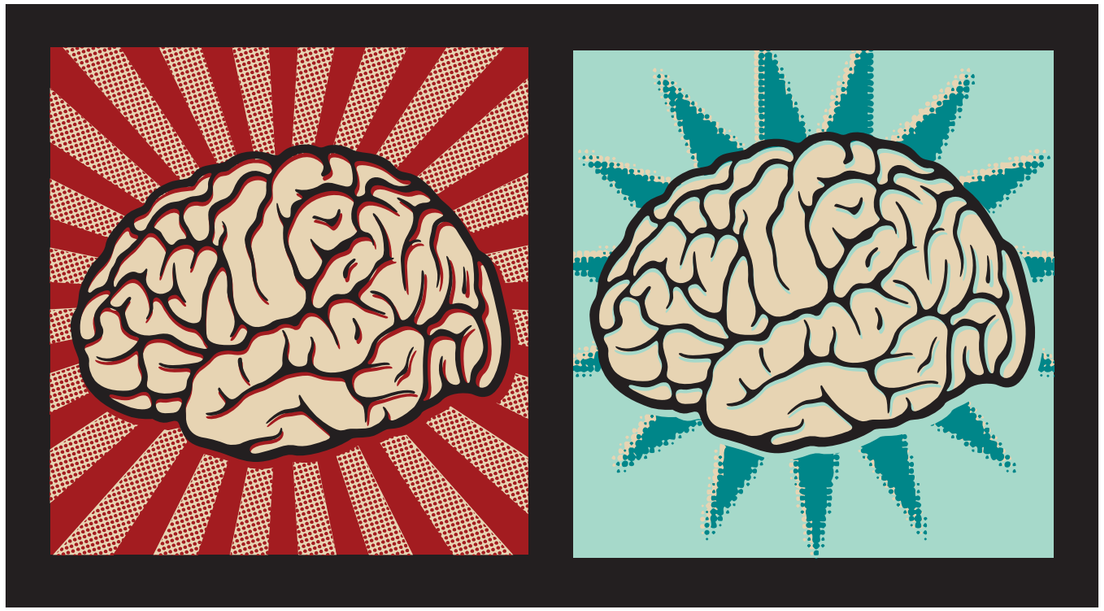

AUTISM AND ASPERGER'S SYNDROME

DIFFERENCES AND SIMILARITIES

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Recognizing Autism and Asperger's Syndrome

As we have seen already in this issue, both autism and Asperger's Syndrome (AS) are diagnosed on the basis of difficulties in social development and in communication, along with unusually strong interests or "obsessions," and a preference for repetitive behavior (or an aversion to change). People with autism and AS take notice quickly if anything in their environment changes, with a strong desire for objects to go back to their original positions.

These two subgroups differ in that autistic people may have additional learning difficulties, with a below average IQ, while those with AS have an average (or even above average) IQ. Also, in autism there is invariably language delay; i.e., a child does not talk in single words by 2 years old, or use phrases by 3 years old. With Asperger's, the child speaks on time.

Autism is easier to recognize than AS. An autistic child might be so avoidant of others that it is plain to see his or her social difficulties. The child might play with a favorite toy under the table during meal time, or escape from a social gathering to watch his or her favorite video, over and over again, keeping a distance and avoiding eye contact when approached.

In contrast, a child with Asperger's has social difficulties that are more subtle. The child may try to interact, but the encounter becomes awkward, with intrusive questioning of others. There is often insensitivity as to whether the other person wants to continue the line of questioning. Sometimes, they talk at the person about their favorite topic (e.g., the names of all deep water fish) long after the listener has become disinterested. They fail to pick up the non-verbal signals that the listener wants to change the subject or leave the conversation. Although, calling the interaction a "conversation" is a misnomer, since the child or adult with AS is typically just holding a monologue. When Asperger's children try to play with others, they might seem bossy and controlling. It is not just in their speech that they make no space for others, but also in their behavior. All interactions are on their terms—lacking reciprocity.

Why Are Autism and AS Diagnoses on the Rise?

Although the media are currently highlighting the huge debate on the link between the MMR vaccination and autism, there is no strong evidence for this link. For example, in Japan, although the rates of autism were rising (as they have been worldwide), they continued to rise even after the MMR public health program was withdrawn.

The rate of the autism spectrum is best estimated at 1%, according to a 2006 study in the *Lancet*. This figure certainly represents an increase over earlier figures, as the text book figure for the prevalence of autism in 1978 was 4 in 10,000. This increase is likely due to greater awareness, better diagnosis, growth in services and professionals who can diagnose, and a broadening of the diagnostic criteria to include Asperger's syndrome.

Tools for Autism and AS

Practical tools are available for recognizing autism and for intervention. One of these is the Checklist for Autism in Toddlers (CHAT), used to screen for autism at 18 months of age and used by medical staff. This measurers whether the child is reaching normal milestones (such as using a pointing gesture to share interest, or showing pretend play, both of which are delayed in autistic children). The CHAT is being revised to improve how well it can detect autism and AS at the earliest age. Early detection assists in fast-tracking children into intervention at a point in their lives when the brain is developing rapidly.

What are the Brain Differences?

In autism and Asperger's syndrome, there exists a disconnect between the superior processing of some kinds of information (e.g., detecting detail or memory for detail) and the major disability in processing other kinds of information (e.g., detecting other people's emotions or realizing what they might be thinking). Brain scans (fMRI) have revealed that the amygdala (a region in the limbic system of the brain, sometimes thought of as the "emotion center") and the medial prefrontal cortex (in the frontal lobe of the brain) are under-active in people with autism spectrum disorders when they are trying to decode another person's facial expression, or figure out what someone else might think or intend. Although these are not the only differences in the autistic brain, they do demonstrate that at the core, autism and AS are neurological.

Are People with Asperger's Syndrome Unfeeling?

People with AS can portray reduced empathy, which may manifest as extreme callousness—such as not offering words or gestures of comfort to someone who says they have been recently bereaved. But whereas a psychopath knows very well that the other person is upset, but does not care, in the case of the person with AS, reading the cues to realize the other person's emotional state can be challenging. When it is pointed out to them that someone is upset, they typically do care.

People with AS also differ from psychopaths in being very moral, wanting to stick to the letter of the law, and being highly principled. Some people have likened Asperger's to a kind of social dyslexia (a difficulty in reading emotions and other people's minds) and both autism and AS have been characterized as involving degrees of "mind blindness."

Family Patterns

Autism and AS run in families. If there is one child who has a diagnosis on the autistic spectrum, the likelihood of another child also having a diagnosis is about 5-10%, higher than the general population rate. Molecular genetic studies are focused on identifying the key genes that might play a role in increasing the risk of a diagnosis. Twin studies have established that it is not 100% genetic, since even among identical twins where one has autism, the likelihood of both twins having autism is only about 60%. This means there must also be an environmental component. Exactly what this factor is remains unknown.

Particular characteristics among the parents might be indicators that, as a couple, they may be at risk of having a child with autism or Asperger's syndrome. A team at Cambridge University found that fathers and grandfathers of children with autism are more likely to work in the field of engineering. This may be because in earlier generations there was a talent in "systemizing." Systemizing is the drive to figure out how systems work, which involves an excellent eye for detail. The research team is currently carrying out a study that will look at rates of autism in children of parents in different occupational groups.

Simon Baron-Cohen, PhD, is director of the Autism Research Centre, Cambridge University, UK. His books include *Autism: The Facts* (OUP), *The Essential Difference* (Penguin), and *Mindblindness* (MIT Press).

Resources for Clients

Parents and teachers may find the educational DVD, *Mind Reading*, useful in teaching emotion recognition. The program shows actors expressing every human emotion in the face and voice. For further information, see www.jkp.com/mindreading. *The Transporters* is a children's cartoon about characters who are vehicles (trains, tractors, cable cars, etc.,) but with human faces grafted onto the vehicles, so that the child with autism is drawn to watch the predictable, mechanical movement of the vehicles, but also is exposed to human faces showing emotions (www.transporters.tv). Both of these programs have been shown to lead to improvement in emotion recognition and are examples of teaching materials that can be used by families at home.