

Creative Cognitive Approaches in the Treatment and Education of the Severely Autistic Child
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At its core, autism is a disorder of relating and communicating. Due to challenges with sensory processing, cognitive development, language acquisition and socialization, children with autism have severe impairment in their ability to connect and communicate with other people. Individualized Educational Programs (IEP) routinely include goals for sensory regulation, communication, behavioral problems and socialization, but not goals written with clear strategies aimed at improving cognitive functioning whereby independent problem-solving skills are developed.

What is Cognitive Functioning?

Cognitive functioning has to do with "thinking." It involves being able to process the information we take in from the environment. It is measured by the ability to understand information that is received through our sensory systems. In typical cognitive functioning, we take in factual and emotional information and organize it automatically in order to make judgments and decisions that lead to functional, appropriate responses. However, most children with autism also have difficulty with sensory processing, and as a result of this condition, these children are rendered incapable of certain cognitive skills which allow them to relate and communicate in meaningful ways. They are often unable to:

- comprehend what is being said to them and what is expected of them
- understand concepts
- predict outcomes based on the processing of information
- reflect on and learn from the past
- pick up on non-verbal cues
- understand relationships
- understand their feelings and the feelings of others
- solve problems on their own
- use imagination and "gray-area thinking"
- engage in reciprocal conversations that stay on topic and address the needs and thoughts of themselves and others.

These types of cognitive problems often explain some of the deficient functioning in other developmental areas, especially behavior and socialization. That is why it is so important for autism professionals to focus on including cognitive development goals in their curriculums. For example, a goal for cognitive advancement could sound like, "Ben will be able to navigate a problem situation (to be specifically defined) to a positive outcome without prompting, 90% of the time." This general goal addresses the child's ability to develop cognitive skills which allow them to think through a problem towards appropriate solutions and preferred outcomes. Another goal could be, "Ben will be able to demonstrate an understanding of a social story concept either through verbal explanation or behavioral demonstration." These kinds of goals focus on the child's ability to more accurately understand their world, either on a conceptual level or task-based level within the realities of their current cognitive level of functioning. The goal is to understand what level the child is functioning at, so the strategies challenge them to get to the next level, without being unrealistic. Goals that are not appropriate for a child's developmental and cognitive levels create frustration and acting out behaviors that could be avoided with more understanding of what the child is able to comprehend.

Cognitive Goals and the IEP Process

Typical IEP team members include teachers, resource specialists, occupational therapists, speech therapists and APE teachers. They often lack specific training in the area of cognitive impairment, beyond a basic understanding. They understand that the children do not generalize information easily or at all. They understand that the children are mired in the happenings of the moment, without strong skills to anticipate future events or reflect on past events. However, this knowledge is often not taken into consideration when assessing a child's behavior and academic performance for the purpose of appropriate curriculum development. The reality is that their cognitive disability affects their responsiveness to instruction styles and how material is presented to them. Without an understanding of the specifics of cognitive dysfunction, teachers and therapists will mislabel and misunderstand a child's behavior and academic abilities, as well as underestimate their actual potential.

For example, a child with low cognitive functioning might exhibit resistant behavior because they either do not understand what is being asked of them or do not understand the more complex aspects of the request (e.g., why is it necessary, how can it help me, or how does it affect other people?). They can also have such severe symptoms of sensory processing disorder (SPD) that they cannot organize and sequence the information appropriately and therefore cannot have functional reactions to requests or demands. Many children who respond to treatment for their SPD begin to function at a higher cognitive level, but the children who continue to be severely challenged by SPD will not function well cognitively. Therefore, it is important to have IEP goals that reach at their cognitive abilities despite the sensory challenges that are barriers to cognitive functioning.

The Miller Method: An Example of a Cognitive Developmental Approach to Treatment

When my son was 7, I began looking for information that dealt with the cognitive deficit in autism. There was frequent attention given to language development, behavioral therapy and sensory issues at national conferences, however there wasn't enough about how to increase cognitive functioning. But in 1999, at a national conference headed by Dr. Stanley Greenspan, I learned about an approach called The "Miller Method," developed by Dr. Arnold Miller from Boston, Massachusetts. The Miller Method is a cognitive, developmental approach to treating moderate-to-severe autism. The goals of the Miller Method are:

- to develop the child's body awareness in relation to people and objects in their environment
- to transform disordered behavior into functional activity
- to guide the child from ritualized, scattered ways of being into social and communicative exchanges
- to help children represent the world via drawing, symbolic play and expressive gestures such as speech, reading and writing.

Dr. Miller's approach is considered "developmental" because it deals with helping children shift from "action" stages of functioning to communication and representation of reality through various symbolic forms. It is "cognitive" because it deals with the manner in which children organize their behaviors, develop concepts of time and space, problem solve, and form relationships with people. I learned that my son, who at 7 had a rigid, closed way of interacting with objects and people, could be taught to expand his world and awareness through the Miller approach, which uses "action systems" as its primary means of helping children reach developmental milestones. An action system is any organized behavior with an object or event that a child produces. Such systems can be the on and off flicking of light switches, the flushing of toilets, or more complicated systems, such as stacking blocks and knocking them down. No matter how simple or meaningless a system of behavior may appear, the Miller Method sees it as an opportunity to teach body awareness/body intelligence, communication, and functional relationships with objects and people. Different

than Applied Behavioral Analysis Approach (ABA), which aims to extinguish certain behaviors, the Miller Method aims to transform disordered behavior, seeing the behavior as what that child is currently "able" to do based on his/her level of sensory and cognitive functioning. The notion of not extinguishing the behavior, instead transforming it, is seen as a humanistic approach to treating children who are functioning at the lower end of the autism spectrum.

How the Miller Method Works

The method's process is highly structured in the beginning, and then semi-structured as children begin to take over systems in ways that demonstrate they understand how things work and that they have the competence to execute the appropriate actions. The goal, however, is not only to get the child to "perform" what they are shown to do, but also to increase their understanding of what is happening and how they play a part in it. It is in these systems of actions with objects and people where children are given the opportunity to spontaneously expand on or re-create systems in ways that show that their minds are thinking beyond just what they have been shown to do and expected to repeat by rote. It is this advancement in cognitive functioning that increases the possibility for a child to more fully participate in life with more independence, creativity and spontaneity.

Language Development and the Miller Method

Words that are of most value to children with autism are words that relate to the body. This is best shown in Dr. Miller's approach to developing speech. The first words that are taught to the child are verbs. This is important because verbs define what the human body can do through movement. Knowledge of what the body can do increases a child's ability and willingness to do more with their body and to understand the movement and behavioral intention of other people, as well. When words or using signing or gestures are paired with movement, children with autism begin to develop more "intentional" behavior. This approach to language development also includes the strategy of having the children give commands to a person to do something, like "sit or stand." When the command results in the correct action taken by the other person, the child begins to learn that their words are meaningful – they can make things happen with language. This method of using language creates more of a "pull" on the child to talk, as it is much more dynamic than simply labeling a single object and playing with it. It is important to facilitate these interactions with people through the use of objects in systems that are guided by words that have movement and a "causal" quality to them; e.g., pouring water from a pitcher to a cup, or putting cans in a cupboard. It is within these "real life" systems that a low-cognitive child has the best chance of developing an understanding of the functional skills that they have, how they can problem solve on their own, and how objects and people work together.

Creative Strategies for Cognitive Development

The establishing and exploitation of whole or part systems in which the child can be taught body awareness in relationship to him- or herself, objects and other people is a foundational strategy of the Miller Method. In addition, treating the needs of the sensory and motor systems increases the child's presence in the moment and therefore allows him or her to be more accessible and teachable. Strategies that increase cognitive functioning are:

- Interruption
- "Mucking up"
- Expansion
- Elevation
- Signing

Interruption, or putting yourself into the system with the child, is an important strategy that elicits emotional responses and language from the child. This interruption "pulls" at the child's attention because it causes a spontaneous change in the rote and predictable approach to doing a task. It forces interaction with a person and elicits emotions that are awakening to the child. Once awakened in this manner, children begin to think more about what is happening, instead of performing a task by rote. If you become too focused on "task completion," getting things done becomes more important than more heightened sensory, emotional, social and cognitive responses.

Expansion, or building on a system by adding people, objects and functions to it, occurs in Miller's treatment once a child demonstrates mastery of a task and the skills involved. The strategy is aimed at promoting executive functioning (problem solving), decreasing ritualized patterns, and promoting socialization and generalization of information. For example, once a child masters the simple system of pouring a glass of water from a small pitcher into a glass, picking up the glass and drinking the water, it is time to expand the system to include more cups and more people for whom the child may pour water. Once the pouring is done, the child is taught to pick up the glasses and hand one to each new person in the system. More expansion would be the changing the location of the pouring station to another table or room or changing the substance being poured. Language is added along the way, such as having the child say "here it is" or "here is your water," with verbal responses given by each person. This expansion, which is also an example of complicating a system by adding more people, encourages more social thinking on the part of the child about what he or she has to do differently and who else is there. The changes made to systems lead to an increase in affective responses, more meaningful interactions with people, and the awareness of how things can be done differently.

Examples of spontaneous expansion/complication of a system by a child:

- Pouring "water" into glasses expands to wanting to pour "juice" into one of the glasses
- Folding towels and stacking them on the table leads to picking them up and putting them in the closet
- Rinsing food off plates leads to putting them in the dishwasher
- Putting crayons away into a jar with mom leads to asking dad to help

Signing (sign language) and narration (describing what the child is doing while he or she is doing it) are strategies used to help the child relate the manual signs to his or her own actions, as well as teach him or her another form of communication with others. This awareness of having influence on getting what he or she wants through communication also fosters the development of "self talk." Self talk is inner talk which guides us through physical actions and increases self awareness and the development of functional language and intentional, independent and spontaneous behavior.

The Mucking Up strategy aims to change the child's environment to increase alertness, scanning of surroundings and problem solving. It is also effective at reducing the tendency towards sameness and repetition. Many therapies and beliefs about treating autism encourage repetition because it makes it easier for a child to function in fixed systems with fixed expectations. Although there is a time and place for routine (the Miller Method stresses the need to establish a routine, or a predictable set of systems for a child to master), such fixed routines, if not altered through expansion and complication, will encourage an autistic child's natural tendency to be closed and repetitious. This approach impairs the development of flexibility and tolerance for normal variations in day-to-day living environments and can lead to behavioral problems when the child's environment cannot be completely controlled by caregivers. Examples of "mucking up" are 1) turning chairs over on their sides and having the child stand them up, 2) throwing items on the

floor that the child needs to complete a task with, and 3) placing things upside down that need to be righted.

The attention to the cognitive deficit is crucial for improving the lives of children with severe autism. Helping them learn to use their minds, to problem solve, and to understand their bodies and how they interact with people and objects in the environment is the foundation for building to higher levels of cognition. Although there is no way to predict how high up the developmental ladder a child will go on a cognitive level, it is important to keep IEP goals and clinical and family intervention focused on making cognitive gains as important as progress in all the other domains of functioning. School districts, educators, clinicians and parents must commit to becoming more educated about the complexity of cognitive dysfunction and how to individualize IEP goals that target the gains necessary to support a better long-term prognosis for moderate to severe autism.

About the Author

22 years in private practice in Brentwood, California. Specializing in autism, addiction/recovery issues, and relationships. Author, lecturer and media experience dealing with autism, relationships and addiction and self-esteem issues.

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