

## Commentary

# Social Development in Individuals with High Functioning Autism and Asperger Disorder

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**DESCRIPTORS:** autism, social behavior, neuroscience, physiological, intervention

Until recently, and even in many current research circles, social behavior in individuals with autism spectrum disorders (including those with high functioning autism or Asperger disorder) was considered to be unmodifiable. Mundy, Henderson, Inge, and Coman (this issue) and McGee and Daly (this issue) shed new light on this concept of intractability, suggesting that environmental interventions such as incidental teaching or pivotal response treatment (Koegel & Koegel, 2006) might be able to modify cornerstone pivotal areas of the disorder, resulting in widespread and steady improvements in social development. Mundy et al. go one step further and suggest that key interactions between behavioral and physiological variables may take place, striking at the very heart of the disorder. Specifically, Mundy et al. discuss modifier variables that might influence the expression of physiological/genetic variables. For example, self-regulation and motivation could be key in producing favorable environmental interactions within a transactional model, leading to steadily developing improvements in social skills. That is, each favorable environmental interaction has the potential to make subsequent interactions easier, resulting in both improved skill and improved motivation to interact socially.

Both McGee and Daly (this issue) as well as Mundy et al. (this issue) discuss how these variables can relate in a large way to quality of life. McGee and Daly provide data to show how interventions can be developed to teach social communication skills that can help individuals with autism fit in with their peers within inclusive educational environments. Such favorable social inter-

actions can result in not only improved social skills, but also in friendship developments.

In contrast, Mundy et al. (this issue) further discuss how variables such as negative self-evaluations can result in depression and anxiety, while changing such evaluations through interventions such as self-monitoring, may produce positive self-evaluations. Such favorable self-evaluations can result in improvements in attention span, reductions in anxiety, and reductions in depression.

Similarly, Mundy et al. (this issue) note how motivation to interact socially may be a critical modifier variable. Individuals who are motivated to interact socially, but who do not have the requisite skills to do so, may become highly anxious. In contrast, individuals who have both low motivation to interact socially and poor self-management capacity may be perceived as aloof, which (interestingly) is how Kanner (1943) first described individuals with autism. Thus, interventions such as self-monitoring to help develop self-regulation and pivotal response treatment to develop motivation to interact socially have the potential to produce favorable environmental teaching interactions in a transactional model of development (Koegel & Koegel, 2006). For example, a child who becomes motivated to ask questions may receive answers to those questions that will aid the child's skills for subsequent interactions. Each new skill then has the potential to make subsequent social interactions sequentially easier, thus further improving motivation to interact socially. Through neural plasticity, especially in very young developing children, this has the potential to produce favorable neurological changes in key areas of the brain. Mundy et al. discuss specific neurological/genetic areas that would be extremely interesting to measure and monitor with respect to both neurological development and behavioral expression.

Thus, it seems possible that within the relatively near future, a once seemingly intractable neurological disability such as severe social impairment in high functioning autism or Asperger disorder might have the potential to one day become essentially cured through interventions at both the behavioral and the physiological levels. This

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Preparation of this article was facilitated by funding from the Eli and Edythe L. Broad Foundation and the National Institute of Mental Health (MH28210, Robert Koegel, PI).

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is extremely exciting and suggests that this may be an essential and critical area for future research to pursue.

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