Mirror Neuron Activity and Autism by Raymond W. DuCharme, Ph.D.

Science and Technology is a topic in the May 14th issue of The Economist that is focused on new research relevance to Autism.
The international researches into the neurology of empathy are particularly interesting to those who study and treat individuals with an Autism diagnosis.
Empathy with others is hypothesized to be due to a neuron in the brain: mirror neuron. Autistic persons lack empathy.
Dr. Kristen Keysers, University of Grogningen Netherlands is one of the neurologists who believe that the mirror neuron is a significant factor when an individual's brain is engaged in some action or particular sensation or emotion is being observed in someone else. This observation is pertinent to Dr. Baron- Cohen's 'theory of mind' used to describe an individuals ability to understand the intention of others.
Two recent papers by Marco Iacoboni, University of California - Los Angeles and Leonardo Fogassi of University of Parma, Italy are also reported in The Economist article. Both researchers show that mirror neuron activity is context-dependent in a way that individuals recognize particular movements and also understand the intention behind them.
The idea is that lack of mirror neuron activity is part of the cause of the Autistic's deficit in empathy.
This thesis is also supported by the research of Vilaynur Romachandrau of the University of California, San Diego and Hugo Theort of Harvard.
It is not clear if mirror neurons are involved in the complexity of assigning motive behind the interpretations of intentional behavior.
The current levels of researches employ simple stimuli that researchers may produce and measure early states The Economist.
All interesting reading for those perplexed by the etiology behind Autistic 'social blindness'.

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Attention-Deficit Hyperactivity Disorder: A Functional Approach to Assessment and Treatment by John W. Maag and Robert Reid

Attention-Deficit Hyperactivity Disorder or ADHD has undergone a lengthy and complicated evolution in its content, diagnosis and treatment in the past 5 decades. As the name and its clinical definition changed over the years, the reaction to the disorder from the public and the medical community has also been in a constant state of flux as professionals and patients have struggled to define a working model of diagnosis and treatment. Nevertheless, it is this dynamic history that has given us a more precise tool to help patients with ADHD to lead better, more independent and productive lives.

Diagnosis of ADHD began by determining the presence of 8 out of 14 specific problem behaviors that a child may possess, and then categorizing the child based on what combination of

behaviors they exhibit most often. This method is problematic because with over 3,000 possible combinations, there is no typical kind of ADHD and what may have been a viable treatment in one case, may be extremely detrimental in another similar case. Over time is was found that compartmentalization of only a child's symptoms was not enough to affect an adjustment on behavior in situations outside of a clinical controlled setting, thereby not allowing the children to adapt to the challenges of life outside an institutional setting. More factors needed to be considered for effective treatment models to be developed.

A functional approach to ADHD assessment was then introduced that focused on two main factors, a child's individual-specific deficits or excesses, and the ecological variables that may cause those deficits or excesses in daily behavioral patterns. Emphasis was now being placed on specific individual assessment of the child's behaviors, and treatment plans were tailored to target those specific problem behaviors thru behavior modification. Also the child's background, family history, genetics and physical abilities were now being studied to determine what if any affect those factors had on the child's behavior patterns.

Now that this individual-specific research was in place, a model for classification of performance deficits was developed based on four general categories: Behavioral skill deficits, cognitive deficits or distortions, problem solving deficits, and self-control deficits. When an unwanted behavior is observed, it can be applied to this model to determine the correct course of intervention and modification based on one of the four categories. Behavioral skill deficits such as an inability to act appropriately in certain situations can be corrected by using techniques such as detailed instructions, modeling, rehearsal, role playing and reinforcement. Cognitive deficits or distortions are the result of the absence or dysfunction of reflective thinking governing behavior and can be corrected by helping the child to identify, reality-test and modify their distorted beliefs. Problem-solving deficits can manifest in a child as poor organizational skills and inefficient strategies while attempting certain tasks. These children need to be taught to implement problemsolving strategies when faced with challenging, multi-step tasks. Finally, a child who fails to inhibit inappropriate behaviors or has difficultly in controlling their arousal level during certain situations may be afflicted with self-control deficits which require introducing the techniques of self-monitoring, evaluation, reinforcement and instruction to allow them to regulate their future behavior.