

Asperger Syndrome

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### Abstract

This writing looks at Asperger's syndrome which is considered one of four of the pervasive developmental disorders listed in the DSM-IV (TR). It is also considered by some to be a higher functioning form of autism. It is characterized as having impairments in social interaction, activities, and interests. The leading theory of both AS and autism is that the concept of "theory of mind" is limited which affects normal regulation or understanding of emotion of self and toward others. AS differs from autism in that language and cognitive development is not affected as it is in autism.

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## History

Hans Asperger (1906-1980), an Austrian pediatrician, first described characteristics of what would later be called Asperger's syndrome, in a 1938 article. He noticed that certain children ignored nonverbal communication cues from others, lacked empathy for others, often took words too literally, and had a social awkwardness and physical clumsiness about them. Asperger took a risk in publicizing the writing which took a stand against the eugenics policy in Nazi-occupied Austria which called for sterilization and killing of those who were deemed as inferior. He argued that children who are unusual are not necessarily inferior. In 1944 he published another paper describing in more detail specific features of the disorder which he labeled as autistic psychopathy. It has been speculated that Asperger himself struggled with this disorder (Attwood, 2007).

Eventually autistic psychopathy became known as autistic personality disorder, and it was not until 1981 that the name of Asperger's syndrome was mentioned in a paper by Lorna Wing, a British psychiatrist specializing in autism spectrum disorder. Ten years later in 1991 Uta Frith translated Asperger's original 1944 work into English. Ironically, Leo Kanner, another Austrian born physician who was practicing in America through the 1940's, was also publishing on other areas of the autism spectrum. Kanner specialized in early childhood and called the disorder *early infantile autism*. Although the two men never met or corresponded, they both used the term autism to describe the symptoms. Wing later realized that the two diagnoses did not entirely match and began to distinguish the two disorders. In 1989 the first diagnostic criteria was developed by two groups: Gillberg & Gillberg, and Szatmari, Bremner, & Nagy (Attwood, 2007).

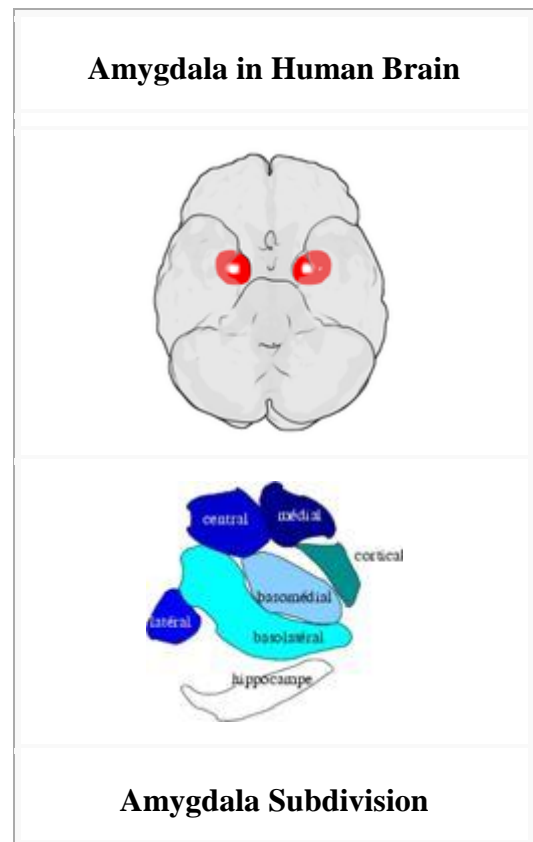
The pathology was included in the 1992 10th edition of the World Health Organization's diagnostic manual International Classification Diseases (ICD-10). In 1994 it was added into the 4th edition of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) and it was updated in the DSM-IV (TR) in 2000. There is currently much debate as to what will happen with AS in the DSM-V. Due to the similarity of AS to Higher Functioning Autism (HFA) some feel it should be removed, while others are calling for its removal arguing that it is simply a different cognitive style rather than a disorder. Still others debate that distinct differences call for two separate disorders.

Today Asperger's syndrome is currently categorized in the DSM-IV (TR) as a pervasive developmental disorder, characterized by delays in the development of basic functions in socialization and communication. The term autism spectrum is also used at times for this group of disorders which maintains five categories; Autism, Asperger syndrome, Childhood Disintegrative Disorder, Rett Syndrome and Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS). Autism Spectrum Disorder (ASD) is a proposed revision to the DSM-V, which will be released in 2013. The new diagnosis is proposed to encompass all five current diagnoses, but rather than categorizing them as such, they will be rated on dimensions of severity and associated features. An individual with an ASD diagnosis will be evaluated in terms of severity of social communication symptoms, severity of fixated or restricted behaviors or interests, and associated features ([www.autism.org.uk/DSMchanges](http://www.autism.org.uk/DSMchanges)).

## Emotion Regulation

Various problem behaviors exist with Asperger's syndrome from an emotions or human attachment perspective. A lack of social or emotional reciprocity, limited or inappropriate facial expressions or body language, inability to feel or sense empathy in self or others, and weak social interaction are all descriptive of AS. Also a lack of understanding and/or regulating emotions, feelings, and attachment to others is symptomatic. Current research shows that about 65 percent of adolescents with AS also have an affective or mood disorder with anxiety and depression respectively leading the way. Research also indicates a higher risk for adolescent's with AS of developing bipolar disorder, paranoia, conduct disorders, and obsessive compulsive disorder, than those without AS (Attwood, 2007).

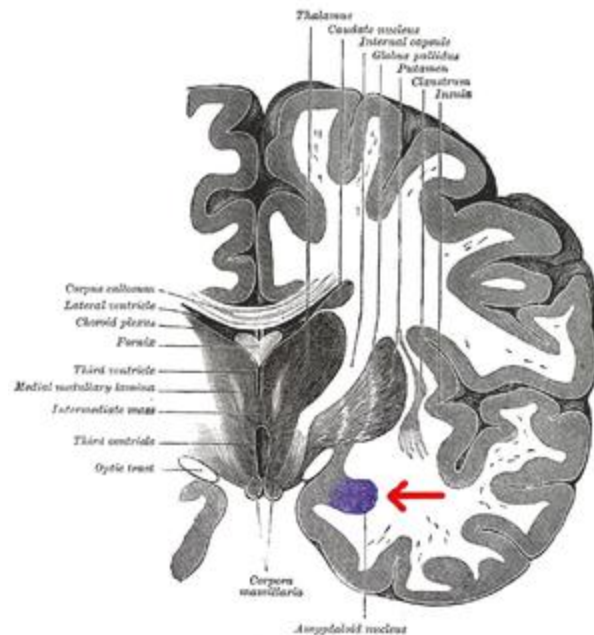
Today's neuro-imaging technology has clearly identified that both those with AS and autism show structural and functional abnormalities of the *amygdala*, which is located within the medial temporal lobe in the limbic system of the brain. This area is associated with recognition and regulation of emotions, specifically anger, fear, anxiety, and sadness. Its primary role is to perform the processing and memory of emotional reactions and experiences. Impairment in processing, understanding, or describing emotions is referred to as *alexithymia*. It is not considered a mental disorder in itself, but rather a dimensional personality trait (Attwood, 2007).



(Figure: Wikipedia-Amygdala)

Alexithymia is a concept of mind which is inversely related to emotional intelligence. There is debate that alexithymia is a consequence of another psychological distress, such as from trauma, or considered a stable personality trait. Characteristics of alexithymia are difficulty identifying and describing emotions, distinguishing between affect and body sensations caused by emotional arousal, and restricted imagination, dreams, and fantasies. Alexithymia often co-occurs with other disorders such as PTSD, eating disorders, substance-use disorders, sexual disorders, and mood disorders, but its highest prevalence is found in AS and autism. Research suggests that there may be a higher prevalence among males than females.

It is also suggested in studies that people with AS maintain signs of having *prosopagnosia*, also called face blindness. This is a disorder that affects face recognition, where the ability to recognize and perceive faces are impaired, while maintaining the ability to recognize other objects are not affected. The fusiform gyrus, which is located in the temporal lobe is the area of the brain affected. People with AS tend to process faces as if they were objects focusing on individual components, while missing the complete emotional expression (Attwood, 2007).



Amygdala is shown in purple.

(Figure: Wikipedia-Amygdala)

## Cognitive Theories

There are three major theories that help to explain Asperger's syndrome; *executive function*, *weak central coherence*, and *theory of mind*, with the last being the strongest. The executive function system is a cognitive system that controls and manages other cognitive processes which are generally carried out in prefrontal areas of the frontal lobe. Executive function can also affect control of emotions. The affected cognitive processes of the executive function can include:

- working memory
- planning and organizing
- problem solving and verbal reasoning
- inhibition and impulse control
- mental flexibility, understanding complex or abstract concepts
- multi-tasking, time management, and prioritizing
- initiating new strategies
- self-monitoring and self-reflection

The weak central coherence theory attempts to explain why some people with autistic tendencies often show extraordinary ability in subjects like math and engineering, yet struggle considerably with communication and language skills, often remaining socially inept and isolated. Uta Frith advanced this theory in the late 1980's by noticing that people with autism often break down things into the smallest possible details. She posited that autistic children actually perceive details better than normal people, but the problem is in understanding the overall picture. This can explain the overwhelming inability to function in a room full of people, as the pattern of the tiles suddenly becomes more important and easier than evaluating all the faces in the room. Interests are very narrow, with a preoccupation of parts, trivial details, specific patterns, strict rules of symmetry, and specific order are often the obsessions of autism.



Theory of mind is the ability to understand that people have separate mental states which differ from one's own. The person with Asperger's syndrome (and autism) has little to no concept that people's actions are guided by their own knowledge, thoughts, intents, beliefs, and desires. Having a theory of mind is crucial in understanding the behavior of others and therefore the ability to communicate and interact effectively. Most children begin to develop theory of mind by 18 months by using forms of symbolic play. By age 3 they are beginning to understand the differences between their own mental states and those of others. By age 4 or 5 children begin to realize the differences between fantasy make-believe and reality; as well as understanding that people's actions are initiated by their own thoughts and desires (Nolen-Hoeksema, 2008).

There are three distinct levels of theory of mind. The first order involves understanding of one's own mental state. The second level is concerned about understanding the states of other people. Most autistic people struggle with at least one or both of these first two levels. However, the third level is involved with more complex processes of theory of mind, specifically the interpretation of complex social situations, based on subtle information. This is the level that AS people fall and it is why it often goes unnoticed (Spek et al., 2010).

Adults with Asperger's syndrome tend to have an extreme sense of honesty, social justice, ethical and moral principles. However, they have difficulty in distinguishing between deliberate or accidental actions, in developing conflict management skills, changing a decision once it is made, and admitting being incorrect or losing. Those with AS are unlikely to ask for or accept help with problems or questions. They have rigid thought processes, and tend to develop a different form of self-consciousness and embarrassment, with humor often misunderstood. Due to using intelligence rather than intuition, those with AS often take longer processing time with social interactions which can be physically and emotionally exhausting (Attwood, 2007).

Although language is not usually delayed with AS, it does arrive with some peculiarities such as prosody, meaning rhythm and stress of the voice, talking too much or too little, abnormal inflection, repetitive patterns of speech, lack of following conversation, and idiosyncratic use of words. However, the area of language which causes the most problem and is the most obvious is the impairment of comprehending the difference between literal and implied meanings of words.

This figure shows how problems in perception can lead to difficulties as individuals with Asperger’s syndrome interact within their environments. The top row from left to right shows limitations in understanding others, and in one’s own self-awareness (center), both areas affecting relationships, and on the right-top are difficulties in the non-social domain (executive functioning) which affect general life skills (Gaus, 2010).

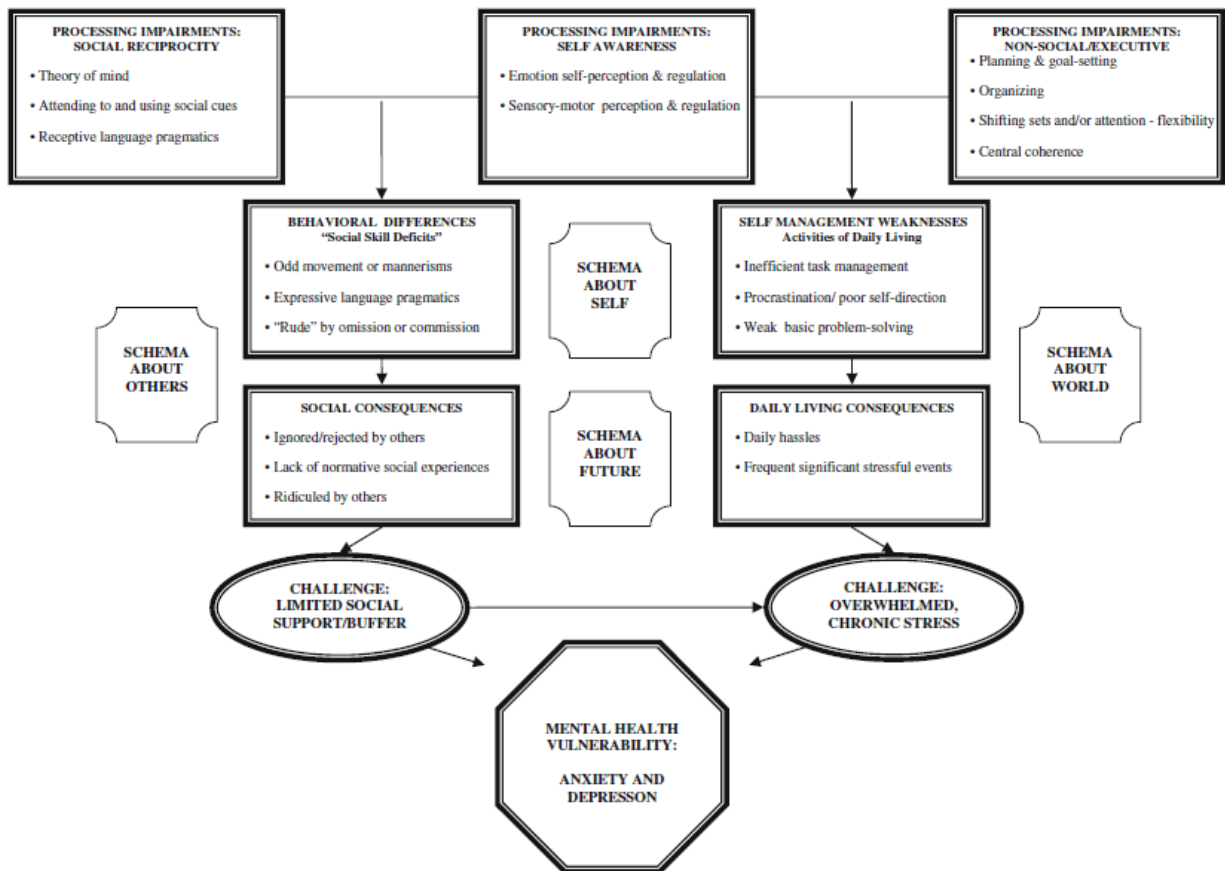


Fig. 1 Mental health vulnerability in adult Asperger syndrome

## Assessment

Distinct differences are difficult to determine between Asperger's and higher functioning autism due to multiple assessments currently being used. Normal cognitive and language development is often seen in early childhood in AS and is not often diagnosed until middle childhood. By then it is difficult to say what subtle problems may have gone unnoticed which early intervention may have combatted. Autistic problems are noticed much earlier due to a noticeable delay in early cognitive and language development. Verbal IQ is often higher than performance IQ in AS, which is the reverse with HFA. Those with AS also have a unique and particular way of communicating often described as eccentric, odd, and idiosyncratic. HFA people are described as simply aloof and passive (Kaland, 2011).

Aside from differences in language development, there are differences in cognitive processing strategies. Those with AS maintain preference for visuospatial processing, while those with HFA use linguistic approaches. Using magnetic resonance imaging (MRI) studies of grey matter in the brain has shown that differences in people with AS compared with control groups were sparser than those with HFA and control groups. Also the distribution and direction of grey matter were distinctly different between AS and HFA (Yu et al., 2010). The diagnostic criteria (DSM-IV-TR) for both autism and Asperger's syndrome are located in the appendix.

The most used adult assessment for AS is the Adult Asperger Assessment which combines the Autism Spectrum Quotient assessment and the Empathy Quotient assessment. It measures impairment of social interaction, restricted or repetitive patterns of behavior, impairments in verbal or non-verbal communication, and impairments in imagination. The AAA was developed between 2001 and 2005 by Baron-Cohen, Wheelwright and associates (Baron-Cohen et al., 2005).

Seven screening assessments are currently being used for children with AS (Attwood, 2007).

- Australian Scale for Asperger's Syndrome (Garnett & Attwood 1998)
- Asperger Syndrome Diagnostic Interview (Gillberg et al 2001)
- Asperger Syndrome Diagnostic Scale (Myles, Bock, & Simpson 2001)
- Autism Spectrum Screening Questionnaire (Ehlers, Gillberg, & Wing 1999)
- Childhood Asperger Syndrome Test (Scott et al 2002; Williams et al 2005)
- Gilliam Asperger Disorder Scale (2002)
- Krug Asperger's Disorder Index (Krug & Arick 2002)

There are few assessments specifically designed for Adult ToM testing. One of the first, the Strange Situation test, was developed in 1994 by Happe. It asks the subjects to provide an explanation for an ambiguous action in a short story. Another approach has been in using false belief tasks in stories and cartoons in order to measure ToM sensitivity. However, these traditional tests have shown difficulty to accurately measure adults, as passing them may not necessarily indicate normal ToM functioning. By adulthood the use of other mental processes, aside from typical ToM processes, might be used to compensate for the impaired ToM (Rutherford et al., 2002).

Two other tests have been since developed by Baron-Cohen and associates. Reading the Mind in the Eyes test (2001) presents subjects with photographs of the eye region of the face and they must choose adjectives to describe the mental state of the person pictured. Another is the Reading the Mind in the Voice test (2002) which plays vocal audio samples to the subject and they must choose adjectives to describe the mental state of the speaker (Rutherford et al., 2002).

## **Psychotherapy**

Children and adults with Asperger's syndrome can benefit from psychotherapy but it needs to be based on a thorough understanding of the therapist of the impaired ability of the client to communicate thoughts and feelings. The rapport is crucial, and clients with AS will either instantly, and permanently, like or dislike other people. Difficulties with pragmatic use of language, conversational turn-taking, and knowing how and when to interpret, is a problem with an AS client. Asperger's clients need longer cognitive processing time and a clearly structured and defined systematic approach, also shorter but more frequent sessions are better.

Traditional therapy relies on face to face sharing of inner thoughts, which is very difficult for an AS client. Self-analysis is not easy and the focus should be on developing a greater maturity and insight into thoughts, feelings, and intentions of others. Thoughts and memories of being teased, bullied, and misunderstood are often playing in the back of the clients mind. Much work needs to be done on building self-esteem, appreciation, and value of the self, as self-doubt and self-criticism is a constant internal battle. The client needs to understand that they are different rather than defective. The client understanding that others have various characteristics and personality traits is an important part of therapy.

The first stage is self-identity of the client which is to understand the nature of the disorder and the specific characteristics that are associated in his/her own profile. The second step is to understand that others have very different character traits and personalities than they do, which is difficult to comprehend with an AS person. The third step is to help the client to develop a vocabulary and understanding of these different characterization and personalities (Attwood, 2007).

Seeing the nature of AS has little to do with poor parenting skills early in life, and the problem with understanding internal feelings and emotions, psychoanalytic therapy is not often used. Most of the work needs to be in educating the client on cognitively understanding the outside world of others inner feelings. Behavior modification to change problem habits and to develop pro-social skills which focus on problem solving and life skills is beneficial. Social skills groups are often used for various age levels. Role-play as an experiential component is ideal as the client can practice learned techniques in individual or group sessions. Art being used as a means of expression is valuable, as well as use of comic strip conversation. Written communication may sometimes be more productive than verbal face-to-face conversation (Attwood, 2007).

Most AS clients who pursue therapy have initiated it due to encouragement or an ultimatum of a close relation's request. If therapy is self-initiated it is often in response to depression, anxiety, obsessive-compulsive, or a mood disorder which is caused or associated with the AS. Pharmacotherapy can be helpful in handling these co-morbid conditions. However, they are not effective in treating the core cognitive deficits and impaired social interactions. Learning how to read and understand others as well as the self is a long and difficult path for a client with AS, and a humanistic relational approach is necessary for building trust and rapport between the therapist and client. As the two primary goals of the AS client are the same as any other client and that is to understand who you are, to accept who you are, and then move forward by learning how to manage the problem (Ramsey et al., 2005).

## Appendix:

### DSM-IV-TR Diagnostic Criteria for 299.00 Autistic Disorder

- A. 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. a 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 of interest)
    - 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 gesture 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 by at least one of the following:
    - a. encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus
    - b. apparently inflexible adherence to specific, nonfunctional routines or rituals
    - c. stereotyped and repetitive motor manners (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 3 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-IV-TR Diagnostic Criteria for 299.80 Asperger's Disorder

- A. Qualitative impairment in social interaction, as manifested by at least two of the following:
  - 1. 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
  - 2. failure to develop peer relationships appropriate to developmental level
  - 3. a 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 of interest to other people)
  - 4. lack of social or emotional reciprocity
- B. Restricted repetitive and stereotyped patterns of behavior, interests and activities, as manifested by at least one of the following:
  - 1. encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity of focus
  - 2. apparently inflexible adherence to specific, nonfunctional routines or rituals
  - 3. stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)
  - 4. persistent preoccupation with parts of objects
- C. The disturbance causes clinically significant impairment in social, occupational, or other important areas of functioning.
- D. There is no clinically significant general delay in language (e.g., single words used by age 2 years, communicative phrases used by age 3 years).
- E. There is no clinically significant delay in cognitive development or in the development of age-appropriate self-help skills, adaptive behavior (other than in social interaction), and curiosity about the environment in childhood.
- F. Criteria are not met for another specific Pervasive Developmental Disorder or Schizophrenia.

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