

A Need to Redefine Autism

David Rowland*

ORCID, Canada

Corresponding Author*

David Rowland
CORCID, Canada,
E-mail: david222@hush.com
Tel: +1 5193414684

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Abstract

Currently, one in 59 children (1.7%) are being diagnosed with Autism spectrum disorder (ASD). During the 1960s, one in 250 (0.4%) were diagnosed with autism. This apparent 420% increase in reported cases is largely due to misdiagnoses occasioned by changing criteria. Phenotype diagnosing has been abandoned in favor of ticking off symptoms on a checklist with minimal understanding of cause and effect. Dissimilar conditions are now being included under a broad ASD umbrella category. This study explains the unique neurophysiological cause of autism, redefines autism in terms of this unique cause, and provides differential diagnostic criteria plus a litmus test that enables you to know for certain if someone suspected of being autistic has been correctly diagnosed.

Keywords: Autism • Autism spectrum disorder • Hyperfocus • Neurophysiological

Introduction

It is generally accepted that one in 59 children (1.7%) are diagnosed with Autism Spectrum Disorder (ASD). The oft-quoted figure during the 1960s was one in 250 (0.4%). A 420% increase suggests that autism may have reached epidemic proportions. Alternatively, there may have been an epidemic in false diagnoses of autism. My research suggests that the latter hypothesis may be the valid one.

In 1964, I was misdiagnosed as having a personality disorder, by a psychiatrist at the University of Toronto. The correct diagnosis should have been asperger syndrome (high functioning autism). Since then, the virtual pendulum has swung far into the opposite direction. False diagnoses of autism could now be at an all-time high.

Literature Review

A 10-year Swedish study in 2015 concluded that although the prevalence of the autism phenotype has remained stable, clinically diagnosed autism spectrum disorder has increased substantially [1]. A 2016 study reported that many children originally diagnosed with autism spectrum disorder were later found not to be autistic [2]. A comprehensive 2019 study in JAMA Psychiatry indicates that autism is being significantly overdiagnosed [3]. Dr. Laurent Mottron, co-author of this most recent study, has expressed these concerns: "The autism category has considerably overextended ...most neurogenetic and child psychiatry disorders that have only a loose resemblance with autism can now be labeled autistic ... you could not have ADHD and autism before 2013; now you can" [4]. Doctors now tend to label as autistic anyone who simply has ADHD (or OCD) and poor socialization.

If autism is being significantly overdiagnosed, then studies relating to the genetic cause of autism may be questionable because the correlations found could be to conditions other than autism [5-9]. Overdiagnosing also

means that many are being denied treatments for whichever conditions they actually have.

The Misleading Spectrum

In 2013, the American Psychiatric Association merged the following four disorders under the umbrella of Autism Spectrum Disorder (ASD): autism disorder, asperger syndrome, childhood disintegrative disorder, and Pervasive Development Disorder not Otherwise Specified (PDD-NOS). Autism now includes a spectrum of conditions of uncertain similarity. Professionals diagnose by ticking off symptoms on a checklist, without questioning the possible causes of said symptoms.

The American Psychological Association defines autism spectrum disorder as "a neurodevelopment disorder that is characterized by difficulties with social communication and social interaction and restricted and repetitive patterns in behaviors, interests, and activities" [4]

The spectrum idea implies that there can be different kinds of autism and varying shades of autism. My research strongly suggests that this is not so. Autism is 100%. Either one is autistic, or s/he is not.

Autism is simply a neurophysiological idiosyncrasy. The only thing different about an autistic brain is the specialized way in which it processes information. As such, autism does not fit the medical definition of disorder, i.e., a pathological or diseased condition of mind or body. Michelangelo, Mozart, Darwin, Jefferson, Edison, Tesla, and Einstein were most probably autistic and can in no way be considered to have been suffering from any mental pathology.

Autistic Traits have a Common Cause

From intimate knowledge of how my own autistic brain operates, and from studying the behaviors of three autistic family members and seven other autistic people, I have compiled a list of 44 traits that all 11 of us have in common. These autistic characteristics appear to have a single cause: hyperfocus, the perpetual and unrelenting state of intense single-minded concentration fixated on one thing at a time, to the exclusion of everything else. Hyperfocus thus appears to be the unique and defining causal state of autism that creates its observed characteristics [10,11].

Hyperfocus keeps a person trapped in the mental/intellectual part of his mind with no ability to divide his attention between two thoughts (or stimuli), with the consequence that he never gets to feel his emotions. He can only process his emotions intellectually, after the fact. Without the ability to feel emotion, it is impossible to be spontaneous, to be emotionally available, to feel connected to others, or to be aware of how one is perceived. Anthony Hopkins spoke for every autistic person when he is reputed to have said, "My whole life I have felt like an outsider".

Hyperfocus prevents a person from running two mental programs simultaneously. One takes everything you say literally because he cannot also be questioning how you use words. Similarly, an autistic person cannot also be picking up on subtleties or social cues. She cannot lie spontaneously because that would require dividing attention between the truth and a falsehood.

Hyperfocus can be so intense that any sudden interruption (e.g., a door opening, an unexpected question, accidentally dropping something) shatters the thought pattern and can be experienced as anywhere from annoying to devastating. Loud noises instantly switch hyperfocus to the noise, which is then experienced with far more intensity than does someone with a neurotypical brain.

Meditation is impossible for someone trapped in hyperfocus, because meditation requires letting go of focus. It is also doubtful that an autistic person can be hypnotized. Twice I tried but was unable to divide my attention between the instructions and the experience I was supposed to be having.

Autistic Hyperfocus

Hyperfocus is the unique and defining characteristic of autism that is responsible for all 44 of the documented traits listed below. Hyperfocus is the perpetual and unrelenting state of intense single-minded concentration fixated on one thing at a time, to the exclusion of everything else [10].

Mental traits

- Perpetual hyperfocus: intense single-minded concentration
- Trapped in thoughts
- Mind always busy, tendency to overthink.
- Passionately pursues interests
- Amasses encyclopedic knowledge about areas of interest
- Self-awareness but no social awareness
- Interruptions trigger agitation, confusion, or anxiety

Sensory overload

- Hypersensitivity to noise and other sensory assaults
- Experiences anxiety from being mentally trapped in noise/assault
- Overwhelmed by overhearing unwanted conversations
- Frequently overwhelmed by too much information
- Coping with computers/electronics, filling in forms may cause anxiety
- Sensory overload makes it impossible to think or focus
- Has difficulty listening to radio or talking with others while driving

Emotional traits

- Feels like an outsider
- Unable to feel emotion
- May have physiological responses instead of emotion
- Processes emotions intellectually
- Anxiety bypasses the intellect to warn of unprocessed emotions
- Incapable of experiencing fear
- Can be angry without knowing so
- Never (or rarely) cries or laughs; never has temper tantrums
- Cannot nurture self psychologically
- Needs to shrink from displays of emotion by others

Social traits

- Lacks the innate motivation to socialize
- Unaware of feelings, needs, and interests of others
- No awareness of how perceived by others
- Unaware of socially appropriate responses
- Doesn't get subtleties; unable to take hints.
- No awareness of flirting

In conversation

- Takes everything literally
- Easier to monologue than dialogue
- Oblivious to motivations of others while they are speaking
- Doesn't pick up on sarcasm
- Misses social cues and nonverbal communication
- Participating in 3-way conversations may be overwhelming
- May have difficulty following topic changes

In relationships

- Understands what love is but cannot feel love
- Cannot be emotionally available to others
- Others cannot provide an emotional safety net

Temperament

- Innate forthrightness tends to scare others
- Never bored, always engaged in some mental activity
- Consistent to daily routines; agitated if the routine is disrupted
- Spontaneity not possible; activities need to be pre-planned
- Cannot lie spontaneously; can tell only premeditated lies

Neurophysiology of the Autistic Brain

The neurological structure of the autistic brain is the same as for every other brain (Figure 1). What is different about the autistic brain is how it functions with respect to its neurophysiology.

The Cingulate Gyrus (CG) is that part of the brain which focuses attention. Dysfunction of the CG is the suspected cause of hyperfocus, the perpetual state of intense single-minded concentration fixated on one thing at a time, to the exclusion of everything else.

The amygdala is the region of the brain which plays a central role in the expressing of emotions, especially fear. A dysfunctional CG prevents a person from feeling any emotion, with the result that the amygdala is virtually non-functioning. An autistic person typically never experiences fear.

The left frontal lobe is the intellectual, analytical, problem-solving part of the brain. The right frontal lobe is the emotional/creative processing part of the brain which plays a central role in spontaneity, social behavior, and nonverbal abilities. Some people are left-brain dominant while others are right brain dominant. Autistic people, however, are left brain exclusive.

The CG normally acts like an automatic transmission that seamlessly switches attention back and forth between the frontal lobes, as required. However, the dysfunctional CG in the autistic brain keeps the person permanently trapped in his/her left frontal lobe. Consequently, the autistic person can only process emotions intellectually.

The EEG neurofeedback I have done on the autistic brain reveals high alpha activity in both frontal lobes. In the neurotypical brain, however, alpha activity (8-12 Hz) is high only in the right frontal cortex, whereas the left frontal cortex reveals high beta activity (12.5-30 Hz). Dominant alpha frequencies in the autistic left brain are most probably compensating for the inability to access creativity from the right brain.

Neuropsychology of Autism

Table 1 compares the neuropsychology of autism to two conditions with which it is often confused: Attention Deficit Hyperactivity Disorder (ADHD) and Obsessive-Compulsive Disorder (OCD). The confusing similarity between symptoms is what causes many cases of ADHD and OCD to be misdiagnosed as autism.

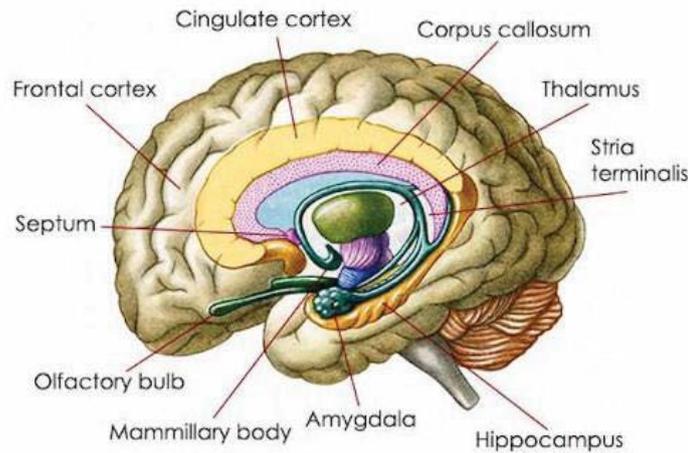
The two crucial differences with respect to autism are:

1. hyperfocus; and
2. processing emotions intellectually.

Differential Diagnosis

Differential diagnosis is distinguishing a specific condition from others that have similar clinical features. Based on similar behavior patterns, many with ADHD, OCD and even Post-traumatic stress disorder (PTSD) have been misdiagnosed as being autistic (Table 2). However, the neurophysiological differences between autism and such other conditions can be profound.

Both ADHD and OCD share a common trait, fickle focus, which is defined as intervals of intense mental fixation interspersed with episodes of



Cingulate Cortex/Gyrus	Left Frontal Cortex/Lobe	Right Frontal Cortex/Lobe	Amygdala
Dysfunctional	Dysregulated	Dysregulated	Inactive

Figure 1. Neurological structure of the autistic brain (Source: nutritionreview.org).

distraction of impulsiveness. Fickle focus can look like hyperfocus that comes and goes; however, such is impossible because hyperfocus is perpetual and unrelenting. Autistic people never get any relief from their hyperfocus.

Because of the confusion between fickle focus and hyperfocus, many people with ADHD or OCD are misdiagnosed as being on the autism spectrum. Also, some who are truly autistic are given false multiple diagnoses that include either ADHD or OCD or both.

Autism appears to be entirely neurophysiological in origin. ADHD and OCD appear to be caused or aggravated by a biochemical imbalance of neurotransmitters. Low dopamine is suspected in ADHD and low serotonin suspected in OCD.

In both autism and PTSD, alpha frequencies predominate over beta in the left frontal lobe. In both cases, this phenomenon appears to substitute for being able to access alpha frequencies directly from the right frontal lobe. The difference is that in PTSD there is a psychological block to avoid remembering horrific emotional events normally accessed from the right frontal lobe, whereas the autistic person is incapable of accessing anything from his right frontal lobe.

A further difference is that PTSD responds to therapy whereas autism does not. No amount of counselling or behavior modification therapy can talk an autistic person out of hyperfocus.

Autism and Fear

Hyperfocus prevents autistic people from being able to feel emotions as they happen. They can only process their emotions intellectually, after the fact, a process that can often take 24 hours. By the time an emotion has been processed, it is too late to have felt it.

Nature has programmed into every human being an automated fear response that warns of perceived threats or impending danger. Autistic people appear to be the only ones incapable of experiencing this fear response. If you encounter someone who has never felt fear of any kind, this person is most probably locked into autistic hyperfocus.

In every risky, dangerous or life-threatening situation, the autistic person is always focused on the event itself and incapable of feeling fear or even nervousness in that moment. In my entire life, including 17 years of experience in martial arts, I have never once felt fear of any kind.

Sometimes autistic people may intellectualize about fear, for example saying that after thinking about such-and-such decided it could be a scary thing. However, they are incapable of feeling fear.

Anxiety

Anxiety is not fear. Anxiety is not a thing unto itself. It is simply a warning signal that bypasses the intellect to warn an autistic person of deep emotions that are being blocked from processing. In this sense, anxiety could be considered a safety net.

Whenever I feel anxiety, I stop, take a deep breath, and figure out which emotion is struggling to be acknowledged. Sometimes this involves deduction or running down a mental checklist. As soon as the emotion is named, the anxiety immediately stops.

The Litmus Test

Hyperfocus is the unique and defining causal state of autism that creates its observed characteristics. Hyperfocus prevents someone from dividing attention between two thought patterns or two stimuli at the same time. An autistic person talking to you is incapable of feeling any emotion in that moment. The surest way to find out if someone is autistic is to ask these five questions, to which you will receive the following responses.

- How often do you cry? "never" or "rarely"
- How often do you laugh? "never" or "rarely"
- What are you afraid of? "nothing" or an intellectual answer
- What are you feeling right now? "nothing" or an intellectual answer
- Do you ever get bored? "never"

Example of an intellectual answer:

"No, I'm not angry. That wouldn't be logical."

Anyone who answers all five questions as above is autistic. Anyone who answers four or fewer as above is not autistic.

Note: If the person answers the third question with a phobia (e.g., of heights), then re-ask the question this way, "Aside from this phobia, do you normally experience fear of any kind?"

Intensity of Autism

The autism spectrum idea is counterproductive and needs to be scrapped. This erroneous concept has been a major contributor to the epidemic of false diagnoses of autism.

Autism does not belong on any spectrum. There is only one kind of autism, not several. There are neither shades of autism, nor any such thing as autistic tendencies. Autism is 100%. Either one is autistic, or s/he is not. There is no middle ground.

The only variable within autism is the intensity with which hyperfocus is experienced. Low functioning autistic people experience hyperfocus with high intensity. High functioning autistic people (e.g., those with Asperger syndrome) experience hyperfocus less intensely. If a visual model would be helpful, then it needs to be a vertical bar chart rising from greatest intensity (lowest functioning) at the bottom to least intensity (highest functioning) at the top.

Table 1. The neuropsychology of autism to two conditions i.e. Attention deficit hyperactivity disorder (ADHD) and Obsessive-compulsive disorder (OCD).

Symptoms	Autism	ADHD	OCD
Hyperfocus	hyperfocus ¹	fickle focus ²	fickle focus ²
Concentration	intense	intense	intense
Distraction	never distracted	easily distracted	self-distracts
Social Aspects	unable to understand and respond to the needs of others	poor social skills	may have social anxiety, fear of disapproval
Multitasking	unable to multitask	may be able to multitask	unable to multitask
Emotional Effects	Incapable of feeling emotion. Processes emotions intellectually.	Can trigger intense emotions.	Compulsive behaviors may be attempts to relieve emotional stress.

¹**Hyperfocus** is defined as perpetual and unrelenting attention fixated on one thought or stimulus at a time, to the exclusion of everything else.

²**Fickle focus** is defined as intervals of intensely paying attention interspersed with episodes of distraction or impulsiveness.

Table 2. Neurophysiology of autism.

Symptoms	Autism	PTSD	ADHD	OCD
Hyperfocus	hyperfocus ¹	n/a	fickle focus ²	fickle focus ²
Cingulate Gyrus	dysfunctional	functional	functional	functional
Amygdala	inactive	hyperactive	active	hyperactive
Left Frontal Lobe	high alpha activity	high alpha activity	high beta activity	high beta activity
Neurochemical Imbalance	n/a	n/a	low dopamine suspected	low serotonin suspected
Social Aspects	unable to understand and respond to the needs of others	social skills unaffected by PTSD	poor social skills	social anxiety, fear of approval

¹Hyperfocus is defined as perpetual and unrelenting attention fixated on one thought or stimulus at a time, to the exclusion of everything else.

²Fickle focus is defined as intervals of intensely paying attention interspersed with episodes of distraction or impulsiveness.

Non-communicative autistic children are the ones most intensely trapped in hyperfocus, and there is no known way to bring them out of it. Intensely autistic children cannot be taught to speak; however, some spontaneously start to speak on their own initiative, as Einstein did at age four. The only non-communicative children who can be taught to speak are those who have developmental, learning, language, communication, or social disorders unrelated to autism.

Conclusion

The symptom survey approach has been a major step backward in diagnosing autism, compared to the clinical phenotype diagnosing that was common during the 1960s. Phenotyping is based on observing gene expression in individuals and relating their conditions to hereditary factors.

Environment plays no part in the causality of autism, which is an inherent neurophysiological anomaly in how the brain processes information. A brain that is trapped in perpetual hyperfocus is incapable of responding to environmental or social pressures. Neither is it capable of responding to behaviour modification therapy. No one can be talked out of autistic hyperfocus.

What the psychology professions now require is a causal based definition, for which I propose the following:

Autism: Perpetual and unrelenting hyperfocus, the state of intense single-minded concentration fixated on one thing at a time, to the exclusion of everything else, including one's own feelings. Hyperfocus appears to be caused by a dysfunctional Cingulate gyrus (CG), that part of the brain which focuses attention.

Conflict of Interest

There is no conflict of interest.

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