication, social skills, imitation, cognition, play, fine motor, gross motor, behavior, personal independence: eating, personal independence: dressing, and personal independence: grooming. Each of these 12 domains has skills that have been divided into four levels of achievement. In the initial stages of setting up a program for a child, the parents are interviewed and the child is observed. If the child is attending preschool or daycare, the teacher or caretaker may be interviewed as well.

The observation is done by a trained therapist. The child is evaluated over a period of an hour and a half. There are various stations that have been established in the room. The evaluation period is a blend of allowing the child to initiate an activity and having the evaluator present materials or make suggestions. These activities afford the child ample opportunities to demonstrate communicative, motor and play skills. The evaluator is making mental notes throughout the evaluation as to whether the child seems capable of performing a particular task. The child's ability to perform the skills in each domain will determine the starting point for that particular child. Goals are established and are expected to be achieved in 12 week periods. Typically there are two to three goals set in each domain. The evaluator is expected to make assessments of the child's readiness to learn in the initial evaluation period. Goals are made more specific based on the child's perceived rate of acquisition.

So for example, consider two children who have not yet achieved the skill of "functional use of 20 or more approximations of nominals." During the initial evaluation period one child may show a capacity to acquire new approximations whereas the other child may struggle to acquire even one nominal or label. The goals that are set for these two children would consequently not be the same. They both would be working on the same skill but one child might be expected to acquire all 20 words within the designated 12 weeks whereas the other may only be expected to acquire two labels in the same period of time. Thus expectations are set using the realistic capacities that the individual child has demonstrated. The child receives at least four hours of therapist led treatment five days a week. Additionally parents support the ESDM model and treatment goals. Data is taken during every therapeutic session and goals are readjusted if appropriate. At the end of the 12 week period new goals are set and the child's rate of learning may also be reevaluated.

There are four critical components of the ESDM model. The first is teaching language development within a social context. This is a domain in which ESDM developers feel that it is imperative to follow typical development of language. To that end verbal and nonverbal communication are stressed equally and children are expected to be partners in all exchanges. As children are provided with many communicative opportunities during their interactions with another they come to recognize the power communication holds. The communicative partner extends themselves to ensure that every communicative attempt is strongly reinforced.

The next component of the ESDM curriculum is building up complex behaviors. The creators of ESDM recognize that one of the core deficits of autism is in the capacity to integrate multiple neural networks simultaneously. Consequently one skill is never taught in isolation. Rather a few skills may be taught simultaneously within a teaching episode. So for example a child playing with blocks may simultaneously be working on motor skills, eye contact and expressive language.

Next is the idea that an interdisciplinary approach underlies the intervention. This model was created working together with professional from many different disciplines such as clinical psychology, speech, OT and ABA. It incorporates many pre-existing developmental models such as those related to language development, motor development, social-emotional development and the acquisition of self help skills. The interdisciplinary team that contributed to the development of this model also serves as consultants for each case. Typically the direct delivery of services is provided by one main professional. This person works directly with parents and therapy assistants. The team works together under a generalist delivery model and seeks to attain consistency across sessions. The full team of professionals is available to consult with the main professional and the family on an as needed basis.

The final component critical to the ESDM curriculum is the idea of systematic individualization. There are four ways in which each child's treatment is individualized. First there are the goals which are set based on the particular child's deficits and rate of learning. Next are the choice of activities which are based on the child's preferences and interests. The third is the incorporation of the family's values, needs and preferences into the setting of the goals. The fourth is the decision tree which allows the therapist to modify the teaching strategy if it proving to be ineffective. In these cases where little to no progress occurs within a two week time frame systematic changes can be made to the treatment. The therapist can increase reinforcement strength which may be less naturally tied to the activity itself. If necessary, the teaching structure can be altered. This may consist of increasing the number of trials to provide for more opportunities to practice the skill as well as reducing the variability of the teaching situation and increasing the consistency of the child's experiences. Each of these alterations increases the structure and the adult's lead in the therapy session. In the events that none of the above measures improve outcome, then visual supports should be added. These can include video modeling to learn play sequences, PECS for language development and a picture schedule to illustrate a routine. ESDM identifies this as a last resort because a primary goal of this model is to teach children using a natural environment and the above mentioned procedures contradict that aim in that they are not a part of a typical child's natural environment. Rogers and Dawson concede that these measures have value when children with autism are failing to progress but recommend that the therapists keep a watchful eye and fade back to a less structured teaching environment when the child seems ready.

ESDM Teaching Procedures

ESDM uses teaching interventions from three traditional interventions: ABA, PRT and The Denver Model. These were adapted to fit into the revised ESDM model which will also be described.

ABA teaching procedures in ESDM. As described earlier, ESDM incorporated some ABA tenets into their teaching procedures. The following ABA principles are a critical part of the ESDM model: capturing attention, the principle of Antecedent-Behavior-Consequence (ABC), prompting desired behaviors, managing consequences, fading prompts, chaining behaviors, and functional assessment or functional analysis of behavior (Dawson & Rogers, 2010).

PRT teaching procedures in ESDM. Principles from PRT have also been incorporated into the ESDM model. The following PRT objectives are included in the ESDM teaching procedures: reinforcing the child’s attempts, alternating requests for new behaviors with requests for previously acquired skills, reinforcers have a direct relationship to the child’s responses or behavior, taking turns during activities, instructions or other antecedents are delivered clearly, children are given choices and the adult will follow their leads (Dawson & Rogers, 2010).

The Denver model. This was the initial model created by Rogers and Dawson in the mid 1980s. The following principles were developed as part of the original model:

adults modulate and optimize child affect, arousal and attentional state, adults use positive affect throughout session, there is turn taking and dyadic engagement throughout the session, adults respond sensitively to child communication cues, multiple and varied communicative opportunities occur, there is an elaboration of activities, adult language is consistently appropriate developmentally and pragmatically for the child's verbal and nonverbal communicative intent and capacity and transitions are effectively managed. These principles were expanded on when elements of ABA and PRT were later incorporated into this model and it was then renamed the Early Start Denver Model or ESDM.

Therapists using the ESDM model seek to create teaching situations that are as close to typical interactions as possible. Roger's and Dawson's belief is that there is considerable opportunity to reshape the neural networks in a way that allows children with autism to be more responsive to social partners (Dawson & Rogers, 2010). Positive affect is paramount to the treatment as the child needs to be motivated to interact with others. In cases when social interactions are not intrinsically reinforcing, reinforcing items or activities are paired with socializing so that through operant and classical conditioning positive associations will be created with the act of engaging with another. Rogers and Dawson site the developmental research that shows that learning occurs most readily in affect rich interactions with another.

The next tenet of ESDM is to use play as the frame for intervention. Throughout the session the adult and child engage in joint activity routines. These are enacted with and without toys. The adult selects which objects will be available and the child chooses from among these preselected options.

All programs are intensive in nature. This has been found empirically to be a hallmark of all successful interventions and ESDM is no exception. Rogers and Dawson suggest that autism is exacerbated by the cascading effect of the child's failure to benefit from typical social opportunities. By bombarding the child with dyadic interactions the premise is that they will be able to make up for lost time.

Unwanted behaviors are addressed in a primarily behavioral manner. Children are taught a behavior that is appropriate yet incompatible and can serve to replace the unwanted behavior. This allows the therapist to increase rather than decrease the child's repertoire of behaviors.

Finally but importantly, ESDM emphasizes the critical nature of family involvement. Parents are taught interactive skills so that they can continue this much needed therapy throughout the child's waking hours. Having parent involvement is considered a best practice by the National Research Council (NRC, 2001). The ESDM team members do not take for granted how challenging it can be for parents to integrate the ESDM teaching principles into their everyday life. Consequently the ESDM team offers a high level of training and support to parents and invites the parents to participate in setting the goals and developing the curriculum for their child. The more parents are willing to be involved the better. Rogers and Dawson site the developmental literature which stresses the important role parent interaction has on typical development. They also reference the autism attachment literature that implies that autistic children demonstrate variability in the attachment status and that being securely attached is directly related to the sensitivity of the parent (Rogers, Ozonoff, Maslin-Cole, 1993; Sigman & Mundy, 1989). Additionally there is a suggestion that autistic children's attachment security with their parents affects friendship patterns in a similar manner as occurs with typical children (Bauminger, 2008). Rogers and Dawson recognize that parents of autistic children do attempt to initiate with and engage with their children but there is a clear lack of reciprocity which eventually leads to decreased bids. By training parents using a method that is shown to increase responsiveness the ESDM can make these interactions more rewarding and more frequent.

ESDM is one of the first methodologies to incorporate developmental methods that has been studied empirically. At this time eight papers have been published demonstrating the efficacy of this approach (Rogers & Dawson, 2010). The studies have found improvements in symbolic play and social communication (Rogers and Lewis, 1989). The methodology was piloted as the Denver Model originally and the studies were able to demonstrate its efficacy in five independent settings (Rogers, Lewis, & Reis, 1987). In the most recent NIMH supported study, 48 toddlers diagnosed with ASD were randomly assigned to either receive ESDM or the typical community-based treatment. The children were followed for two years and the evaluations done at the end of that two year period showed that the ESDM group scored significantly higher on the Mullen Early Learning Composite scaled scores than the community-based treatment group (Rogers & Dawson, 2010). The overwhelming difference between the two groups was the acquisition of expressive and receptive language (Rogers & Dawson, 2010). This strengthens the notion that ESDM offers an intervention in which language skills will be acquired at a more rapid rate.

Criticisms of ESDM

ESDM is currently designed as an intervention for infancy through 48 months. Although they are currently attempting to expand the model so that it is appropriate for five year olds, there are many older children with autism who continue to require intensive services.

Additionally, the model makes no claims about being able to necessarily help the child with significant speech production issues. They instead recommend working with a speech language professional to address these more specific needs. Although significantly speech impaired children are a minority of the children with autism they are still a subgroup. The ESDM model either requires further expansion to include this population or a different model must be created to serve the needs of these children.

Conclusion

There are numerous models for treating autism but very few of these models have empirical support regarding their efficacy. In the past 20 years some models have begun to combine some of the strong points of ABA with the relational objectives of the more developmental approaches. These treatment models are able to document their success and the increased generalization enjoyed by children using these blended approaches. The integrated theories have not yet expanded to include all age groups and the diverse presentation of all children on the spectrum. The Denver Model, while empirically backed is not meant to be used with children over five. This limits its use to a preschool population.

My thesis will present an alternative integration which is applicable to children with autism. This model is appropriate for use in home programs, socialization programs, as well as schools. My model incorporates a developmental perspective by emphasizing mentalization in every aspect of the intervention for children on the spectrum. Remediation is emphasized but practitioners and family members are encouraged to use a mentalization based approach to increase understanding and increase social connections between the child with autism and others. I will first present the philosophy and the teaching procedures of my model. I will then present case material that will demonstrate how the model is applied as well as illustrate the advantages of this particular integration.

Table 2.
Core Characteristics of Current Models for Treating Autism

	Lead taken by child or therapist	**Primary mechanism of change**	**Level of Intensity:** **I=intensive** (20-40 hrs/week) **M = moderate** (10-20 hrs/week) **L = low intensity** (less than 10hrs/week)
Interpersonal/Developmental Interventions and Treatments			
DIR/ Floortime	Child	Interactive play that encourages child to want to relate to others	I
RDI	Parent/ Therapist	Increase motivation and interest in social relating through specific activities and coaching	M
Option Method Son-Rise	Child	Complete acceptance of the child and his behavior. Intensive one-on-one interaction that occurs in small space with limited distracters aim to slowly	I

		involve child more in our world.	
Skill Based Models			
ABA	Therapist	Traditional behavioral techniques and discrete trial training to teach desired behaviors and skills and to eliminate problematic behaviors	I
PRT	Shared	Increases language and communication through the use of more naturalistic behavioral strategies	M
PECS	Child	Increases interaction and communication through use of pictures as symbols.	L
TEACCH	Therapist	Through use of structure, schedules and visuals skills are taught and transitions are facilitated	I
Fast Forward	Therapist	Language processing is improved through carefully designed software that responds to intermediate levels of success.	M
Integrated Models			
SCERTS		Language and communication goals are addressed through structured approaches similar to naturalistic ABA. Social relatedness and social-emotional reciprocity are taught through DIR/floortime approaches.	I
ESDM	Child	Skills are taught through the design of an individual curriculum following a careful evaluation. Naturalistic behavioral techniques such as shaping, replacement, and redirection are used in conjunction with a more developmental approach to teaching the need for language.	I

Chapter 4: Merit – Mentalization Enhanced Remediation

An Integrated Treatment for Children with Autism

MERIT is an integrated treatment which incorporates elements from behavioral and interpersonal models. One of the challenges in creating an integrated model is achieving a coherent approach which includes aspects of these dominant models. Mentalization offers a theoretical perspective which can be readily integrated with behavioral techniques.   Mentalization offers a way to understand and relate to the child with autism and can play a critical role in informing the treatment.

Mentalization

Mentalization was identified by attachment researchers Peter Fonagy, Miriam Steele, Howard Steele and Mary Target as the ability to understand one's own and the behavior of others in terms of underlying mental states and intentions (Slade, 2005). This capacity is thought to be essential to affect regulation and forging satisfying relationships (Slade, 2005). It is through mentalizing that we are able to attribute meaning to the behaviors of others and recognize that there are underlying desires, beliefs, intentions and emotions that lead others to engage in the behavior that we observe (Gergely, 2003).

The mother plays a critical role in the infant's development of mentalization (Slade, 2005). It is the mother's representation of her child as having beliefs, feelings, intentions and thoughts that lead the child to recognize his own internal states (Slade, 2005).

It is the mother's observations of the moment to moment changes in the child's mental state, and her representation of these first in gesture and action, later in words and play, that is at the heart of sensitive caregiving and is crucial to the child's ultimately developing mentalizing capacities of his own. It is "through the mother's capacity to keep her child in mind" that the child is able to "discover his own mind (Slade, 2005, p.271).

Mentalizing the Idiosyncratic Mind

As stated by Slade, in typical development, this capacity is born out of those earliest experiences of being understood by the mother. The unusual emotional responses, idiosyncratic behavior and compromised language systems of children with autism make this a particularly challenging task for their perplexed parents. Their behavior may be bizarre at times as result of sensory deficits. Some autistic children are described as being tactile defensive, meaning that they find some or all human contact aversive. They may respond to sensory experiences with stereotypic behaviors such as flapping, twirling or fiddling with objects in their hands. Reports of individuals with high functioning autism state that they experience emotional states that are similar to people without autism but that these states are less complex (Grandin, 1995). The triggers for their emotional experiences may be unusual. A child with autism may laugh uncontrollably at something that is not apparent to the rest of us. A tag on the back of their shirt can send a child with autism into a rage. They may experience intense anxiety when a church bell tolls or when the fan on the refrigerator turns on.

In addition to processing difficulties and the odd behaviors that consequently occur, the autistic child also presents with language delays and in some cases the absence of functional language. This prohibits the child with autism from verbally describing his experience to another. The use of gesture is also absent or severely compromised in autism so the parent of the child with autism in some cases must attempt to understand their child without any verbal or gestural communications on the part of the child.

Non-verbal children are unable to express the simplest discomforts. They struggle to indicate preferences and less apparent needs. As a typical child develops language we are provided with another window to understanding their internal states. While children with autism may be the most difficult population to relate to, it is nevertheless essential and transforming for the low functioning child with autism to have the experience of a mentalizing other.

Children with autism also present with a narrow range of interests compared to typical children. This limits the possibility for joint attention, or shared experiences between the child and parent. It is through shared experiences that many parents are presented with opportunities to understand their child’s inner world and these occur infrequently between autistic children and their parents.

Although some parents of children with autism are instinctively better at mentalizing these more unusual emotional responses, most parents become overwhelmed by the behavior and its implications. They are less able to identify the underlying experience of their autistic child. Consequently, the child with autism does not benefit from the experience of having his mother mentalize his inner states. This process, as stated previously, plays a critical role in the development of affect regulation, which unsurprisingly continues to be compromised in older children with autism (Crown, 2009; Slade, 2009).

This is a critical role that the therapist of the autistic child must play: helping the child to understand and make meaning of his intentions, feelings and beliefs. Additionally, the therapist can work with parents to increase their capacity to make meaning of their autistic child's inner world which is frequently confusing, particularly with non-verbal, more poorly regulated children with autism. By using mentalization techniques in the treatment of children with autism we can enrich the relationship between parents and their autistic child. This in turn will have the potential to improve one of the core areas of deficit in autism, theory of mind. This thesis will demonstrate that mentalization must be emphasized as part of a comprehensive treatment plan for autistic children.

An Integrated Model

There is a clear need for an integrated model for treating autism. Drucker acknowledges the importance of considering the neurological substrates of autism in psychodynamically based treatment of children on the spectrum (Drucker, 2009). Her case examples illustrate the errors that can occur when a treatment is too unilaterally focused. Drucker emphasizes her philosophy with the following line of questioning that she suggests therapists ask themselves.

> *It is further essential to think about whether and how to make use of the understanding of the child's psychodynamic functioning at the current moment. Is this a moment for a focused behavioral intervention? An educational intervention—explaining or teaching the child something? A more interpretive comment? An open-ended question? A symbolic response within the play? A non-verbal action?*

> *Some combination of these by one or more of the child's adults? Naturally, these are central technical reflections in any clinical work, but their importance becomes heightened in therapeutic work with children on the autistic spectrum because of the special ego functioning difficulties with which they struggle.*
>
> Drucker, 2009

Drucker appreciates the specific needs of children on the spectrum. These needs become even more pronounced when there is the consideration of remediation and education. This is where the need for an integrated model is the most evident.

In the past ten years two models have emerged that offer therapeutic intervention as well as a method for educating children with autism. These models, SCERTS and ESDM incorporate both behavioral and developmental strategies and are gaining influence and ESDM in particular has achieved the empirical support in randomized controlled studies. SCERTS and ESDM are primarily developmental however and do not incorporate the more remediation based aspects of Applied Behavioral Analysis. I will argue that these behavioral strategies are also critical elements of a successful intervention, particularly with more challenged learners.

My model will demonstrate that a critical component of treating children with autism is to teach them, and behavioral techniques have a strong record of success in that domain. Additionally, not all children benefit equally from a single approach; autism is too heterogeneous. It certainly appears necessary that a comprehensive treatment plan would target joint attention, social orienting (Volkmar, Paul, Klin and Cohen, 2005) and the remediation of the attention deficits particular to individuals with autism. Approaches that exclusively employ strategies adopted from a developmental model tend to be compromised in the areas of consistency, intensity and accountability; the hallmarks of a good ABA program. I will present a model which incorporates the mentalizing aspects of psychodynamic treatment of autism while maintaining a strong application of behavioral theory and remediation techniques.

A comprehensive treatment model must be effective with even the most severely affected children with autism. Mild cases are likely to be responsive to either ABA or DIR. Initially these were among the criticisms of Lovaas' successful outcome studies. Lovaas has been accused of hand picking high functioning toddlers to participate in his ABA outcome studies (Schopler, Short, & Meslow, 1989). Greenspan (1997) has also been able to demonstrate remarkable outcomes with autistic children with mild impairments.

Although there is significant value in emphasizing the importance of the inner life of the child, there is a sacrifice involved with using a less directive approach with some children with autism. Low functioning or very rigid autistic children in particular need to be redirected and need to be taught specific skills which will in turn allow them to begin to relate to others. Consequently, severely and moderately affected children with autism are those who would most benefit from an integrated model. Their success hinges on the remediation of so many compromised areas of functioning and it is only when all of these core deficits are being addressed simultaneously and in a way that is fostering a connection to others that a child can enjoy optimal success.

It is evident that there is a need for a treatment model that is well integrated and cohesive and at the same time inclusive and current with regard to what we know about the brain and neuroplasticity. My model will take into account the individual differences of the child as well as his unique learning style. This will in fact be one of the important ways that a mentalizing stance is used to inform the treatment. While considering the impact of the cognitive deficits and sensory difficulties, mentalization will be emphasized and importance will be placed on working with the family unit to better relate to the child with autism and therefore optimize his outcome.

MERIT

MERIT (Mentalization Enhanced Remediation: an Integrated Treatment) is based on the following premises: that all children require the experience of having their behavior and their underlying feeling states understood and that children with autism are lacking some of the very basic brain functions that allow that experience to be beneficial. I will argue that those brain functions that are lacking are critical for reasons that extend beyond mentalization and can be remediated through intensive and thoughtfully designed interventions which should be highly structured and specific in what they target.

Improving the Child's Organization and Symbolic Capacity

The neurological differences experienced in autism impact the perception and experience of the world. MERIT offers an opportunity to build these capacities through remediation, which in turn increases coping, ability to deal with impulses, and expands understanding and sense of self.

For the child with autism, sensory input from the outside can often not be organized and is completely overwhelming to the nervous system. Many children with autism will avert their gaze or cover their ears in an attempt to reduce the influx of disconnected stimuli. There can be a sense that external input is fragmenting and assaultive. Their sense of cohesiveness is constantly being disrupted as a result of unintegrated environmental stimuli. Repetitive self-stimulation provides continuity of experience which is soothing, stable and reliable.

My model is aimed at increasing the capacity for symbolic representation and integration thereby allowing the child with autism to become more organized. It is not, in my view, a case of either ABA or developmental interventions but rather ABA moving towards and allowing for the success of more developmentally based approaches. Cognitive remediation for the difficulties with abstraction, generalization, and symbolization in autism allows for the development of cognitive structures in the context of a highly dynamic exchange. This is the basis for the development of symbolization and language.

The repetition seen in discrete trial learning is not merely the repetition of cognitive exercises, but is additionally the repetition and re-internalization of experiences with a responsive other. Along a developmental trajectory, a child with autism must build a basic capacity to achieve early concept formation such as same and different, categories and relationships. These are precursors to the development of language and the development of these skills is very organizing to the child with ASD. In the case of autism it is not that the case that these achievements cannot occur; they just fail to happen without appropriate intervention.

Jonathan, a six year old boy with severe autism, was unable to match non-identical pictures (pictures of dogs or crayons or cups). I moved back to having him try to match identical objects. I experimented with pictures of crayons. If the pictures were exact replications he was successful at this task but I soon realized that if the background was different (the crayon was placed on the table rather than the rug) or of the orientation was different, Jonathan did not recognize the crayon as the same crayon. Jonathan practiced matching crayons with a painstakingly simplified approach. Initially I used pictures that were only slightly different. The crayon had the same background and the orientation was only changed slightly. Gradually I was able to introduce more significant differences between the pictures including completely different backgrounds and orientations. He was eventually able to match different colors and brands of crayons and understood that they too were crayons. I was able to teach Jonathan to match other non-identical objects and with each new target he was able to learn the objective with less and less practice. Finally Jonathan was able to match non-identical objects without a practice period. He had achieved a goal that is an important precursor to primitive figurative language.

Imagine the consequence of failing to remediate the skill deficit described above. Would Jonathan have the capacity to recognize his mother if she changed her shirt? If she was in a different context (at school rather than at home)? The relationship between the remediation and skills is complex but critical in optimizing the development of children on the spectrum.

Children with autism are often unable to profit from traditional educational approaches and do not learn readily. They require interventions specifically designed to take into account their unique capacity to learn. Although this observation pertains most notably to the acquisition of language and cognitive skills, it should also be a critical component of any therapy designed to improve an impaired child's ability to socialize, relate and connect to others. The heterogeneous nature of autism means that although all children with autism can be helped by remediation, it is dire that individual differences be taken into consideration. Failure to do so can result in disengagement both from the work and more importantly, from the therapist.

As previously discussed, there are merits to both behavioral and psychodynamic treatment models for treating autism. Neither however is sufficient in itself as a therapeutic approach. Integrating the two dominant treatment models presents with serious obstacles. The dominant methodologies developed from two very different philosophies and they frequently contradict one another at times in terms of how the intervention should proceed and how to interpret the behavior of the child. My model attempts to accomplish this integration by continuing to emphasize the structured and hierarchical teaching that is a crucial component of remediation while incorporating a mentalizing approach in all interactions with the child. The mentalizing approach then in turn informs the remediation. Additionally, some of the principles behind mentalization-based interventions are incorporated into my integrated model.

Mentalization plays a pivotal role in the treatment in that it is an ongoing challenge to make sense of the inner life of a child with autism. It is equally important that the child, despite their limited capacity to understand language and gestures, feels understood. Some of the ways in which the child feels "understood" will come from language, gesture and visuals. Additionally, the work itself should evolve in such a way that it reflects an understanding of the child. Even if the child has a limited ability, initially, to process the world around them, presumably they can take in the experience of being less frustrated than they had been in their previous interactions with others. They can begin to trust that they can be successful. The nature of the relationship can be one of trust that nothing will be asked of this child that they cannot do (with some help). Ideally these interventions begin to remediate some of the areas of deficit which make it difficult to benefit from interactions with another or to process communication. The work builds upon itself. With each passing week the child develops more skills which allow him to better engage in social exchanges, but in the meantime the relationship, which is critical to the work, is continually growing.

At a certain point, when the child has developed some of the core skills necessary to learn, they can begin to work on the specific skills that are so closely linked to the capacity to mentalize. There is not a clear temporal distinction between learning basic skills such as language, visual attention, imitation, attending and emotional processing and improving some of the capacities that have been linked to theory of mind and mentalization. In fact there is considerable overlap between these teachings. Generally however the basic skills are taught early in the treatment, and the factors that have been closely associated with the capacity to mentalize come later. For the purposes of organization I will first discuss the beginnings of treatment and I will then talk about interventions specifically designed to target the capacity to mentalize. Finally I will discuss working with parents to use the MERIT model in their interactions with their autistic child.

Remediation

The remediation aspect of MERIT is distinct from developmental programs in that I will be directive. I have an agenda and that is to remediate the areas of core deficit exhibited by that particular child. All of the remediation-based interventions have an overlay of mentalization which directs my work and influences the ways in which I respond to the child. As I come to understand how this child thinks, learns and even how they cope with anxiety, I incorporate this into my every interaction with them. In fact this understanding will be a powerful guide to the therapy as well as a tremendous source of reinforcement and motivation for the child.

I am continually aware of their deficits. When I am working with a visual child, I incorporate gestures and exaggerate my expressions. If I am working with children who tend to rely on auditory input I might sing to them and emphasize the use of prosody and intonation. This type of variability that enlivens language can serve as an aid to the child with profound language deficits. These accommodations enable the child with autism to better understand me, and more importantly, to understand my emotional response. I have encouraged many children with autism by increasing anticipation as they attempt to show me something that they have learned. We are both on the edges of our seats and they feel that we are equally as emotionally vested in their success. The child glows as they emit a correct response and together we celebrate their accomplishment.

Initial Phase of Treatment

In the initial phases of treatment I engage in mentalization in order to understand and forge a relationship with the child. I simultaneously begin remediation. I place demands on the child within our first meeting. I play with them, talk with their parents and watch them engage in preferred activities. I then ask them to engage in a more structured task with me. If a child seems incapable of doing some small activity that I believe is within their abilities, I help them. Using the ABA concept of reinforcement, I show them that although what I would like them to do may not be preferable, we will do an activity that they prefer immediately upon completion of my activity. So if they put a puzzle piece in, then we will watch the Thomas Train DVD. If they scribble with a crayon then we will ride the elevator. It is amazing how quickly children with autism come to understand this. Typical children are motivated to learn and show off new skills because they are socially connected to others. They want to please their parent, their caregivers, or their teachers. My goal is to get children with autism to that place as well but I recognize that initially they may be too disorganized and too disconnected. I am confident they will get there.

So in the initial phases of treatment reinforcement will be based on preferred activities, foods or toys. Initially the schedule of reinforcement will be more frequent so the child with autism comes to understand the expectation and the system. Most children with autism can quickly move to a token system. This is a system in which the child earns tokens for emitting correct responses. Once the child has earned a predetermined number tokens, they receive the agreed upon reward. These reinforcement systems are motivating to children with autism for two reasons. They continue to be reinforced with preferred items when a predetermined number of tokens have been received and they can see how many responses are expected. When working on a difficult task, such as verbal imitation for the autistic child with apraxia, the token board provides a clear visual for when they will have completed the task. It is hard work for these children. You can see it in their faces. They are summoning all that they can remember about how to properly pronounce a word and they are looking carefully at my mouth in order to imitate my movements. Occasionally their eyes dart to the token board or a check off sheet I sometimes use. “How many more?” they would ask if they could verbalize this question. The visual of the tokens provides an answer. It is not too dissimilar from a person in occupational therapy struggling to regain motor skills. Each step might take all they have in terms of effort and the physical therapist would be very clear about her expectation. Children with autism also need clear information about the expectation and in actuality these very behavioral techniques are providing the child with autism with an invaluable communication that reflects an understanding about the child. This system acknowledges how difficult it would be to work without an end in sight and most importantly it is a communication they can comprehend. As the child with autism progresses, modification can be made in terms of tokens and the types of reinforcement used. I will always move away from food and videos as quickly as possible as other preferred activities are more social and valuable in terms of expanding leisure skills.

By teaching and encouraging skills that enhance joint attention, I can reinforce the child while simultaneously strengthening our connection and their relational skills. It is through strategic implementation of a hierarchy of reinforcement that the work evolves beyond the classic ABA stance of evaluating reinforcers, and using token boards. I can instead engage in preferred activities or play with the child in between and then say “it’s time to do some work.” It is at this phase of the treatment that the teaching begins to mirror more typical teaching of a young child. Parents might engage with their child and occasionally pause to teach them something. One of the primary differences however, is that most children with autism need to be taught in a very specific way. Depending on the child’s needs I create a list of goals. Each of these goals is translated into a program and each program has multiple steps. I incorporate traditional ABA programs that target areas such as verbal imitation, visual imitation, fine motor tasks and receptive language skills. I design programs using structure, hierarchical teaching, visual support and contrived reinforcement in the initial phases of therapy. Each of these behavioral concepts is valuable both for the remediation that is enables a therapist to provide as well the message that this methodology can communicate to the child if done from a mentalizing stance.

The Value of Structure

The structure of applied behavioral analysis serves to organize many children on the autistic spectrum. They are taught language and leisure skills and through this learning they are able to relinquish some of their maladaptive behaviors. Many children with autism engage in what have historically been referred to as “self-stimulating behaviors.” These behaviors may have been misnamed as it appears that children with autism actually use these behaviors to reduce anxiety and to calm an overstimulated nervous system (Rapin, 2001). Remediation allows children with autism an opportunity to engage in an activity (structured learning) that is incompatible with many of their “self-stimulating behaviors.” The child that has learned to draw pictures cannot flap as they draw. The child that has learned to have a conversation is less likely to moan and shriek as they do so. The value of teaching children with autism goes beyond replacing problematic behaviors, or even beyond the value of the skill learned (as precious as that might be). These children’s brains are becoming more organized. Their self esteem is increasing as they begin to realize that they *are* capable, that they *can* learn and maybe most importantly that there is someone teaching them that believes that and is helping them to achieve these goals.

Hierarchical Teaching

Hierarchical teaching is one of the most critical components of ABA. As described earlier, hierarchical teaching involves breaking down a task into its component parts. This may sound obvious but unless you are experienced in this work you may not realize how much goes into accomplishing tasks that we take for granted. It is difficult to understand how many small fine motor movements go into buttoning a jacket until you have attempted to teach this skill to a motorically challenged child with autism. This child may very well have language processing deficits and you are left teaching a child a skill that they may find overwhelming without the use of language. I button my own buttons and break down the task into its component parts. "What is it we do when we button?" I ask myself. We grab in with a pincher grasp, we find the hole (usually with the other hand), we guide the button towards the hole, we manipulate the material around it until we feel that it has come all the way through and then we are done. From there I have to take into account which aspects of what I do to button will have to be modified for this child. This child is a visual learner so I am going to encourage them to look at first. Look for the button to pinch it. Look for it on the other side (manipulating the material will be too difficult). Pinch it on the other side and pull it through. I will only expect the child to do one of these steps at a time independently. I will hand over hand guide them to do the rest. They are learning even as I prompt them. They are beginning to get the feel of buttoning even if I am still helping them. They are successful and each day they are a little better at the step they are working at than the day before. Eventually when they have mastered the first step we move on. Now they are pinching the button and putting it through the hole independently (while grasping the material with their other hand). I am still helping them to pinch it on the other side and pull it through. Upon mastering the second step they begin finding the button on the other side and when that is learned they pull it through. I have never seen a child with autism who did not find this incredibly satisfying to learn. Sometimes it has taken months to teach, but when they can use that skill to button their jacket or get dressed independently one can see its value goes beyond increasing daily living skills. This child sees himself as more competent. The faith I had in his capacity to learn is beginning to become a faith he has in himself.

The creation of these hierarchies applies to all areas of learning. The child with autism will need language, leisure, social, play, cognitive, motor and daily living skills broken down into their component parts. I will also break down skills that are crucial to learning to learn. I will teach imitation, tracking and attention skills. I will move around a room and ask a verbal child, “What did I do?” thus increasing their capacity to take in the world around them. I will have them imitate me and then imitate another child. I will have them learn to listen to a story for first a minute, then three minutes, then five minutes. Then I will have them practice listening to a story in a small group.

These interventions require that I be very analytical with regard to each child’s deficits. The program lists allow multiple therapists to work on each area and the graphing and tracking provide evidence that a targeted skill is in fact learned before moving on the next skill.

Throughout this aspect of the child’s treatment the relationship plays a critical role in managing behaviors. In thinking about the child’s unique experience I can better understand maladaptive responses and help them to better understand their own behavior. I avoid using the behavioral response of extinction as I believe that it is antithetical to design an intervention that would give a child with autism repeated experiences of having their distress ignored. Children with autism struggle with the concept that it is worthwhile to communicate their needs to another person. This being the case, there are significant detrimental effects that can evolve from behavioral extinction of distress. A child with autism is being deprived of the experience of having their feeling states acknowledged-- which is a precursor to acknowledging feeling states in others. This mutual acknowledgement of emotions lays the groundwork for the capacity to mentalize.

Increasing Relatedness

Part of being able to incorporate mentalization-based treatment for children with autism is that it requires some level of expertise. Working and playing with a child offer critical opportunities to make sense of a young person's inner world-- and to model these mentalization-based interactions for the parents. This intimate relationship, which involves learning a child's likes and dislikes, as well as challenges and strengths, is, in fact, critical in using mentalization to treat autism.

I have a connection with these children that facilitates the therapeutic process. Throughout my work with a child I remain empathic and playful. The children look forward to the time we spend together and are thereby partners in the process of their therapy. They are rewarded in most cases by interactive experiences with me, which in turn addresses one of their primary goals: to increase their capacity and willingness to relate. It is important that they find our relationship reinforcing because a positive experience emphasizes that interactions are worthwhile and preferable to social withdrawal. It is also critical that they experience their therapist as empathic. This does not mean that I do not place demands or provide structure but it means that I acknowledge their feeling states; if they cry, they know I will acknowledge their unhappiness. I am in a constant state of thinking about how they think and how they use defenses. I am thinking about them psychologically and using my psychological understanding of them to organize their tasks which enables them to be optimally motivated.

There are four areas of development which are related to the capacity to mentalize. These developmental achievements are talking, pretend play, interactions with a peer group and a sense of agency. From the initial phases of treatment, aspects of these skills are being addressed. These areas of development tend to pose significant challenges for the child with autism and aspects of ABA (hierarchical teaching, structure, visual aids and reinforcement) can be incorporated, in order to increase the likelihood that the child with autism will achieve measurable gains in each area.

Although I have repeatedly emphasized that children with autism do not follow the same developmental trajectory or learn as readily as typical children, there are advantages to incorporating some of what we know occurs in typical development. It follows that the factors that are important and play a role in the typical development of mentalization should be emphasized when creating interventions for children on the spectrum. Modifying what we know about mentalization based interventions allows us to apply this model to children on the spectrum.

Fonagy describes treating patients with impaired mentalizing capacity as "establishing the therapeutic conditions that promote mentalizing in a boot-strapping process which enables patients to build on whatever mentalizing skills they have already developed so as to learn how to mentalize more consistently and more effectively." (Allen, Fonagy and Bateman, 2009, p.6)

This therapeutic suggestion is also applicable to autistic children. The most significant difference between non-autistic patients and children with autism is that those suffering from autism will tend to possess very few, if any, mentalizing skills. However, the treatment remains the same. Clinicians must evaluate what an autistic child is capable of with regard to mentalizing and begin their work at that level, however rudimentary it may be.

Fonagy and his colleagues describe three mediational models that they identify as accelerating “the mentalizing quality of self organization” (Fonagy et al., 2004, p.49). These are: pretend play, talking, and interacting with peers (Fonagy et al, 2004). I have added to this list “development of agency.” These developmental practices play a pivotal role in an emerging capacity to mentalize.

Pretend Play

Empirical studies have shown that children who engage in more pretend play--and specifically joint pretend play--when they are three years old, show superior emotional understanding as well as a capacity to infer what is in another person’s mind (Astington & Jenkins, 1995; Taylor, Gerow & Carlson, 1993; Youngblade and Dunn, 1995). Additionally there is evidence that children in secure attachments in infancy are more likely to demonstrate engagement in fantasy play than children with avoidant attachment (Main, Kaplan & Cassidy, 1985).

These findings suggest that the capacity to engage in pretend play, particularly with another, encourages the understanding of mental states (Fonagy et al., 2004). Pretend play offers a child an opportunity to suspend reality and enter into a shared world with another. There is a connection between the pretenders and an implicit understanding that they are entering into a shared state of mind. This experience fosters the sense that the partners in pretend understand each other's mind-set. "Pretending requires a mental stance involving the symbolic transformation of reality in the presence of and with a view to the mind of another" (Fonagy et al., 2002).

Many children with autism have not yet developed the capacity to pretend. Some have not developed symbolism, which is necessary in pretending; others find pretend play disconcerting because they are unable to distinguish reality from pretend and this very literal stance makes pretending quite frightening. Incorporating some hierarchical structure and a more behavioral analysis of what it means to pretend can offer these children opportunities to pretend within a zone of comfort that can then be expanded.

Using techniques adopted from behavioral and remediation based approaches, it is useful to analyze what it means to pretend. At times children pretend by taking on the role of another. They might be a mommy, a dinosaur, or a little baby. However, autistic children may find this style of play to be foreign. But by breaking down the task, and introducing it in a way that does not threaten their current capacity to symbolize, children with autism can successfully pretend.

Children with autism need to experiment with the experience of pretending. Children capable of mentalizing have "an inquisitive, curious open minded and even playful interest in the mental states in self and others" (Fonagy et al,. 2002). Playfulness can enrich the understanding of mental states (Fonagy et al., 2002). The humorous nature of playful interactions captures the interest of children and they are intrigued and attempt to determine the real versus pretend aspect of the interaction. Thus the "playful interest" of the mental states of others can be encouraged through well designed interactions.

Fonagy describes the treatment of a little boy who presented with autistic symptomology. He was rigid, perseverative and used language in an idiosyncratic way. Once, while playing a board game with the child, Fonagy pretended to cry when he lost. The boy was very uncomfortable and demanded that Fonagy stop the crying at once. “You are not a baby!” the boy said and continued to look at Fonagy with fearful fascination. Fonagy explained that he was only *pretending* to cry. Fonagy did stop pretend-crying that day, but repeated it a few weeks later. This time the boy was much more able to tolerate Fonagy’s performance and they discussed the behavior which initially had made the boy so uncomfortable. Fonagy explained that although he was disappointed that he did not win the game, he was not *really* crying. In the next session, the boy actually asked Fonagy, “Are you going to cry again?” Through repeated exposures to this very introductory experience with *as if* states, the boy became increasingly more comfortable with pretending. He too began to pretend within their sessions until he too was capable of rich and imaginative pretend play. Fonagy sensed the slow nature in which pretending should be introduced and by respecting the boy’s limited capacity at the start of the treatment, he was able to introduce pretending without overwhelming his patient. Introducing an autistic child into the world of pretend play--within their zone of proximal development—is a method of encouraging them to explore the symbolism of pretending within a safe and comfortable context.

Talking

The second mediating factor in the development of the capacity to mentalize is talking. Language was described as a prelude to mentalization by P.K. Smith (Smith,

1996) who emphasized that the use of codes or words for mental states is pivotal in the development of mind reading abilities (Smith, 1996).

Harris (1996) also emphasized the critical role language plays in the development of the capacity to mentalize. This researcher proposed that the experience of being involved in a conversation makes children aware of the fact that people are receivers and providers of information, even when the conversation does not refer to mental states (Harris, 1996). Harris identified that the sharing of past events that were experienced in the absence of the conversational partner, the ability to deny or affirm what has been said and the ability of a conversational partner to fill in omissions and repair misfires, all implied that each conversational participant differed from the other in what they knew or believed about a particular topic (Harris, 1996).

In typical childhood development these linguistic capacities are taken for granted. For some children with autism however, the development of spoken language is a milestone that is never achieved. These children have not acquired the “code” that Smith identifies as being “crucial” to the development of the capacity to mentalize.

Non-verbal autistic children and those who are extremely verbally delayed can use alternative approaches to communicate. There are systems including PECS and augmentative communicative devices which allow some non-verbal children to communicate.

It is critical, though, that the communication with non-verbal autistic children include some of the characteristics cited by Harris. In many instances, when communication is taught to a non-verbal autistic child it is designed around making requests. It is important however that the research based findings regarding the relationship between language and mentalization be incorporated into the treatment model for teaching language to children with autism. In the next chapter, I will discuss some of the specific ways that I teach children with autism to achieve mentalization based communication goals.

There appears to be a relationship between talking with young children about feelings and the development of reflective functioning (Brown et al. 1996; Dunn and Brown, 1993). Enhanced emotion understanding was observed in preschoolers whose mothers explained their emotional states (Denham et al., 1994). Mentalizing performance was observed to improve in one study when there was an opportunity to discuss mental states (Appleton and Reddy, 1996).

Non-verbal children with autism can benefit from having parents and therapists share on a simple level their feelings and their reasoning. Parents and therapists should be encouraged to modify their verbal communication so it is as appropriate as possible for a particular child. Simple emotional expressions and clear causal explanations can allow a child with autism to begin to forge an understanding of the thoughts and feelings of another.

Some children with autism require remediation in regard to understanding emotions or emotional states. This is where the hierarchical and analytic nature of remediative approaches is useful. Autistic children can be taught--through behavioral interventions--to recognize emotional labels, expressions and to use these terms expressively (either verbally or with an alternative system). Once they have been taught elemental skills, they subsequently can participate in a more meaningful way, for example, in exchanges regarding feeling states.

Peer Group Interaction

The next factor that Fonagy identified as an important mediator in the development of the capacity to mentalize is peer group interactions (Fonagy et al., 2002). Research has shown that relations with peers and siblings, particularly older peers and siblings, enhances theory of mind performance (Jenkins and Astington, 1996; Perner et al., 1994; Ruffman et al., 1998; Brown et al., 1996; Lewis et al., 1996). Fonagy adds "Peer group interaction should increase the opportunities that children have for simulation, imagining what they would see, think, feel and so on if they were in another person's situation" (Fonagy et al., 2002). This is one of the most challenging aspects of working with children with autism: helping them to connect with other children. The factors that make peer interactions difficult are multi-determined. Although the social inclination of children with autism varies, it is generally quite impaired. ASD children will vary from those that are completely withdrawn and seem uninterested in any social interaction, to those who desperately want to engage with others but don't know how.

Some researchers conceptualize an autistic child's social withdrawal as defensive (Mahler, 1952). Autistic children have been characterized as feeling overwhelmed in social situations. This concept has gained support through the revelations and autobiographies written by high functioning individuals on the spectrum (Grandin, 1995). If we acknowledge that at least some portion of an autistic child's inability to socialize with peers comes from an uncertainty about how to proceed, we will be able to begin to help autistic children to be more successful in this domain.

Children with autism are drawn to systems which they find predictable and therefore comforting. This knowledge about the autistic mind should inform the treatment. By initially designing systems around play with peers, children with autism can be successful and this success encourages future interactions. The specific system will depend on the capacity of each autistic child to communicate, socialize and play. Early on, the “peer interaction” might be comprised of requesting puzzle pieces from a friend. The non-verbal child can do this with pictures or PECS (Picture Exchange Communication System). By making requests from another child and having those requests responded to appropriately, the child with autism will begin to recognize that there are valuable (reinforcing) interactions that can occur with other children.

Gross motor play is another wonderful domain in which meaningful interactions can be facilitated with peers. Through play that includes popping bubbles, jumping on a trampoline and trying to keep balloons afloat, children with autism can enjoy experiences of heightened positive affect that are conducive to establishing joint attention. It is in these states that an autistic child will be most inclined to recognize that they are sharing an experience and a feeling state with another.

Developing a Sense of Agency

Additionally, mentalizing experiences are “intertwined with the development of agency which is intertwined with a sense of self and others” (Allen, Fonagy & Bateman, 2008, p.75). This development of a sense of agency is one of my primary goals in working with children on the spectrum. It is through increasing their competence and their executive functioning skills that they become capable of planning, engaging and sharing in active experiences with another. I will often ask the children I work with, to share their plan with me during times when they are free to choose. “What’s next?” or “What would you like to do now?” This increases their capacity to plan and although they may remain dependent on me to provide that structure for them initially, they begin over time to internalize a more organized model for occupying themselves.

The responses that I receive from the children I work with vary. More verbal children may respond with an activity (or two or three) that they are interested in doing. My goal with them is to help them to select one, talk about what we will need to do that activity and to get them thinking about any variations they might want to explore. They plan with me and make decisions and then we together, execute their plan.

Less verbal children might respond with a word and I will help them to expand their communications and non-verbal children may simply respond with a glance. I make visual supports to help the less verbal children. I create a choice board and during free play time I will show them some ideas for activities they might want to engage in. I want the activities to be appealing and I want them to stay connected to me, as we together engage in their choice. Following that philosophy I will not offer choices that the child doesn't enjoy for this part of our work. I think that leisure activities are critical to expand joint attention and communicative intent. During this portion of the therapeutic intervention, the child has to be engaged. It is through the development of a sense of agency that the child will begin to realize their unique sense of self.

Implementing MERIT

An effective therapist examines the breakdowns in autistic children and seeks to make sense of how the child thinks, feels and learns. They try to understand why the non-verbal child is screaming or what is gained by stereotypies. This may not always be apparent, or an easy process, but it is critical if we hope to enhance their emotional understanding of themselves and others. By ascertaining each child's neuropsychological profile and including it in the appropriate design of interventions, each child with autism can be expected to make optimal gains.

Understanding how a child with autism thinks and feels involves a certain amount of intuiting, but the more you have seen a certain type of behavior among many children, the easier it is to mentalize. In looking for patterns, a therapist can compare one pattern with another and in essence be testing a hypothesis as to how a child is making sense of the world. This process involves observing a constellation of behaviors and comparing them to everything else you know about this child. A therapist must pose the question: How is this particular brain processing information? A therapist's job is to put him or herself in a child's place and to try to understand what it is the child is experiencing. A therapist must be able to determine the most constructive experiences to help a child with autism learn and be able to relate.

In the initial phases of treatment the most critical goals are helping the child to regulate and establishing trust in the relationship. Most children with autism tend to be poorly regulated. This may be indicated by rapid and unpredictable shifts in mood, frequent tantrums, aggressive acts and even self-injurious behaviors. Many autistic children in the initial stages of treatment are internally driven and are resistant to having external demands placed on them. They have their own agenda that they are rigidly adhering to and resist disruptions in their routine.

The remediation based aspect of A.B.A. sets out to put structure in place and begin working on the areas of core deficit which leave these children so reliant on their maladaptive coping strategies. The child with autism may be very resistant to this change. This is when it is critical that the therapist be both thoughtful about the experience of the child but clear about the expectations. The therapist is setting boundaries which are a part of typical development. Children with autism may express anxiety about beginning the structured work of remediation but I have never met a child who wasn't glad to have learned to speak or communicate with others. These interventions are in their best interests but they can be put forth in a way the therapist remains connected to the child but is firm about expectations.

In order to communicate with the child in the early stages of treatment, these communications may have to be modified. For instance if the child has a language processing issue, it is necessary that communication be conveyed visually. Token systems can be very effective in allowing children to understand the expectation and extend beyond a one-on-one reinforcement ratio (being reinforced for each trial). The expectation may be that the child imitates a gross motor movement (a precursor to being able to imitate those around him). For example in a three-token system, the instructor can show the child that if they imitate three times, they can engage in a preferred activity or in other words be reinforced. This message can be conveyed with three stickers or three tokens. Each time the child successfully performs the activity they will receive a token or sticker to reward a successful response as well as to indicate that they are getting closer to completion and being tangibly reinforced. The first attempt to use a token system may be very difficult but each successive attempt will be easier than the one that preceded it. The child will begin to develop trust in the therapist that their communication or promise (we will do this three times and you can engage in your preferred activity) will be upheld.

Systems such as these are not unique to children with autism. There are many situations in life which provide us with an indication of when something will be complete. We may look ahead when reading something less interesting to see how many more pages are left. We might look at the time left on the treadmill when we set out to run for a designated period of time. Many school children look at the clock near the end of the day to see how much time is left before dismissal. In essence a token system mirrors these processes. We are acknowledging that children with autism are doing hard work and we are simply trying to increase motivation but at the same time make it clear when they will have completed a task.

There is a trust that begins to evolve through the work and this occurs in part as the child begins to realize that the instructor will not ask the child to do something that he is incapable of doing. In behavioral terms there is a concept known as “prompt fading.” This implies that the instructor may initially provide a very high level of prompt or support to ensure success. Returning to the example of clapping hands, as the child begins to understand what is expected of him and what the motor pattern feels like when you attempt to imitate that particular action, the therapist can fade back their level of prompt. So initially, she may clap the child’s hands for him and then as he begins to understand what is expected of him and how to accomplish that, the level of prompt will be reduced. The next step may be setting the child’s hands up in a clapping position and then later just touching the child’s elbows.

To fade out prompts effectively, the therapist must be skilled at intuiting the needs of the child. Some children may require no assistance at all in order to be successful in such an activity while others require assistance that is quickly faded and still others will require assistance for some time. The therapist can also assess the type of intervention or prompt that would be most helpful to a particular child. Some children might find imitating actions challenging because of their difficulty attending to the visual information being presented. A child with these particular issues would be best served by an intervention which drew their attention to the visual demonstration (perhaps waiting until the child is looking or attracting their visual attention prior to engaging in the action). Other children may have difficulty translating what they have observed into a message that allows them to imitate the movement.

One such child had a very poor capacity to imitate gross motor activities. I observed as he watched me carefully but repeatedly engaged in a different motor response than the one I had done. This three year old was particularly attracted to language and words and so I put in an intermediate step of asking him what it was I was doing. He responded “clapping hands.” I encouraged him, “so you do it.” He quickly began clapping. He was then able to imitate five different actions without pause. Helping him to translate the visual into verbal and to use self talk to help him know what to tell his body to do helped him significantly. Although this additional step helped the boy mentioned such an intervention would be an unnecessary obstacle for many other children with autism. This illustrates the importance of designing interventions that are specific to the strengths and challenges of the particular child.

Therapist and Parents: Complementary Roles

“Mentalizing begets mentalizing and non-mentalizing begets non-mentalizing” (Allen et al, 2002, p.22). This commentary by Allen and colleagues promotes the value of having a mentalizing model and the experience of having others engage in mentalization with you. It is through this experience that the child first begins to realize his own internal states and eventually those of the other.

An effective model for treating autism empowers parents and teaches them how to better understand and relate to the child with autism. Traditional ABA successfully remediates the core deficits of autism, but there are detrimental effects on how the parents perceive their child. ABA tends to teach parents ways of interacting with their child which at times are antithetical to typical parenting. Parents should be encouraged to imagine the inner world of their child and be encouraged to explore how certain experiences may leave their child feeling.

It is profoundly disempowering to have “experts” come in and claim to have all of the answers to “saving” the child with autism. Many parents are convinced to cooperate through fear, as therapists will tell them that they must rigidly comply or risk losing their child to autism. They will imply that there is no time for compassion.

Sarah, the mother of a two year old girl with autism, shared her story. Her daughter, Ruby was crying for 20 minutes straight one afternoon while the team of therapists was working with her. Sarah went into Ruby’s room and when Ruby held her arms out to her, Sarah gave her a hug. The ABA team leader was furious. She felt that the mother had “undone” much of their hard work by “reinforcing” Ruby’s crying behavior. When everyone else had left the team leader approached the mother and said, “Sarah, do you believe in ABA?” Sarah said that the therapist was very serious and very concerned and the question was posed as if she was asking, “Do you believe in God?” Many parents have described having ABA intervention for their child as incredibly disempowering. They end up in the role of the administrator of their children’s services and when they do spend time with their autistic child they are generally at a loss as to how to interact with them.

Mentalizing, which comes naturally to most parents, has been discouraged and even portrayed as a dangerous endeavor which will undo the benefits of ABA. Some parents receive “parent training” and in the case of parents that adhere to the strict ABA protocol; their child enjoys few, if any, mentalizing experiences.

Parents need to be encouraged to engage in mentalization with their autistic child. The experiences of communicating with another and developing a sense of agency need to be a part of every child’s experience within their family. In the cases where these goals are not easily incorporated into parents’ interactions with their child, creative interventions can be designed. These will enable children with autism, particularly low functioning children with autism, to achieve these goals of increased communication and a sense of agency. Expanding the notion of what communication can accomplish, persuades the non-verbal child with autism to express himself. I will encourage parents of non-verbal children with autism to present choices, even when their child is not independently demonstrating a preference.

One little girl I worked with hated wearing certain articles of clothing. I asked her mother what she likes to wear. Her mother confessed that she didn’t know because she had never asked her. We began putting out two outfits daily and letting her choose which one she would prefer to wear. By encouraging her to be communicative about her preferences we gained insights into her likes and dislikes. We came to learn that she hated to wear jeans and loved to wear leggings and that her kitty shirt was her favorite.

A boy I worked with loved food and would eat any meal that was put before him. I asked his mother what his favorite dinner was. She admitted that she had no idea. He ate whatever was put in front of him so it was difficult to ascertain. We created a visual menu and began asking him (on certain nights when it was realistic) what he would like for dinner. It was soon obvious that his favorite dinner was pasta and meatballs.

What was accomplished by these interventions was more than allowing the little girl to wear her kitty shirt and the boy to eat his favorite meal. Both of these children took critical steps towards developing a sense of agency and increase their perceived value of communicative intent. It was clear to them that someone else was interested in their thoughts and preferences. Despite their lack of spoken language, their mother had a way of asking them about what they thought. Their inner thoughts could be understood by someone and consequently, responded to. These exchanges are a ubiquitous part of typical development but sometimes fall by the wayside and fail to occur with non-verbal children on the spectrum. Some children may require modifications in order to have these exchanges, but developmentally they are priceless.

When working with parents to incorporate mentalizing strategies, a skilled therapist must help parents identify the difference between understanding and being reflective about the thoughts and feelings of their autistic child and enabling the child to stagnate or regress. I have encountered parents who have sought to find commonalities between themselves and their child with autism and then used those alliances to defend the child’s behavior and thereby limit their progress. Other parents misunderstand that mentalizing means sympathizing and become overwhelmed with sympathy for their autistic child as they attempt to understand the child’s experience. While some of these responses are understandable, they are not helpful and limit the child's growth. The MERIT therapist must help parents to understand their child's experience without becoming overwhelmed.

Finally, parents can be helped to include some typical parenting strategies with adaptations. These adaptations might include the manner in which they communicate with their child and evaluating where the child is developmentally and allowing that to inform their interactions. These interactions might be unusual considering the child's chronological age, but developmentally quite appropriate.

For example, a child with significant developmental delays needs to be afforded a longer window of the initial experiences of having a caregiver speak to him without receiving a verbal response. A mother instinctively prattles on to her baby about his day and his emotional states and his interests but very soon the mother is reinforced with her baby's gaze. Soon after that, she will be rewarded for her chatter with her child's coos and the beginnings of speech. The baby is in a constant state of evolving and the mother feels the continual growth in her baby's capacity to relate.

Imagine how much of life goes by unexplained to a child with significant receptive language limitations. They cannot enjoy the benefit of having a mother prattle on about what they are going to do on a particular day. They cannot be reassured, "we're almost done…and then we'll go home." Part of helping a parent to engage in mentalization with a child with limited receptive language involves creating modifications that allow communication to be visual or gestural. Although this can be challenging at times it is a critical component in reducing frustration and promoting communication with significant others.

In the case of moderate to severe autism, there may be years and years without eye contact or spoken language. It is a challenge for many parents to maintain developmentally appropriate verbalizations with a child who does not seem capable of benefitting from such a communication. In some cases, the development of these capacities is just mildly delayed. Other children may have more significant delays, but can benefit from appropriate interventions and acquire some capacity to speak--and eventually to conceptualize the mind of another. And then there are those children who are the most severely impaired. They have no capacity for expressive communication and are cognitively impaired as well as autistic. It is my argument that these children most especially need the people in their lives to communicate with them about their likes and dislikes and emotional states. Children with mild or moderate autism need these experiences because they derive typical--albeit somewhat compromised and delayed--benefits from the interactions. But for severely autistic children these experiences are crucial because such communication will most likely foster the beginnings of a sense of self which in these cases is so significantly impaired. These experiences of (initially one-way) communication allow us to help these children who have so much difficulty regulating have the best possible opportunity to learn to regulate with a significant other. In turn, these experiences foster a sense of attachment and appropriate dependence on others that are critical goals in the treatment of autistic children.

Working with parents of autistic children and allowing them to observe therapists at work with their child enhances the parent-child dyad. Therapists can model appropriate interactions that incorporate mentalization while considering the developmental stage of the autistic child. Much can be learned from specific interactions.

Following are some of the interactions and interventions that I have designed using the MERIT model. They exemplify the strength of an integrated model and will further clarify how this model is applied in the treatment of autistic children.

Chapter 6: Case Vignettes

The following case vignettes exemplify the need for an integrated approach in the treatment of autism, such as MERIT. These cases illustrate the fact that children with autism benefit from a model that incorporates remediation, hierarchical teaching and a mentalizing approach. The balance with which these aspects of the treatment are implemented is determined by the specific needs of the child. This initial assessment of the child is part of the process of mentalizing. The relationship between me and the child is pivotal to the treatment. It is through interpersonal interactions that I come to understand the child's internal world and through our relationship that the child is able to begin to regulate. In the early stages of the treatment, I will set out to understand how a particular child on the spectrum makes sense of the world around them and how their specific constellation of neurological deficits impedes that process. The relationship I have with each child is pivotal in the treatment and it is through interpersonal interactions that I come to understand their internal world.

I need to analyze for example, whether language processing deficits, anxiety, or the child's inability to comprehend abstract concepts are factors that are individually or in conjunction interfering with the child's progress. I then carefully devise the intervention around that interpretation. More structured remediation allows skills to emerge that benefit the child. Children with autism tend to become more organized and better regulated as a result of the acquisition of skills, particularly those that are concentrated on the development of functional communication. There are measurable cognitive improvements which in turn increase the possibility that the child with autism will learn incidentally. These newfound skills allow them to take better advantage of social interactions.

Priorities then shift to socialization and pretend play. Children can learn skills in each of these domains more readily as a result of the interventions that have already occurred. Now children are more able to work on skills that are closely tied with the capacity to mentalize. The children then develop a sense of pride around being able to successfully accomplish goals. The case vignettes will illustrate the advantages of MERIT's integrated approach to treating autism.

Remediation

The following cases are going to illustrate the process of forging the relationship with the child, becoming familiar with their constellation of deficits and planning the therapeutic intervention. The focus during this phase of the treatment is connecting with the child and typically increasing their regulation through the relationship and by improving visual and auditory attention. Additionally, I will work to improve the child's capacity to communicate and their executive functioning skills.

Josh: The Relationship

Josh was fifteen when I met him and had a 40 hour ABA program through his preschool years. I was called in to consult because of Josh's increasing "non-compliance." Josh was refusing to follow his schedule at school and refusing to follow the rules at home. If changes couldn't be made, his school had threatened to expel him.

Josh was skeptical to begin working with a new therapist. Being an adolescent, he was struggling with issues of autonomy and resented the high level of directedness that he assumed the therapy would have. I met Josh at school and observed him with the other teenagers. He was attending a program in which he was integrated with other high school students who did not all have autism. Some of the teens had learning disabilities or physical handicaps. While there were many advantages to being in an integrated setting, one aspect that Josh found quite difficult was observing some of his peers enjoy more freedom and independence than he was allowed. His less disabled counterparts were given appropriate freedoms at school and Josh resented this distinction. Additionally, Josh had older siblings who had also been allowed more age-appropriate independence in adolescence.

To complicate matters Josh's parents were divorcing and his mother's and father's relationship was fraught with animosity. Josh went back and forth between their two homes and was frequently stressed by the family tension. I spent time with Josh at home and at school and saw that some of his difficulties stemmed from rigidity (a feature common in autism). I set up an intervention that involved seeing him in all three environments. I would meet him at school, and in both parents' homes. Because Josh was so unable to express himself around emotional issues, I felt that it was important to observe him in multiple contexts.

Josh and I connected very quickly and he soon came up with a nickname for me. Initially he called me "Shaggy" and he wanted me to call him "Scooby." He wanted to talk to me in a Scooby voice during this phase. When I shared this with his mother, she was very touched and said that he used to call his first baby-sitter "Shaggy." She had cared for him for the first eight years of his life and he was very close with her. She was surprised that he had remembered that pet name and felt that it was indicative of his attachment to me.

As our relationship evolved, I came to see it was important for Josh to engage in activities that he enjoyed and that allowed him to experience more age-appropriate independence. We began riding bikes in Central Park. We would plan ahead and Josh would bring some of his own money. He would go to a stand and buy water or a snack for himself while I waited close by. During these activities the most critical factor was how I spoke to and interacted with Josh. There are very behavioral ways of increasing independence (with visual schedules and specific reinforcement). In Josh's case I could see that this level of facilitation was unnecessary and that Josh would be put off and even insulted by a more classic ABA approach. It was the normalizing of these activities that Josh needed and appreciated the most. By meeting him at home, I was able to model these interactions for his parents and speak with them about his need for increased autonomy.

At school I began to see the nature of Josh's difficulties in the classroom setting. Ultimately, Josh's struggles were around coming to terms with his disability and the limitations it created for him but additionally it was learning to work with the rigidity that paralyzed him at times. One example occurred the winter that we began treatment on a day I was not at school. Josh always wore his winter coat down to the lunch room for dismissal. One day the heat was malfunctioning and the room was at least 80 degrees. Josh was unable to remove his coat. He complained bitterly about the heat and began to get quite agitated. Sweat poured off his face and hair but he refused to remove his coat. When encouraged, he responded hostilely, "I always wear my coat to dismissal!!"

Fonagy and his colleagues write about the "high tolerance for ambiguity" that mentalizing requires. This offers yet another explanation of why mentalizing is so difficult for children with autism. Rigid thinking is a commonly observed symptom and many children with autism have very little tolerance for ambiguity.

A second example occurred at school as well. Josh was asked to guess what might happen next in the novel he was reading with his English class. He refused to answer the question and was distraught when he was sent home with the assignment. I was able to talk with him about the question and what made it so difficult. “I don’t know what is going to happen!!!” he responded furiously and incredulous that he was being asked such a ridiculous question. Acknowledging that this was a symptom of his disorder and not merely “non-compliance,” I was able to implement an approach that simplified the task. I came up with three ideas of what might happen next and asked him to decide which one he thought was most likely to happen next. He was able to do this and proceed with the rest of his assignment.

Afterwards I was able to talk with Josh about how it made him feel to not know; to have to make a guess when there is no rule or to have to accommodate when an old rule doesn’t seem to be working. Josh was able to convey that he feels nervous and sometimes angry. We then talked about ways that might help. We talked about what it means to guess. We think of a few answers that could be right and pick the one that seems best. He could tolerate this process and appreciated the step-by-step description. I think this example reflects the part that remediation can play in preparing an individual with autism to engage in and benefit from psychodynamic interventions. By offering another system or rule which appeals to the autistic mind I can help diffuse anxiety and disregulation and in some ways I am teaching a coping mechanisms or a more appropriate defense.

Josh continued to benefit from our relationship and the unique design of the intervention. I was able to engage in mentalization with Josh with regard to his life experience and his autism. His autism limited his ability to communicate and when this was exacerbated by heightened affect, it was crippling. I began to put some of Josh's life experiences into words. He would listen intently and look relieved to be "understood." Using a more structured approach, we talked about how much Josh liked rules and had a hard time accepting exceptions. We discussed the idea that exceptions could be their own rules. For example, "I wear my coat to dismissal except when it is summer-time-hot." We role-played some similar situations and Josh was able to independently come up with the new rules.

Josh soon stopped talking to me in a Scooby voice. He abruptly stopped calling me Shaggy and began calling me "Partner." This change represented a shift in Josh's conceptualization of our relationship. I had gone from caretaker, to a partner in helping him make sense of his experiences.

Additionally, I initiated changes at home and at school to increase Josh's independence without jeopardizing his safety. I was able to help Josh review and interpret which of his social behaviors were appropriate and which needed to be reflected on. He did not shut me out as he did to others because of how I presented the constructive criticism. I might begin by identifying with Josh's experience. "That guy was acting so crabby, huh?" Josh would relate immediately to that piece because he had perceived that as well. I could then speculate about why someone might have responded to him a certain way and then explore other options or different approaches he might try next time. These explorations seemed to help to reduces Josh's rigidity. I can't emphasize enough the importance of the delivery and the relationship in facilitating these interactions. Josh came to trust that I was attached to him as well and that I had his increased independence as a goal too. I truly was his “partner” in accomplishing his goals.

Josh looked forward to the time we spent together. One summer day, Josh called me up and said, “Partner – where are you? My bike is waiting for your bike!” It was safer and more comfortable for Josh to displace our relationship onto our bikes. He could talk more freely about his bike missing me and wishing to spend time with me. Although, there was still the goal of helping Josh to be able to express his own feelings without displacing them onto inanimate objects, he had come such a long way. I could suggest to Josh, “It sounds like you are looking forward to our ride together” and Josh (although awkwardly at first) was able to accept these interpretations and become more emotionally expressive over time.

Drew: Hierarchical Teaching

Drew was a very bright five year old that I had worked with since he was three. His superior intelligence had allowed him to learn to compensate for many of his areas of deficit. He initially presented with significant apraxia and very little language, poor eye contact and very limited play skills.

I began to see Drew and observed some of his habits and rituals. He had little use for most toys and had perseverative interests. He liked the show “Blue’s Clues” and he never went anywhere without his “Dandy dandy dotedut” (handy dandy notebook). He also liked to do puzzles but he always had to do 10 if he did one. He would carry this stack of puzzles into a room and dump and do each puzzle. Upon completing them he lined them up so that they made a long line of ten puzzles. “Done, doo, dee…..” he would count them all when they were all complete. Drew was stuck in these repetitive cycles. I did not join him in idiosyncratic puzzle play. Rather I began to teach him new play skills.

I knew systems appealed to Drew so I employed them to achieve this goal. I made Drew a picture schedule of the various activities we were going to practice on a given day. The schedule played a significant role in Drew’s remediation. On one level it reduced Drew’s anxiety. By being tuned in to Drew, I could imagine that playing with toys other than his puzzles and notebooks was intimidating. He wasn’t sure what to do and this self-doubt created anxiety. It helped to have a visual of the expectation. The same way we might use a planner when our schedule becomes overwhelming and feel calmed by the organization and planning, Drew was able to use his schedule. The schedule introduced the concept of “having a plan” and Drew was able to visualize the expectation. As the months went by Drew was better able to internalize this organization. The schedule dictated which new play skills we were going to work on and there was a plan for teaching each different type of play skill.

Over the course of the next six months, Drew learned to build with blocks, make “soup” and draw pictures. As Drew learned what he might “do” with toys his interest in them increased. He no longer moaned when he saw the picture of blocks on his schedule. His increased competence developed into increased interest. None of which would have happened if he was not encouraged initially to expand his interests.

Drew also required intensive remediation and a repetitive approach to acquire language. Initially we taught him to articulate individual sounds. With mass trials Drew was able to imitate individual sounds in isolation. We then began teaching him to say words that began with the sounds he had learned. He could then articulate these words when applying great effort and focusing his attention on the articulation. In his everyday speech however, he was falling back to previous unarticulated speech patterns. I realized that because it was so effortful for Drew to incorporate newly acquired sounds, he needed to begin integrating them into speech in a systematic hierarchical manner. I also recognized that it was important that we begin to increase distraction and thereby diminish Drew's attention so that he was in fact learning to practice these sounds with less focused attention.

I developed games for Drew that would have him sustain less attention because he was distracted by the rules of the game but he would still have repetitive trials to practice the newly acquired speech pattern. One example of such a game was S- Bingo. I made a bingo board that contained nine items that all began with the letter S. Drew and I would identify each card as we took turns turning them over. I would model this on my turns and Drew would do the same. At first it was difficult for him to remember to practice a well articulated S as a result of being distracted by the rules of the game. This was my intention as it was important for Drew to learn to use the new speech pattern while distracted by everyday life. We started small by creating a minimally distracting activity. He had to match, take turns and identify his card. He eventually became successful at this task and we were able to increase the level of complexity of the activity. Drew systematically became able to articulate properly while engaged in novel activities including conversations with family and friends.

Drew's example demonstrates the need for a structured methodical approach when working therapeutically with children with autism. Drew needed repetition and mass trials to overcome the speech delay and the motor planning deficit that prevented him from being able to communicate verbally. He needed a structured plan for increasing his capacity to play but it involved understanding the source of his anxiety and offering adaptive ways to compensate that were realistic in their expectations. He could not have made the strides he made without this combined approach.

Luke: Using Mentalization to Inform the Remediation

Luke was seven years old when I began working with him. He was unable to identify familiar people by name and had very little language or academic skills. Luke had an extremely compromised ability to attend and had been unable to learn in any school environment to date. Additionally he could not relate experiences, make requests or play in any type of organized game. In his prior therapies he had been allowed to abandon activities whenever his attention wandered which was constantly. This intervention had been put in place in order to increase Luke's self-esteem but in actuality his stymied progress had caused him to be frustrated and discouraged.

Using a hierarchical approach I began to increase the expectations that Luke attend. Initially we used very simple activities so that the inattention would not be confused with inability. I added structure and visuals that allowed Luke to see visually when he would complete an activity. Initially he was expected to play a matching game that had him match three pieces. This was a struggle for him but I insisted that he complete the activity. I knew that he preferred certain types of engagement (spinning him on a chair or playing baseball with his stuffed animals as the balls) and we incorporated these activities too. There was just a clear expectation that at times he had to work at completing these other types of tasks. He made consistent progress over a short period of time. Soon he was able to attend for approximately ten minutes and new games could be introduced. Luke learned to play Listening Lotto and Caribou and came to love these games.

Simultaneously I began to target his language and his cognitive skills. Perhaps as a result of having years of schooling with little to no progress, Luke was easily discouraged. I came to recognize that all new interventions should be preceded by activities that Luke had already mastered. This was true in many domains. If Luke was to practice a new sound, it helped considerably to have him practice some of his mastered sounds first. In addition to improving or warming up his speech articulation, this seemed to bolster his confidence and encourage him to try his best. Other children may have tuned out if they were encouraged to practice material that they had already mastered before trying something new. This is where it is important to be tuned in with the individual child, as this was critical for Luke.

Part of Luke's inability to attend is related specifically to auditory attention. Luke is profoundly distracted by sounds in his environment. It was important that I strike a careful balance between teaching Luke to try to ignore irrelevant stimuli without disregarding his experience. To strike that balance, I take into consideration typical development and emotional saliency. If Luke hears a siren outside or the washing machine finish its cycle, I encourage him to attend to his work. If he hears his parents fighting or his dad come home from work, I may encourage him to comment or share his experience. These distinctions are a non-verbal way of teaching Luke about salient vs. non-salient stimuli and increasing his capacity to distinguish the two.

Although Luke's has an impressive capacity to engage with others, this can sometimes be a hindrance. Luke is prone to getting over stimulated while engaged in these high affect states and his already compromised ability to attend can be further diminished. A balance has to be reached where Luke can be engaged and enjoying high affect states but learn to be increasingly tuned in and responsive. To counter this dilemma I teach Luke skills in a more structured way. When he has mastered a particular skill set I will begin to test it out in more relaxed settings and finally in play. Similar to Drew, Luke requires that these steps be made in a methodical and hierarchical manner. He becomes increasingly distracted in each more relaxed setting and it is only by teaching him to attend in the most relaxed setting that we can truly consider a skill mastered.

For example Luke did not know his colors receptively. I began teaching them at a table with minimal distractions. When Luke knew all of his colors receptively, I began to explore his ability to identify them within games, puzzles and art projects. Initially he was less able to correctly identify his colors as a result of the additional distractions, but soon he mastered the skill in this more casual setting. Finally we began playing a high affect game that challenged Luke's capacity to attend. He was on one side of the door with a set of colored beanbags and I was on the other side. I yelled a color name to him and he had to pass me that beanbag under the door. I pretended to eat it up. Luke was hysterical laughing and at first in his excitement he would attempt to push through any and all beanbags at the same time. The game paused when he responded this way and then we tried again. Eventually, Luke could partake successfully with just as much joy and excitement. High affect can be very motivating with regard to learning, but for children with regulatory issues, it can also be an obstacle. It is critical to find a way to incorporate high affect in a way that children are taught to maintain their language and their skills. High affect situations are moments we most need to be able to communicate.

Liam: Continually Assessing the Appropriateness of the Intervention

One of the disadvantages of an ABA program is that it does not attempt to have the child adopt the program goals as their own. ABA works on the premise that external reinforcement can create motivation and that this externally contrived motivation is sufficient to engage the child. Many children invariably burn out using only external motivation. Liam was such a child. Liam was diagnosed with autism when he was three years old and had very limited language. He was very bright and responded to ABA interventions quickly and made significant gains in language by the time he was four years old. At this time it was critical that Liam's work move to a more naturalistic approach. He was able to learn through play and his most significant remaining deficits were social and emotional.

His speech therapist, however continued to work with him using ABA methodology. She worked using discrete trials and a token board with the promise of candy if he had gotten all of his tokens. Liam became very resistant to working with her. He groaned and complained as he arrived at her office. When she attempted to have him choose the reinforcer that he would work for that day, he would respond, "I'm not really hungry, in fact I don't really like lollipops anymore." On day he informed her "You shouldn't be offering me candy, my dentist says it's bad for my teeth." Soon the speech therapy was discontinued because it was no longer successful.

I continued working with Liam for another year. He did still like lollipops but he was never offered them as a contingency for working with me. By incorporating typical peers and age appropriate activities I was able to engage Liam using a methodology that was very effective and yet did not feel forced or unnatural to Liam.

School systems will claim to want for each child the least restrictive setting in which they are capable of learning. I believe that therapies for children with autism should also adhere to this philosophy. Initially most children with autism require structure but as they progress their need for structured therapy diminishes and they are more capable of benefitting from a more play-based, naturalistic approach. To maintain too much structure when a child is ready for less limits impedes progress and sends a message to the child that their current state of functioning is irrelevant. Failure to evolve the treatment in response to the child's development can result in disengagement as we saw in Liam's response to his ABA-based speech. Alternately, responding to the child with respect for their developmental stance can offer an opportunity for collaborative intervention as we saw with Josh. Children in this phase of treatment are more capable of doing dyadic work with a parent or with a peer and are ready to work on the skills strongly associated with the capacity to mentalize.

Mentalization Based Therapies

The following case vignettes describe interventions aimed at improving the capacities necessary and related to mentalization. Some children with autism present with significant deficits with regard to their ability to scan and recognize faces, attend to facial expressions and to identify emotional states in self and other. Additionally children with autism frequently have difficulties with visual attention and find it challenging to attribute causality. They require specific remediation designed to teach these skills individually. When these skills have been taught, a comprehensive intervention will then attend to pretend play, talking and interacting with peers. These domains have been identified as areas that scaffold the capacity to mentalize and can be remediated so that children with autism are more capable of this process.

Katie: Recognizing Faces and Emotional Expressions

Katie was unable to identify people in pictures. When shown people in her family or therapists that worked with Katie daily, she was unable to identify them receptively. She began an intervention that helped her look at identifying traits. Pictures were enlarged and a picture was put out amongst objects. Using this simplified method, Katie was expected to identify a picture of "mommy" with pictures of a broom and a car as distracters. Katie learned to do this and in the next stage of teaching, Katie learned to identify Mommy with people distracters that looked very different from Mommy (little boys, babies, old men). Gradually more similar distracters were introduced such as same aged women with the same hair color and Katie eventually learned to identify Mommy from a field of three or six including some similar distractors.

Using this approach, Katie soon mastered other family members and therapists. Each new person was learned a bit more quickly than the one who preceded it. Soon Katie was able to learn to receptively identify a new person in a day or two. She was learning to compensate for this apparent deficiency and this skill was generalizing to situations at school and in the community. This ability which we take for granted was extremely compromised for Katie. Through hierarchical teaching however she was able to make measurable gains in an area that is critical for social development to proceed. The effort was clearly worthwhile and this was evident one Saturday afternoon as Katie's mom asked her to give a cookie to her dad and her brother and her sister. Slowly and carefully Katie looked at the faces of the people in the room. She had a big smile on her face as she delivered each cookie and her family cheered her success.

Katie could also not recognize emotion in faces. I explored the extent of this deficit. It became apparent that even if the tasks were simplified this was difficult. Three different emotional expressions of the same familiar person were placed on the table and Katie was given one identical picture to match to a particular face. She was still unable to do this. The inability to read facial expressions in others is referred to as facial agnosia. Individuals who suffer strokes or traumatic brain injury and suffer from agnosia have difficulties in social interactions because they are unable to read the social information from facial expressions. They cannot tell if the individual they are interacting with is happy, sad or frightened. It makes sense that if one was unable to read faces that they would consequently come to spend much less time attending to faces.

I set up an intervention for Katie in which she would be expected to match these identical faces with identical expressions. I prompted her to attend to the salient features; the mouth, the eyes. Soon she was able to match happy pictures of the same person with 10 different picture sets. She still was unable to match any other emotions. I taught her a second emotion and she learned to match “sad” even faster with the same attention being drawn to the eyes and the mouth. By the time I introduced the third emotion she was able to pick it up in a week and to all our amazement she was also able at that point to match different people who matched the same emotion. I began to notice an increased interest in people’s faces. She began smiling at familiar people more often and looking to share pleasure and engage in joint attention more frequently.

Anna: Understanding Emotional Causality

Anna was non-verbal at three. I did some structured work with her initially that enabled her to develop language and age appropriate cognitive skills. By the age of four, Anna had enough language that she was able to have conversations with adults and peers. Anna still struggled with cause and effect, particularly causal attribution of emotions. She was frequently frustrated and agitated and she was prone to temper tantrums at home and at school.

A play therapist worked with Anna for about six months. She tried to help Anna to identify the cause of her frustration. Despite the efforts of the play therapist, Anna continued to have melt downs. Now she also paired these states with a repetitive phrase she had learned in play therapy. “Why crying?” Anna would ask herself as tears streamed down her face, sobbing, frustrated and confused.

I began to work with Anna on understanding cause and effect. I made picture sets of me in before and after situations that had clear outcomes based on my actions. For instance one picture showed me holding a pin to a balloon and in the next picture, the balloon had popped. Another set showed me rocking in my chair and in the next picture I had fallen down. We worked with these and other sets of cause and effect pictures until Anna was able to predict what would happen and was then able to generalize this skill to other familiar situations without pictures. At this point, I could ask Anna, “What happens when you spin around?” And Anna would respond, “I get dizzy!”

From this stage we progressed to picture cards that depicted emotional causality. Anna would look at pictures of a child crying with their ice cream on the ground. She had to be taught some of the responses initially, but soon she was able to scan a picture for the relevant information and process an accurate response. Generalizing this skill to her own emotions was challenging in a sense because although some of Anna’s emotional responses were quite typical, many of the situations that caused Anna distress were unusual. She became extremely anxious if there were changes in the schedule at preschool, or if her sister sat at a different seat for dinner or if her dad took her home from the park using an alternate route.

Her intelligence was an asset though and soon, with some help, she was able to make the connections between her experience of the changes in her environment and her emotional state. Anna was helped though by the hierarchical intervention to be able to make connections between her experiences and her emotions.

Pretend Play

Engaging in pretend play accomplishes multiple goals for the child with autism. They work on the capacity to symbolize which is directly related to the ability to use language. Additionally, they work on experimenting with understanding the mental states of others. Playfulness and pretend play can be challenging to the child with autism, but these domains can also be taught using remediation based approaches. By breaking down the skills that are involved in pretend play the child with autism can enter the world of make believe successfully and without being overwhelmed by anxiety. The following vignettes illustrate the practice of integrating hierarchical and remediative interventions with a mentalizing approach, to help the child with autism overcome deficits in abstract thinking and therefore be capable of engaging in pretend play.

Sebastian: Distinguishing Play from Reality

Sebastian was a child that I was working with when I was asked to practice administering the Animal Preference Test as part of my doctoral training. I asked

Sebastian, “If you could no longer be a boy and you had to be an animal, which animal would you be?” Sebastian squirmed in his chair, clearly disturbed by this question. “But I *am* a boy,” he responded emphatically. “I know,” I reassured him, “you are a boy. We’re just pretending that you might be an animal and I just wanted to know which one you would choose to be.” After multiple exchanges in this same vein, Sebastian decided he would be a shark. Like many other four year olds he also chose “shark” as the animal he would never want to be. He both wanted and didn’t want to be a shark because it “has big teeth.” We finished discussing the other animals Sebastian had named and then he asked nervously, “Jen, can I be a boy again.”

The concrete thinking that is analogous to ASD can make pretend play very frightening to the child with autism. Sebastian and I read the story of the three pigs and he enjoyed the pattern woven into the dialogue of the story. He quickly memorized the words and I thought that the story might allow a bridge into pretend play. Sebastian was having a playdate with another child and he was thrilled about the idea of playing “three little pigs.” Sebastian seemed somewhat anxious but was enjoying reciting his lines as a “pig” and therefore went along with the game. I was the wolf and when it came time for me to blow the house down, Sebastian became hysterical. It was as if I had transformed into the wolf.

Not wanting to abandon the idea that Sebastian could be taught to enter into the world of imaginative play, in a slow, systematic, safe way we began to introduce the concept of pretending. I made some games that had cards to choose. Each card had a character and you had to say something that character would say. The other person had to guess which card you had chosen. Sebastian liked this game very much. It was predictable and safe but it also had him beginning to realize that he could talk like a particular character and still be Sebastian. Just because he said “I live in a pineapple under the sea,” he did not become Spongebob. From there we began to work on varied forms of charades, including a “who would sing this?” game and eventually we developed concepts of what characters in a particular role would do and say.

Using this systematic approach Sebastian was able to learn to engage in many forms of pretend play. By the time he was five years old, he regularly joined in with his typical preschool classmates in the pretend area and contributed to making up complex stories as they played varied versions of “family” and “dinosaurs.” By allowing Sebastian a gradual entry to pretend play, I was able to help him to realize we remain in reality even when we venture into the world of pretend. This systematic process decreased Sebastian’s anxiety, which had been overwhelming, and allowed him to benefit from the joy of pretend as well as all of the other skills that pretending enables typical children to develop.

Ava: Remediating the Ability to Pretend

Ava was a rather serious four year old girl with autism. I played a game with Ava that involved feeding me play food. Sometimes I would react in an extreme manner and pretend that it is terrible, spitting it out and making disgusted sounds and gestures. Other foods I pretended to find delicious. Sometimes the food is too hot or too cold. I often captured Ava’s attention as she was eager to see how I would react or *how I feel* about what she was serving me. The over-the-top dramatic nature of the play was necessary to capture Ava’s attention which would not necessarily be tuned in to my reactions otherwise. Ava would also take a turn reacting to what I have made for her and delight in changing her responses, thereby having experiences connecting her inner thoughts with her outward expression as well as an opportunity to understand my thoughts based on my expressions.

Mark: Beginning Mentalization

Mark, a five year old boy with autism, had made significant gains in the capacity to be playful but needed some help to further consider the mind of another. I created a game for him using picture cards to spark his interest in mental states. There were five cards and each card had a picture. One picture was a clown, one was a baby, one was a piece of cake, one a monster, and one had bugs crawling on a cookie. At first I showed Mark the pictures. Then I looked at the pictures one at a time and reacted with an emotional response and gesture that indicated which picture I was looking at. I asked Mark to guess which picture I was looking at. If I seem scared, he guessed “monster,” if I laugh, he guessed “clown,” and if I seemed disgusted, he guessed “bugs!.”

The contrived nature of this game limited the number of mentalizing options and the responses were very distinct from one another. Some children require an intermediate step in which I respond to the pictures while they are still in view. Following this most children are able to guess accurately regarding which pictures I am looking at based on my response to the picture. This game shrinks down the playing field of the countless number of responses that can be portrayed by our facial expressions and gestures. By not overwhelming them, I am able to allow them a certain level of success that in turn motivates them to make future guesses about the inner world of another.

Talking

Obviously the remediating of communicative skills or “talking” for children with autism, is an intervention that is as complex as it is critical. As discussed earlier, many children with autism also have apraxia which compromises their ability to speak. Still other children with autism never develop verbal speech. For these reasons, I am going to expand the notion of talking to include all forms of communication.

Children who use augmentative devices or alternative communication systems require thoughtful interventions to expand their communication beyond requesting. It is critical that these children learn to comment and share their thoughts and feelings. Children using communication systems need to learn to ask questions and reciprocate as these are the areas that will lead to mentalization.

Autistic children that do develop spoken language often have to be taught how to structure sentences and questions. There are many idiosyncratic speech patterns that are common to autism such as pronoun reversal, structuring questions and using “yes” and “no” appropriately. These speech patterns can be remediated using a structured approach that can then be generalized to everyday speech.

Additionally many children with autism struggle with aspects of having a conversation. The skills involved with having a conversation can be broken down into the component parts and taught individually. Children with autism can be taught to reciprocate social information. They can be taught to ask questions to illicit information and to stay on topic when having a conversation. These skills allow them to partake in conversations but ultimately they also convey the notion that their conversational partner has information to share and that conversing is an excellent way to access the mind of another.

Chloe: Using a Device to Share her Internal World

Chloe was a six year old girl who was unable to communicate verbally. She used a communication device called a dynavox to express herself. Chloe's mother was concerned that Chloe was prone to screaming uncontrollably in the evening and her mother had no idea what was upsetting her. I began working with Chloe to expand the ways in which she used her device. I taught her to comment about TV shows and to answer more complex questions. It soon became apparent that Chloe understood more than we had initially thought.

Curious about Chloe's evening outburst, I began to work with her to be able to express pain or discomfort. I was able to encourage communicative intent with contrived situations. I took a toy needle from her doctor kit and pretended to give her doll a shot in the arm. I pretended the doll was crying as I put a band aid on the doll's arm. Then both verbally and using her device I said "arm hurts!" I repeated this type of play with various parts of the dolls body and varying the source of pain so she would understand that pain can be at any part of our body and have many sources. Soon I would encourage Chloe to tell me what happened to me or the doll. Chloe would use her device to say, "head hurt" when her doll took a head first fall off of the couch.

A few weeks after we began working on this skill, Chloe began screaming after dinner. "What happened?" Chloe's mother asked. Chloe went quickly to her device. "Tummy hurts," Chloe explained to her mother. Her mother took her to the doctor the next day and then found an intestinal blockage. The blockage was easily removed and Chloe's night time melt downs disappeared. Chloe gained more than the ability to resolve a medical issue, she was now able to share her internal world with those around her. Imagine how closed off a child is who has no means to communicate thoughts, desires, feelings and pain. For children with autism these feelings and sensations are confusing. But by breaking them down and by using contrived situations we can teach what it means to experience physical and emotional pain and how to share this experience with those around you. At that point some of the natural reinforcers can maintain the expression of such states: meaning that those the child with autism communicates with, can be responsive and hopefully make them feel better.

Patrick: Difficulty with Negation

Patrick was a six year old boy with autism. He was unable to use negation to express when he didn't want to do something. "I no want to take a bath!" he would shout at bathtime. "I no eat my vegetables" he complained at dinner. Speech interventions had been unsuccessful in teaching Patrick this linguistic skill and he had been using these erroneous expressions for years.

Patrick loved books. He was read to every night and often requested books during the day. I knew that Patrick tended to memorize his books. I incorporated this idiosyncratic behavior and made a book for Patrick in which the main character, a little boy, was being asked to do things he didn't want to do. After each such request, the little boy in the book responded, "I don't want to!" We read the book. His parents read the book to Patrick. Soon Patrick began using the appropriate phrase himself. By using a mentalizing approach to inform the intervention, I was able to improve Patrick's ability to express himself and to share his opinions with others.

Morgan: Staying on Topic

Morgan was a 10 year old girl with autism. She was very verbal and very creative. She was frequently immersed in a world of fantasy and it was close to impossible to have her engage in a reality based conversation. She would share stories of the adventures of the red-devil. “The red-devil flew in and captured the hairy princess she would share. How can she get out of the cave with all of those horrid pets around.” Her family and peers were unable to discuss reality based topics with Ruby. She would seek out social partners but would insist that they repeat aspects of her fantasy based adventures. “The red-devil never takes off his mask, right mommy?” If her mother said that she didn’t know about the red-devil Ruby would become furious, agitated and even violent.

I began an intervention with Morgan that was very structured. I aimed to have her slowly incorporate a suggested topic using visuals and presenting the task in the form of a game. I made a stack of cards with proposed topics. The topics ranged from, “eating out,” to “vacation” to “what I like to do in Central Park.” Morgan and I turned over a card and we had to have an exchange about that topic. The card had four boxes which implied that we had to have four exchanges. At first Morgan resisted. I began the conversation about eating out and Morgan changed the topic to the red-devil. I told Morgan that she had to incorporate the topic. I offered that she could tell me about the red-devil’s experiences in restaurants. Ruby’s eyes lit up. She told me that the red-devil always ordered snails. She shared that he has terrible manners in a restaurant and once took the table cloth and wore it like a cape. We quickly didn’t need to use the checks because Morgan came to enjoy this activity.

Morgan was having a great deal of trouble falling asleep at night. I put “falling asleep at night” as a topic in our game. Initially Morgan began talking about the red-devil’s sleep habits. Then she became serious and said to me, “sometimes I can’t fall asleep at night and Mommy gets mad." This marked a shift in Morgan's ability to accept a topic or a question from another. She made marked gains in this capacity and although her fantasy talk continued, she was increasingly more able to have reality based exchanges. Holding the topic initiated by another is conducive to the development of theory of mind. It indicates that you know that this is what the other person brought up and you can share this with them by holding it in your mind as well.

Peer Group Interaction

The inability to socialize with others is one of the hallmarks of autism. This makes it a particular challenge to facilitate interactions with peers. Many children with autism will seek out adults when they do elect to socialize. Adults are frequently more responsive and less unpredictable. When I set out to facilitate peer interactions for a child with autism, I take into account his entire profile: his ability to regulate, communicate, his interests and his level of social intent. Even children with minimal skills in these domains can be assisted to interact with peers. Having peers available that have a range of skills can offer children with autism a valuable experience. Autistic children can be paired with higher functioning children or typical children in order to be able to master new skills.

I am the director and co-founder of a socialization and leisure skills group for children with autism called "Boost!." Running this program allows me to implement my philosophy regarding social interactions for children on the spectrum.

In the initial phases of treatment, or for children with more significant deficits, I will begin by having them make requests from a peer using a communication system if necessary (PECS or an augmentative device). Initially I may have them request desirable items and once that skill is mastered have them make requests to complete an activity.

Lily: Scaffolding Interactions with Peers

Lily is a five year old girl that comes to Boost. Initially Lily's inability to communicate and limited capacity to attend, required her to interact predominantly one-on-one with an adult. Lily was taught some of the leisure skills necessary to interact with peers. She learned to play bingo with a modified board and she learned simple turn taking games. Once these skills were mastered with an adult, Lily was ready to play a game with a typical peer. I chose an older peer so that Lily was able to benefit from the support that they were able to provide. Lily struggled initially to interact appropriately with the peer as this dyad created more excitement and thus more inattentive behavior. Lily was able to regain her level of mastery and then went on to play with same aged peers one-on-one and eventually in a small group. The skills that Lily was able to gain from these experiences were priceless. She was able to observe the behavior and communication of the other children in the group. She had to practice shifting her attention between multiple social partners. Most importantly she was able to observe different reactions from her peers, strengthening the notion that the children have different thoughts and feelings from her own and from one another.

Charlie: Structured Group Games that Increase Mentalization

The children at Boost play a game called "Guess About" that also encourages the capacity to mentalize using a structured approach. One child is in front of the group and is the child that the others "guess about." He gives his answers to five questions before the rest of the group arrives to the circle. The other children are then asked to guess about their peer. The child who is being guessed about, asks the other children to “guess my favorite drink,” “guess how old I am” and even “guess what freaks me out.” The other children then make a guess.

There is a large board tacked up in front of the group. The question, guesses and responses are noted on the board so that the children have a visual present, and more than one way to process the information. For less verbal children, there are smaller visuals (a sheet that offers multiple pictures of drinks or a sheet with numbers that might be the child’s age). They can point to a picture on the sheet in order to “make a guess.” In addition to being tremendously helpful for non-verbal children, these answer sheets also help verbal children who may find “guessing” difficult. The children enjoy this game immensely and there are so many skills that are being developed. They are having a communicative exchange with their peers. They are learning to guess which is quite challenging for some children on the spectrum. Perhaps most valuable however is the idea that this structured game is exposing them regularly to the notion that different children have different answers to this question set. The children in the program delight when someone has something in common with them (“You like Lion King?! So do I!!”) and they begin to incorporate the idea that other views may be quite different from their own perspective.

In a recent session of Boost, Aiden was being interviewed. The children guessed about what freaks Aiden out. Sam guessed, “a shot from the doctor?.” Emily guessed, “spiders?.” Aiden turned his answer over on the game board. “I am freaked out by cats!” he shared with the group. “You are?” asked Charlie, shocked. “Well you should meet my cat. She’s very nice and you might change your mind!” This simple offer from

Charlie implies so much. These children are learning that not only can someone have a different perspective but that perspective can be influenced by their experiences. Certainly, this is evidence of mentalization.

Therapist and Parents: Complementary Roles

The process of mentalizing is not only critical in fostering attachment in the therapeutic relationship but it is also important to keep present in parents' relationships with their autistic children. A therapeutic approach which dismisses the importance of allowing a child to feel that their internal world is recognized and understood would be detrimental to any child but particularly to a child with an under-developed sense of self. As noted in some of the case vignettes above, non-verbal or barely verbal children with autism have a need for their actions and their experiences to be interpreted for them verbally.

One mother of a verbal but severely socially impaired boy with autism, shared the story of how she had refused behavioral interventions in one area for her son Ivan. Ivan attends a traditional ABA program and at one point the school came to observe Ivan at home. They were very concerned about the way in which Ivan used the computer in his room. At school Ivan had been taught to use the computer appropriately selecting games from a schedule and looking up specific information on websites. At home Ivan liked to look at You Tube. He also liked to have a book or two open on the bed behind him. I observed his computer routine and it consisted of looking up certain you tube films and playing them, often playing them repeatedly or parts of them repeatedly. Many of the you-tube segments were advertisements with jingles. Ivan sat in a swivel chair and would spin around quickly in his chair and flip through pages in a book, just to whip around again to replay the you-tube video or quickly jump to another. The school had suggested that Ivan be required to use the computer schedule that he follows at school. His mother's response was that Ivan has pressure on him all day to do what other people want him to do. When he comes home from school he needs to have some time that is his own. As his mother put it, "this is Ivan's cigarette and I'm not going to take it from him." I agreed with this mother's interpretation of her son's behavior and I was impressed with her ability to understand his experience. As a result we allowed Ivan his routine and chose to implement his computer schedule on the weekends when he had much more time at home.

A vicious cycle can erupt in more structured therapies where because they are so specialized, the parent begins to feel that they are not equipped to interact successfully with their child. They avoid many typical family interactions and the child loses the benefit of these experiences, which are so precious to development.

Nicholas

I recently spoke with a 13 year old boy regarding some problems his mother was having with Nicholas at home. Nicholas had a leisure schedule that he followed at home, as he is not yet able to occupy himself with an internal schedule. Nicholas would chose the activities that he wanted to do on a particular afternoon from a list of choices. Among the choices was playing on the computer. The problem was Nicholas and his mother had different ideas of what Nicholas should do on the computer. Nicholas loved to watch clips of Barney and Winnie the Pooh on You Tube. His own collection of videos had been confiscated a few years back when his parents determined that he was too old for such things. Repeatedly Nicholas's mother would walk in during his computer time when he was supposed to be visiting “appropriate teenage websites” (such as you tube skateboarding or iTunes music videos) and catch Nicholas watching Barney or Pooh. At this point Nicholas would plead with his limited language to stay on the computer. “No Barney please. I not do Barney!” in attempt to persuade his mother not to banish him from the computer, but his mother was unyielding. When Nicholas was caught watching Barney and Pooh he lost computer privileges for the day. Nicholas was still sneaking to watch Barney and Pooh and so in response his mother made the consequence more significant. Now, if Nicholas was caught watching Barney or Pooh he lost the computer for two days. She asked for my advice when even this more significant punishment was not deterring Nicholas.

Nicholas’s mother had already approached her son’s ABA school to ask for help with his disobedient behavior at home. They suggested a complicated bead system. Nicholas would wear an attachment on his belt and he was given instructions via an earpiece that he wore. When he was “on task” and doing what he was supposed to an adult could speak to him through the earpiece (so as to remove the chance that Nicholas was misbehaving to get his mother’s attention) and tell him to “reinforce” himself by giving himself a bead. When he had earned all of his beads he gained access to a preferred activity. Nicholas quickly came to understand the system and when he thought no one was looking he attempted to give himself unearned beads.

Nicholas’s mother has an older teenage son, so she is very aware of typical adolescent development. She encourages Nicholas to develop age appropriate hobbies and interests. Nicholas really seems to enjoy some of the activities that his mom has exposed him to. He plays the piano quite well and cooks dinner once a week. He clearly has cognitive limitations however and I am certain that these contribute to the fact that he continues to enjoy shows designed for much younger children. In advising a family in situations such as these, I think it is critical not only to mentalize (attempt to understand Nicholas's thoughts, motivations and feelings), but also to mentalize his mother's position. Nicholas's mom realizes that the increase in non-compliant behavior that she has recently observed is typical of adolescents. I was able to say to her that Nicholas has been in a strict behavioral program since he was three years old and that demonstrating protest and advocating for your own needs is a healthy part of every child's development. She was able to reconceptualize Nicholas's "naughty" behavior as a result of this discourse. Additionally we explored together why it was so difficult for her to allow him to watch these preferred shows. I presented it to her as his non-verbal attempts to say to her, "but I REALLY like these shows" and her repeatedly punishing him gives him the experience of her responding "I don't care." I asked her if she could envision attempting to understand Nicholas's behaviors by verbalizing them to him. In a sense, although she would have to "speak" for Nicholas the discourse would not be very different from typical adolescent negotiations. I gave her the example of a teenager who wants a later curfew. The parent would give their reasons for wanting the child home earlier and the teen would give their reasons for wanting more time and eventually they would reach a reasonable compromise. This example likely appealed to her because it likened the situation to typical development and parenting. I suggested that she could she say something like, "You keep watching Barney and Pooh even though you get in trouble because it is not allowed. You must *really* like Barney and Pooh. You know that mom and dad want you to try and watch some things that bigger boys like because you might like them too. What if we made a deal and you could watch a little Barney and Pooh, after you try something on the computer that is for bigger kids. I know that sometimes it takes watching things a bunch of times before you like them. So I just want you to give other things a try."

Becket

Claudia, is the mother of a four year old boy with autism. Claudia has significant OCD tendencies. Everything had to be very organized. She would keep her son's room too neat. His toys were always out of reach. If he had a dirty diaper it was torturous to be changed by her. She would use 100 wipes. He would scream and she would wipe aggressively and silently. I shared with Claudia that she had to talk to him during this process. I explained to her that she had to let him know how much longer it would be and try as hard as it might be to let go of the need perfection because it is at a cost to him.

Claudia also struggled with limit-setting with Becket. Some parents come to avoid setting the child off as a result of having experiences where the child was out of control, "creating a scene" and very difficult to regulate once on these intense states. As a result some parents who had solid notions about boundaries etc. begin to avoid setting appropriate limits for fear of setting their child off. This process is cyclical as the lack of boundaries leaves the child with ASD even less regulated and more out of control.

Claudia began working towards being more verbal in her interactions with Becket. His progress was impressive as she attempted to talk him through activities and offer explanations. She began going out with Becket more as he was now better able to remain regulated and was more verbally expressive. She related the story of taking him to Party City when she felt that he was again "very difficult." She was having a huge anniversary party for her parents and had a lot of things to pick up. He saw a large box of balloons and desperately wanted it. He began screaming until she gave him the huge box of balloons and he indicated that he wanted it in the cart. Claudia carried it around in the cart until ultimately she needed the cart space. She attempted to surreptitiously remove the box of balloons but Becket noticed. He began screaming again. Exasperated, she reluctantly returned the box of balloons to the cart. She struggled to the register and then whispered to the woman that she did not really want the large box of balloons. She asked her to pretend to buy them and put them to the side. When they got to the car and the balloons were not there, of course Becket began screaming.

Initially when Becket was in a very disorganized place, suffering from multiple sensory issues and extremely language delayed, his mother became overwhelmed. She learned the unproductive pattern of walking on eggshells around Becket. Her fear that he was going to explode and behave unreasonably led her to alternate between rigid, and silent adherence to what she felt “must be done” (ex. changing his soiled diaper) to incredibly lax boundaries which left Becket feeling that he was in control which in turn was frightening. I worked with Claudia to identify parenting behavior that was in between rigid and lax. I worked with her to imagine Becket’s experience in many of the situations that he found frustrating and we worked together to help her to be consistent but developmentally appropriate. She began setting more appropriate limits with Becket and he responded in a positive way. The upturn in their relationship was cyclical in the sense that her improved parenting led him to have better behavior. In essence she was more connected to him and as a result he was better regulated and more responsive to her.

Oliver

Oliver is a seven year old boy with autism who struggles with profound memory, attention and cognitive deficits. Oliver's mother frequently gets frustrated with Oliver. If he struggles to remember something that he has learned she quickly becomes impatient. His response is to fold his arms and look angry. Oliver had few leisure activities that he was able to engage in independently and as a result he was very repetitive in his choice of how to spend free time. He would choose to watch the same movie or listen to the same string of songs on an i-pod.

In order to increase the number and variety of leisure skills Oliver was able to engage in I taught him to play simple turn taking games and to do puzzles using a system which broke down the activity and incorporated a visual aspect that Oliver found organizing. Using this method, Oliver was able to do a 35 piece puzzle with minimal support and (possibly even more importantly) he was able to sustain his focus on this activity for approximately 10 minutes. The system involved pulling letters A-F off of a strip and matching them to a bag which contained only the pieces for that particular column. Oliver would systematically pull of the letters in alphabetical order, match them to a bag, dump the pieces from that bag and put together the pieces for that particular row. Oliver loved the system. It was organizing and he took great pride in doing the various aspects of the task that he could remember. The only aspect that was challenging was attending to the letter strip to make sure he removed the next letter in the row.

His mother observed him doing his puzzles using this system on a few occasions and then she was excited to try this activity with him. Within a few minutes of their working together in the next room, I could hear that she was becoming frustrated with him. When I arrived he was sitting in an armchair with his arms folded. He looked angry and was not responding to her bids to return to the activity. “Look at him sitting there! He is so smug and defiant. It makes me crazy!” his mother shared with me. I asked her what had happened and she explained that he had gone to take the wrong letter and she had corrected him and he got up and walked away. I explained to her that when he seems angry, part of that is the result of feeling inept. I showed her how I had been indicating to him which letter to take so that he would be successful. Until he was more familiar with the system, I would support him in this manner so that he would not become frustrated. When the system was familiar we could fade out our support in a systematic way.

It was a critical intervention to help her to see him from a different perspective. He was not a defiant, obnoxious child but rather a child who was trying to hold onto some small shreds of dignity and pride and would rather indicate that he quit than to be always seen as a failure by his mother. She worked hard to keep his experience in mind and their relationship began to shift. By providing Oliver with activities that he could do more independently and by helping her to assist him in ways that were more supportive and empathic, they were able to develop a relationship in which he was more willing to take risks with her and try new activities and she was able to enjoy this new dimension of their relationship.

Michael and Jake

One family that I worked with had non-verbal, cognitively impaired twin boys with autism. Much of my work with this family involved helping them, the children’s mother in particular, to understand her boys. The boys, Michael and Jake went to a traditional ABA school. They had had home based behavioral programs since they were three years old. The children had been taught to use communication systems. Michael used PECS (Picture Exchange Communication System) and his brother, Jake used an augmentative communication device. Both children predominantly used their communication systems to request food. The children were both overweight and their mother was at a loss as to how to refuse their constant requests for food.

In many instances the process of helping the parent engage in mentalization with their child involves understanding how they experience their child. Many behavioralists had emphasized to this particular mother how important it is for the children that she limit their intake of snacks. Despite being inundated with recommendations to the contrary, this mother continued to overindulge their constant requests for food. A behavioral approach was not sufficient. It was necessary to explore why she was overindulging her children.

It is such a painful experience to have a child who is unable to communicate with you that I could only attempt to imagine the experience of having two non-verbal children. Food was a powerful motivator and the only incentive that motivated the children enough to communicate. I think that this mother was so drawn to the possibility of having meaningful exchanges with her children that she didn’t want to discourage their only attempts to communicate. Additionally she had strong feelings about their significant disabilities. She felt that their lives were filled with “work” as they had various therapies throughout the day to address their multiple areas of deficit. In talking to their mother about why she conceded to their food requests so frequently, it was clear that additionally she realized that they had such a limited range of activities and she felt that they enjoyed and eating was something that gave them pleasure.

My intervention involved understanding this aspect of the relationship this mother had with her children and her needs as well as theirs. In coming to consult with the family my initial goal was to increase the amount of alternative activities that the children could engage in and thereby decrease their constant requests for food.

I set out to design an intervention that targeted this lack of leisure skills and over the next two years we were able to teach the children the prerequisite skills to engage in independent and group leisure activities.

I began to teach the twins simple well designed leisure activities that they could do with their mother and additionally I worked at helping both children to understand that they could also use their PECS (picture exchange communication systems) to request to go on outings. Both children have very low IQs in addition to being non-verbal and so teaching the above mentioned skills was complicated. I began by tying in the known motivator (food) into these new activities.

I created a game for the children involving a colored die and a small mat that had skittles on it. They rolled the die (this involved significant fine-motor training) and then they matched the color on top to a skittle on the mat which they could then eat. Each of the steps involved in this simple game had to be broken down significantly. They had to match the die to colored cards and then to a skittle and then the rolling of the die which had been taught separately could be incorporated. Waiting while the other person took a turn was an additional skill that had to be taught. The end result was that both children could play this “game” with each other and with their parents. Once some of these prerequisite skills were mastered through this motivating game I was able to successfully generalize the skill of color matching to other simple games that did not involve food.

Michael

In addition to having goals at home to expand Michael's individual and group leisure skills, I sought to have him better able to engage in activities in his community. His mother shared that it would be nice to be able to bring him to the library. Michael however had no interest in books and in fact seemed to find them aversive. Michael has extremely impaired receptive language and realizing that his receptive impairments may be creating anxiety that interferes with any potential enjoyment Michael might derive from being read to, I set out to systematically help him connect with books. I approached this desensitization to books using two approaches simultaneously, both which attempted to allow Michael to be active and to derive a feeling of competency that he had previously not experienced even as a passive listener.

First I used a device called a CheapTalk. This device has eight cells that can be programmed. I took the board book, Brown Bear, by Eric Carle and I programmed each page into the cell and put a corresponding picture on the page. Michael was taught in small carefully planned steps to "read" the book using the CheapTalk device. As he turned the page to a new picture he found that corresponding picture on the CheapTalk device and pushed that cell. In response the device "read" the page to Michael. Once this skill was mastered Michael enjoyed reading Brown Bear and even sought out the book pairing it with the device. I think that "reading" his book in this way allowed Michael the opportunity to be active in a process that was previously overwhelming. Without the Cheaptalk device, listening to a story required abilities in the areas Michael suffered significant impairments; processing language receptively and attending to auditory and visual information. The device allowed Michael some feelings of competency which replaced his previous experience of anxiety. As a result of this positive experience, Michael began looking at Brown Bear and other books without the device.

The second intervention involved changing the experience of books from a receptive language task to one in which Michael could utilize an area of relative strength, his visual processing. I modified a set of books for Michael that required him to match pictures on the page by using color-copied and lamenated photocopies of characters and objects on a given page. Michael had to be taught this skill by breaking it down into the most simple form. Initially there was only one picture on a page and Michael matched that object. Next Michael learned to match an object with a few objects on each page until, eventually he was able to match on a relatively busy page.

Michael enjoyed doing these modified books and sought them out of his own accord. We were able to return to the library six months later and Jordan began a plan in which he went to the board book section and chose three books and looked through them and then left. And although this entire process took over a year to achieve, Michael frequently requests trips to the library now. These "requests" from Michael are critical indicators of pleasure from a non-verbal child with autism. "He loves going to the library now!" his mother shares with disbelief (as he uses PECS or physical guidance to indicate where he wants to go). This initiative is priceless and understanding Michael's mind was a necessary prerequisite to helping him to accomplish this important goal.

The MERIT Model

The children and the parents in the cases described above have clearly benefited from the MERIT model. The children in the above examples demonstrate not only the gains that were made but the richer meaning behind these gains. As a result of the therapeutic relationship and through this deep level of being understood, their therapy was able to be designed to more specifically meet their needs. Their likes and dislikes and interests and fears were taken into account and in the way of some of the best play-based therapies, they were engaged and personal connections were created. Simultaneously though, their deficits were assessed and the aspects of their developmental delays that were hindering social development were remediated alongside those delays that were impeding their academic and cognitive development. This need-based intervention allowed these children to make measurable gains in all critical areas while maintaining a strong and meaningful connection with me, their therapist. It is through this relationship that they were able to often-times derive their motivation. They quickly moved from requiring external motivators to being able to work for praise and in some cases the personal satisfaction that they experienced from their own progress. Autism is a complicated disorder but by simplifying even the complex processes that have gone awry we can feel confident that our treatment model is comprehensive enough to have a profound impact on the autistic child’s life.

Chapter 7: Discussion

MERIT is an integrated model that incorporates remediation with mentalization based treatments. This model offers a treatment option for children on the spectrum that addresses their areas of core deficit while simultaneously increasing their capacity to forge relationships and connect with others. The following points were illustrated in the above case vignettes.

- As autism is a brain-based disorder, there is an unequivocal need for remediation in order to overcome the neurological deficits.
- As autism is a disorder of the self there is also significant and important interventions that need to address the child’s sense of self and capacity to relate to others.
- There is a need for an integrated model as the two dominant models are each remiss by design. ABA therapists tend to be overly focused on the remediation and DIR/floortime therapists tend to be overly focused on the social aspects of the disorder. A balance is needed that looks at the needs of the whole child and allows for the creation and implementation of an integrated and cohesive treatment plan.
- Followers of either of the two dominant treatment approaches tend to be very disparaging of the other model. This dismissive and contemptuous attitude towards the other makes cooperative work extremely difficult.
- My model, MERIT integrates remediation and mentalization in a way that prioritizes the relationship between the child and the therapist but recognizes the impact that remediation can have on outcome.
- Implementing the model involves forging a relationship, assessment and a remediation phase. Remediation is ongoing but as the treatment progresses the plan incorporates goals that are specific to increasing the social and emotional growth of the child.

Bridging the Gap between the Dominant Models

ABA and DIR therapists, perhaps in an effort to defend the tenets that are the foundation of each treatment model, feel compelled to hold the other in disdain. In the attempt to demonize differing approaches, these polarized groups tend to simplify concepts and maximize their criticism of the other. The therapists that ascribe to one or the other of the dominant models are careful to elucidate what is pertinent in their approach and why the other approach is flawed. It appears that treatment approaches cannot attract “believers” unless part of their description includes discrediting other approaches. Although this polarization between members of opposing groups is not unique to the treatment of autism, it is very frustrating for parents, who struggle to arrange for optimal treatment for their child. As one mother recently described to me,

“It’s all so confusing. I have heard from many doctors that the best approach is one that uses behavioral and DIR/floortime techniques, so my son is doing some of each. The two groups of therapists have no communication and are constantly telling me to stop the other treatment. Both groups claim that their approach is the only one that will help. I don’t want him to have just *any* treatment. I want him to have the best, but they make it so hard.”

This mother describes the difficulties experienced by many families that realize that behavioral based treatments and more psychodynamically based programs both have something valuable and unique to offer in terms of their influence on teaching children with autism. The challenge is integrating the approaches and finding individuals that recognize the merits that each treatment model has to offer.

Currently it is becoming more commonplace for developmental pediatricians and neurologists to advise parents to get ABA *and* DIR/floortime for their autistic child. The most ambitious parents find separate therapists to provide each type of therapy. As the mother above described, they might attempt to have the two groups meet but there is rarely cooperation or mutual respect. Rather each team views the other as a threat and as a clear and distinct opponent of their own interventions.

This mistrust is somewhat understandable as the methodologies do in fact contradict one another. It is contrary to the widely held beliefs of DIR therapists to remediate language or cognitive skills. Rather they are focused on closing circles of communication and believe that skill acquisition can come later. ABA therapists find it very difficult to watch DIR therapists “join” the child if they feel that the behavior that is being joined is maladaptive. They would describe this as “reinforcing” maladaptive behavior. Thus it is understandable that the therapists and the treatments that stem from these models are rarely integrated.

The current methodology employed by parents (of having both types of therapies running independently of one another) is a flawed approach because the two models have mutually incompatible approaches to handling self stimulatory behaviors, language, communicative attempts and skill acquisition. They repeatedly contradict one another.

In the case of a child that flaps, a behavioral therapist might require the child with autism to do toe touches which are in direct competition with his desire to flap. A DIR/floortime therapist might join the child in their flapping, considering the behavior a form of communication. Their joining would be an attempt to communicate an understanding of the child’s inner state.

It would be confusing to any child to make sense of these two very different responses to the same behavior. It is particularly confusing to a child with autism.

Children with autism are seeking out patterns. This is commonly a strength in autistic individuals. This strength becomes a detriment as the autistic child attempts to make sense of these dramatic inconsistencies.

The integration that can take place when my model is employed offers a way to combine the valuable aspects of these two models and to provide a coherent approach for the child. In the case of a child that tends to flap. I would combine the theories behind the dominant models. I would feel that it is important to acknowledge the origin of the flapping. “You are so excited. When you are excited you like to flap” but then utilize ABA techniques in redirecting the behavior to a more socially appropriate expression and simultaneously redirecting the child to an activity that has been established as regulating. Unlike typical children, children with autism have difficulties regulating themselves through affective containment. This experience needs to be modified and for many children alternate (more appropriate) activities can be suggested as a compromise between maladaptive strategies and an internal capacity to self-regulate. The child experiences the regulation in the company of another and is thereby able to begin to internalize this quality. This blended intervention takes the mentalization to a level that not only includes an understanding of their emotional state but of their organizational state which can be so precarious in autistic children.

Parents have asked me to integrate their existing ABA and DIR teams and although I have had some success in bringing together previously polarized members this is a challenge on many levels. It is much easier to create a team when it is clear from the start that the treatment will be integrated. The therapists have been prepared and the team tends to attract those with a more open attitude and blended philosophies. This aspect of my experience has emphasized to me the importance of teaching integration early on in the training of new therapists.

Expanding the Prevalence of an Integrated Approach

It is important to analyze why integration is not common and what measures can be taken to expand the use of this blended approach. Early on in training, new therapists are encouraged to embrace all aspects of the method that they are being taught. Unfortunately, this frequently involves the rejection or criticism of alternate treatment models. I will suggest that in order to avoid the type of indoctrination that occurs within single model training, new therapists be exposed to the various approaches to treating autism early on in their training. Within this educational paradigm, students can be encouraged to review the empirical literature and to assess strengths and weaknesses of the current commonly used treatment models. This approach to teaching and training could profoundly decrease the resistance and contempt that currently exists in unilaterally trained therapists.

The next step to increase the use of MERIT would be to manualize the model. Manualization is essential so that training can occur on a mass level and the use of this methodology can expand. I am the director of a program for children with autism and I coordinate five children's' home programs. These opportunities allow me to train between 15 and 20 therapists each year. The scope of my training is limited however and in order to increase the number of therapists that could be trained annually, a manual is needed.

The training manual for MERIT could provide a detailed description of the theory behind the model. It would break down the implementation of the therapy into three segments. The first would be about creating the relationship. This requires a therapist who demonstrates a capacity to connect with children with autism and whose behavior indicates a warmth and respect for the children they treat. Ideally the therapist will be creative and flexible. The work requires an ability to be thoughtful and an individual who is innovative with regard to the materials, the remediation and the play.

It is also profoundly helpful to be familiar with typical development for a multitude of reasons. It is helpful to be able to roughly estimate the developmental level that a child is functioning at so that you can incorporate age based expectations for both the child and for yourself. For example if you have determined that this eight year old is functioning at the level of a two year old, receptively, that is going to influence how you talk to them. It might encourage you to sequence for them, to be more descriptive and to use affect in a more pronounced way.

Being familiar with typical children also allows one to know what types of things typical children enjoy. Invariably these are activities, songs, games and books are also going to be enjoyed by children on the spectrum as well. The therapist may have to modify them or break down each task into its component parts, but you are much more likely to find a preferred activity if you incorporate popular pastimes of developmentally matched peers.

Finally therapists can use their familiarity with typical children to attend to *how* typical development occurs. I strongly believe that it helps the development of skills if you use typical development as a guide while planning interventions. So for example knowing that typical children begin speaking by using single words I would not try to teach a nonverbal child language using phrases and full sentences without allowing for an appropriate period of practicing their single word vocabulary. I attend to the *words* that new talkers tend to use first.   Although the children I work with it may not express much communicative intent, I will assume that there is some overlap in the words that would be most practical and/or satisfying to use, thereby increasing the desire to communicate. I teach these words and phrases first. The result is often inspiring.

Typical children like to call to someone and receive attention. Children with autism also love this type of cause effect play. They may require a very exaggerated response at first but the concept is the same. I recently taught a four year old boy with autism to call his sister. Each time he called her she ran in from another room and showered him with tickles and kisses. Over and over he called her giggling with anticipatory pleasure.

Another critical goal of the manual would be introducing a blended language that does not alienate professionals that are affiliated with either of the two dominant models. In the above related example ABA and DIR therapists might use very different language to describe the same encounter. ABA therapists would call the anticipation game played with his sister an example of positive reinforcement and DIR therapists would describe this as increasing the circles of communication. Clearly there is occasionally some overlap between the two dominant models in that both groups would recognize the value of working on this skill. They would differ however in the language they used to describe the event and the process they felt was occurring.

The manual will describe the importance of being analytical with regard to the child's behavior. The therapist needs to make sense of the child's behavior and be in a constant quest for patterns. These patterns are essential in guiding the treatment and particularly the remediation. The therapist needs to look for the *way* the child makes sense and makes meaning of their surroundings, how they relate and how they regulate affect. This portion of the manual will be replete with examples and guidelines for detecting patterns.

The next step in the MERIT manual is designing the intervention. This segment will offer organized remediation tasks that are specific to a particular type of deficit. Some of the deficits addressed in the manual will be broad such as “improving attention.” Within that section there will be suggestions for how to improve visual attention, auditory attention, saliency determination, self monitoring and inhibition. There will be multiple suggestions for remediation under each domain. These are activities that I have seen effectively remediate and improve skills in these particular areas of functioning. Many of these activities are designed to be fun and most of the children I have worked with enjoy them.

As detailed as this manual might be, the therapist that is treating the child will determine to a large extent how successful the treatment will be. The work requires a great deal of patience. Therapists must be satisfied with progress that at times seems like a slow crawl. They must not only be satisfied but they must cheer. These children are working so hard and for so many hours in a day. They need to be encouraged, cherished and understood. A successful therapist is flexible and can rethink a problem on the spot. Finally there should be a level of expertise possessed by the individual who is guiding and supervising the rest of the team. Experience is priceless and comes from working with this population in a variety of contexts.

Application to Neuropsychological Evaluation

In addition to expanding the use of MERIT and manualizing this approach, significant advances could be made in the realm of testing and evaluation of autism by applying some of the principles of this model to the current approach for evaluating autistic children through testing. Children with autism frequently are required to be tested in order to receive services and in order to apply to schools. These evaluations typically provide the parents with the results of a standardized IQ as well as a list of recommendations. As many children with autism have IQ's in the mentally retarded range, the results of these tests tend to be demoralizing for parents and the recommendations tend to be general and rather unhelpful.

The principals of the MERIT approach could be applied to the testing and evaluation of autism in order to provide parents, therapists and educators with a more useful report in order to treat, interact and educate the child. Testing reports which are comprised of extremely low percentiles and discouraging descriptive labels leave parents feeling hopeless and fail to provide direction. Measures need to be applied in which specifics regarding the child's learning style are evaluated and the outcome of these measures are used in a creative way to determine the treatment. The list of recommendations should be replete with thoughtful suggestions regarding remediation based on relative strengths and all areas of processing should be more thoroughly examined in order to inform this portion of the report.

Often the child's specific areas of delay interfere with his ability to be accurately tested. Many children with autism have language processing deficits and attention issues. They frequently have a difficult time understanding the directions posed by the tester when they are delivered using the standard approach. Evaluators could be trained, using the MERIT philosophy in order to accurately “test the limits” during an evaluations. The child with autism may have to have instructions delivered visually rather than verbally or taught to “define” a word prior to the evaluation. Without such interventions many children with autism underperform on IQ tests which results in inaccurate and discouraging results being shared with parents and providers.

One boy I worked with for many years continually scored less than 50 on full scale IQ tests. Many years later he is reading, writing and active on Facebook. His mother recounts bitterly her experiences of receiving feedback on evaluations in which psychologists shared with her that he was profoundly mentally retarded. They discouraged her from having any expectations of academic achievements. She was encouraged by some to teach him practical life skills and to forego academics. Five years later her son was able to read and write. “Imagine if I had allowed those reports to discourage me from having him learn to read and write!” she shares, frustrated at a system that can so blatantly fail those who most need the help.

Psychologists trained in this model could optimize the usefulness of these evaluations. Additionally careful exploration of how MERIT can be applied to the domain of neuropsychological evaluation of autism could result in better choice of measures as well as the creation of new standardized measures that look more closely at visual and auditory perception and each child’s individual response to certain remediation strategies.

Parents as Partners – Developing a Program

The MERIT model emphasizes the importance of including parents in their child’s treatment. The model could be expanded however to manualize how this aspect of the intervention is achieved. By reviewing existing programs that help parents develop and expand reflective functioning with regard to their child, the MERIT model can be dramatically improved upon.

Parents have so much to offer when it comes to the treatment of their child. They have a wealth of information about their child's patterns, regulation, habits and idiosyncrasies. Additionally there is typically a strong affectionate bond between the autistic child and their parents. The parents want to do everything they can to help their child but frequently they get stuck in exchanges that are frustrating and ineffective. The parents of a child with autism may enable their disabled child by not raising expectations at appropriate intervals. Conversely, they may have unrealistic expectations that are age appropriate but not developmentally appropriate for their autistic child.

In her article, Minding the Baby, Arietta Slade describes the impact of a parent training program in which at risk dyads were visited by trained clinicians in order to increase reflective functioning (Slade et al., 2005). The mothers were met with on a weekly basis and success was measured by evaluating the attachment status of the child upon follow up.

> The baby's establishment of homeostasis, the first achievement of postnatal life, is vitally dependent upon the mother's capacity to first recognize, and then organize and contain his most fundamental experiences: hunger, tiredness, the need for and pleasure in contact, the displeasure in dysregulation and disorganization. In order to do this, she must be able to make meaning of his experience; this will bring

> vital order and consistency to his earliest awareness of his interior life. (Slade, 2005)

This "order" and "awareness of interior life" are exactly the capacities that are lacking in autistic children. Although Slade is referring to infants, in the case of autism most young children have still failed to acquire this vital skill. This program demonstrates how powerful early intervention can be in increasing these regulating capacities and reflective abilities. By posing thoughtful questions and modeling reflective functioning (RF) these clinicians were able to increase this skill and create a positive impact on the attachment pattern of the participating infants.

The MERIT therapist has the unique opportunity to work with parents and family members in their home to better engage in mentalization with their autistic child. These interactions with parents can be systemized and outcomes can be evaluated as they were in Slade's program. While the babies in the Minding the Baby study did not have autism, this program supports the notion of achieving measurable gains through parent – child intervention. This concept can be expanded and applied readily to an autistic population and their respective parents. The family members will benefit from modeling and guidance as engaging in RF with children on the spectrum presents with considerable obstacles. The additional component of outcome evaluation will strengthen the validity of the model and expand its use.

Another area that can be expanded on within this model is to encourage parents to promote generalization. Parents can provide a critical component in their child's program by encouraging their child to use new skills regularly. Most children with autism require repetition to learn new skills and a final step to acquiring these skills involves demonstrating mastery in everyday life. Parents need to be kept abreast of their child’s new achievements so they can encourage and support their child to practice new achievements. For instance the child that has recently learned to talk in two-word phrases has to be encouraged (even required) to expand beyond single words. The child that has learned to request rather than guide adults by the hand should not be allowed to avoid using language. Many of the skills that a child with autism acquires are hard won and to that end they require practice to maintain and encouragement to practice. It is not too dissimilar from someone in physical therapy who needs to be pushed to relearn skills. This is hard work for these children. If the development of language came naturally to these children, they would not require intervention. Having their parents aware and onboard with their goals and achievements makes an enormous difference with regard to generalization and therefore outcome.

The MERIT therapist can play the role of helping parents to remain aware of the current targets as well as giving parents specific ways in which to promote generalization. These guided interactions will be more or less determined depending on the needs of the child, the level of mastery achieved as well as the ability of the parent to interact on this level with their child. Some parents require more directive tasks and are relieved to have “homework.” This direction provides them with the initial confidence to attempt more interactions with their child and the opportunity to see their child shine.

Parents need to be involved in their child’s achievements as these are amongst some of the most precious joys in parenting a child with special needs. Nancy Crown, a psychologist and mother to a daughter with autism describes her emotional responses to her daughter's accomplishments as an "unexpected gift." She shares her response to the first time her daughter was able to jump.

> I do recall, vividly, the poignant sense of triumph her father and I shared as we sat on her bed and saw her jump. I also remember her pride and her words: "Mama I jumped! I jumped! I can jump! Daddy your face is red. Why your face is red?" I knew why. My own heart was pounding wildly with the victory of the moment. All children, and especially when maturation doesn't unfold smoothly, demonstrate the miracles of development. The small but hard won victories take on heightened meaning. (Crown, 2010)

Crown shares the moving experience of sharing in her child's achievements. Many parents avoid involvement with their child's accomplishments in an attempt to ward off the painful reality of their child's limitations. By doing so however, they are less connected with their child (who needs them so profoundly) and they do not get to share in these simple but joyous moments.

Supporting the Family

In Slade's article Mentalizing the Unmentalizable, she identifies the enormous difficulties present for parents raising a child on the spectrum. These factors must be considered both in helping parents interact with and better understand their autistic child as well as to help the family and its individual members cope with the stress of having a child with autism.

Slade recognizes that parents can benefit from support in the daily interactions with their autistic child. Additionally support can be offered to the family system as a whole, to the parents as a couple and to individual family members as needed.

In addition to helping parents to read the cues of their child with autism, seminars and support groups could be offered to parents that would empower then to advocate and arrange for appropriate treatment for their child. They could have opportunities to speak with others about their experiences in a group led by someone experienced in treating children on the spectrum using the MERIT model. Parents can be helped to understand that their child is not incapable of going through the stages that lead to a more coherent sense of self they just require an adapted approach.

Slade's article speaks to the need for parents to be assisted in the processing of the heavily charged emotional responses that they have to parenting a child on the spectrum. In order for parents to be in the best possible place to help and support their child with autism they have to attend continually to their own emotional and physical needs. In discussing this concept with me, one parent of a child with autism said, "it's like what they say to adults on the plane before take off… 'in the event of an emergency place the mask over your face first before attempting to help your child.' They are right," she agreed, "you can't help your child with autism if you don't make sure to take care of yourself."

Many parents realize this too late and at great sacrifice to their health and to their other relationships. There are higher rates of divorce among parents of children with special needs and siblings frequently struggle with conflicted feelings related to having a sibling with special needs. By addressing these stressors within the family the MERIT therapist can offer assistance with these dynamics which both directly and indirectly affect the ASD child.

According to the documentary *Autism Everyday*, parents of children with autism have an 80% chance of getting divorced, compared with 40% of all American couples (Spratling, Cassandra (June 2009). This statistic is daunting but an insightful therapist can work with the family in a way that reduces stress and improves communication. Frequently in families that have a child with autism there are feelings around the child that go unspoken and unprocessed. In many families, one parent (more frequently the mother) will be more involved than the other. This is one source of marital stress. The more involved parent will often resent the lack of involvement of the less involved partner. This resentment can lead to withdrawal from the relationship or in overt criticism of the less involved parent. The less involved parent can respond to criticism by withdrawing further until a damaging cycle develops.

Additionally there are issues around identification that present around the child with autism. Parents look at their own traits as well as those of their relatives to better understand if there were relatives on the spectrum. If they conclude that they are responsible for the genetic contribution there is often self blame and guilt.

By meeting with both parents regularly, the MERIT therapist can use the goals of the program to give specific areas for each parent to maintain involvement while acknowledging the challenges and emotional responses of the parents. In giving feedback and praise for achieving or attempting certain tasks with the child, the therapist will have an opportunity to model positive interactions, particularly praise for each parent in their efforts to help their child. The therapist can allow for the processing of feelings surrounding the child’s disability and at the same time provide hope by keeping the intervention moving in a positive and growth focused direction.

In addition to these specific challenges which relate to the parent’s relationship there are other challenges that are observed within the family dynamics. Having a child with autism places considerable stress on the siblings of the ASD child. Siblings also tend to have strong feelings that are not always readily expressed within the family unit. They often struggle with feelings of guilt similar to “survivor’s guilt” for being the unaffected child (Crown, 2010). They are frequently jealous of the extra attention that the special needs sibling requires and then ashamed of their resentment. They may bury such feelings in an attempt to spare their parents yet another hardship. In this way feelings may go unidentified and unprocessed. Siblings may benefit from having their own support group that provides them with a safe place to explore and share these powerful feelings. In this group setting they can meet and relate to other children who have this experience in common. The group provides a safe outlet for powerful emotions such as resentment, guilt and embarrassment that are frequently experienced by the sibling. In addition such a group can provide sibs with an ongoing source of support and friendship that may extend into their adult years when they become the caretakers for their sibling with autism.

Conclusion

This thesis has explored the theories behind current approaches and has introduced an integrated model that allows for a potentially rich and nuanced therapeutic treatment of children with autism. MERIT, incorporates the importance of measurable gains while simultaneously encouraging emotional growth and attachment. Remediation is enhanced by teaching through emotionally salient experiences. It offers a way for those who are more dynamically oriented to incorporate a methodology that reflects a current understanding of the neurological substrates. It offers behavioralists an approach which is mindful and connected with the child. If individuals who consider themselves strongly affiliated with either of these models read this dissertation and it broadens some small aspect of their work with these children, I will consider this dissertation a success.

MERIT has many directions in which it can expand in order to become more practical and to have a broader effect on the family as a whole. The manualization of the model as well as a more specifically designed approach to working with families can allow for the more widespread teaching and application of this integrated model. Finally, this model offers an alternative way of conceptualizing neuropsychological testing of autistic individuals and can be further developed to change the way we evaluate this population.

The cases presented above have illustrated how an integrated treatment can result in an optimal outcome for the child. These children responded as they did because of the relationship we had and because they were improving the skills necessary to communicate and engage with the world. The therapy proposed by MERIT functions as a surrogate developmental process improving the psychological range of the child as skills are taught. This model offers new potential in the treatment of autism. It offers hope that those who are most dedicated to helping children with autism can work cooperatively rather than in opposition. Those affiliated with the dominant models need not feel threatened but rather recognize that their philosophy is a part of MERIT and it has been enriched and empowered by broadening the lens.

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