



# Hardwired to Learn

## Part II: Update on ADHD, LD and Autism

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# I Had a Revelation in St. Augustine

The World Operates Along a  
Normal Curve!

# The Great Mystery of ADHD Uncovered

The Price of Poor Self-  
discipline

Self-discipline can be understood as a vital component of a sense of ownership and responsibility for one's behavior.

The need to develop and effectively harness self-discipline at an early age, while critical in any culture, may take on greater importance in a society filled with complex demands, challenges, and stresses. The possession and ability to effectively utilize self-discipline paves a successful road into adulthood.

It is not surprising that in our fast paced, seemingly chaotic world, children capable of implementing self-discipline at young ages appear to negotiate the maze of family, school, friends, and community more successfully than those who struggle with this ability.

Effective self-discipline implies that a child has internalized a set of rules so that even without the presence of a parent or other caregiver, the child will act in a thoughtful, reflective manner.

# Self-discipline

- The ability to inhibit
- The ability to delay
- The ability to separate thought from feeling
- The ability to separate experience from response
- The ability to consider an experience and change perspective
- The ability to consider alternative responses

# Self-discipline

- The ability to choose a response and act successfully towards a goal
- The ability to change the response when confronted with new data
- The ability to negotiate life automatically
- The ability to track cues

Children with poor self-  
discipline aren't  
clue-less

They are unfortunately often cue-  
less!

Poor Self-discipline is  
synonymous with. . .

Poor Self-control

Poor self-discipline leads to

Impulsive behavior

# Poor self-discipline leads to:

- Knowing what to do is not the same as doing what you know
- Inconsistent behavior
- Unpredictable behavior
- The illusion of competence
- Riding an emotional roller coaster
- Problems with automatic behavior

# Conditions under which inattention is observed

- Repetitive
- Effortful
- Uninteresting
- Not chosen

# Conditions under which problems with consequences are observed

- Delayed
- Infrequent
- Unpredictable
- Lacking saliency

ADHD reflects exaggeration of normal behavior.

The Symptoms of ADHD Lead to a  
Nearly Infinite Number of  
Consequences

ADHD acts as a catalyst fueling  
other developmental and  
environmental risk factors.

# Five keys to successful management of ADHD

- Make tasks interesting
- Make payoffs valuable
- Adjust expectations for change
- Allow more trials to mastery
- Allow more time for change

# Processing and Thinking Skills

Why and How We Learn

# The Processing Skills

- The processing of information through sight, hearing and touch.
- These skills facilitate learning and are secretarial in nature.
- These skills allow children to take in information, to discern its various components, to memorize, and to perform tasks involving symbolic learning and motor output.

# The Thinking Skills

- Understanding spoken and written language.
- Expressing ideas in reading and writing.
- Reproducing complex patterns.
- Understanding and judging visual relationships.
- Reasoning with mathematical symbols.

# Practical Applications of the Mather and Goldstein Model

Identifying Early Risks for  
Learning Disability

# Five Key Skills

- Label
- Association
- Retrieval
- Sequence
- Orthographic

# Practical Applications of the Mather and Goldstein Model

Identifying Ongoing Causes of  
Learning Disabilities

# PASS Theory & Application

- Basic Psychological Processes include:
  - **Planning** – decisions about how to do things, control of actions, self-monitoring, use of processes and knowledge.
  - **Attention** - focused cognitive activity and resistance to distraction.
  - **Simultaneous & Successive** - two forms of working with information.

# Autism and the Pervasive Developmental Disorders

An Evolving Concept

The Pervasive Developmental Disorders (PDDs) are a group of conditions that share certain clinical features but appear to have diverse etiologies and natural courses.

The term PDD emphasizes the pervasiveness of disturbances over a wide range of different domains affecting the normal unfolding and development of multiple competencies.

# Kanner's Description (1943)

- Inability to relate in ordinary ways to people.
- Disinterest in parents and people.
- Excellent rote memory skills.
- Language difficulties including but not limited to: mutism, echolalia, pronoun reversal, literalness, poor social language.
- Lack of spontaneous activity.
- A wide range of cognitive skills.

## Kanner's Description (1943)

- Self absorbed fascination with the inanimate environment.
- Pronounced resistance to change in routine.
- Purposeless repetitive movements.
- Isolated interest and proficiency in meaningless tasks with endless repetition.

# Gillberg's Description

- Impaired social interaction.
- Self absorbed behavior.
- Odd interests and routines.
- Speech and language problems inspite of seemingly competent superficial language skills.
- Non-verbal communication problems.
- Motor clumsiness.

# PDDs

- Onset in infancy or early childhood.
- Typical patterns of delays and deviance in social, affective and communicative development.
- Expanding recognition and interest in the clinical and educational realms.
- Spectrum, continuum or syndrome?

# The PDD's

- Autism
- Asperger
- Rett
- Childhood Disintegrative Disorder
- PDD Not Otherwise Specified

# Current Conceptualization of Asperger Disorder

- Paucity of empathy
- Naïve, inappropriate social interaction
- Inability to form friendships
- Pedantic and monotonic speech
- Intense absorption in circumscribed topics

# Current Conceptualization of Asperger Disorder

- Good rote learning with poor understanding
- Clumsy and poorly coordinated movements
- Some cases reported of low intellect
- Usually diagnosed between 8 and 16 years of age
- Highly stable yet better outcome than autism

Autism is increasingly referred to as a spectrum disorder in which individuals can present problems ranging from total impairment to near reasonable functioning.

Aspergers and high  
functioning autism may not be  
different conditions.

# Traditional Core Autistic Symptoms

- Impaired social relations.
- Impaired communication skills.
- Impaired behavior.

# Goldstein and Naglieri Epidemiologic Sample (2008)

- Impaired social relations and communication skills.
- Impaired behavior (stereotypies)
- Inattention and poor self-regulation

The social development of autistic children is qualitatively different from other children.

In normal children perceptual, affective and neuroregulatory mechanisms predispose young infants to engage in social interaction from very early on in their lives.

# Young autistic children:

- Have little interest in the human face.
- Lack differential preference for speech sounds.
- Lack imitative capacity.
- Lack interest in physical comfort.
- Don't attach to caretakers well.

# Symptoms Present Before 24 Months: Failure To -

- Orient to name
- Attend to human voice
- Look at face and eyes of others
- Imitate
- Show objects
- Point
- Demonstrate interest in other children

# Symptoms Present Before 36 Months

- Use of other's body to communicate or as a tool
- Stereotyped hand/finger/body mannerisms
- Ritualistic behavior
- Failure to demonstrate pretend play
- Failure to demonstrate joint attention

# Joint Attention

- Behaviors that focus the attention of the self and others on the same object (e.g. pointing, sharing emotion, etc.)
- Develops between 6 and 9 months
- Precursor of more advanced social and communication skills

# Joint Attention

- This abnormality thought to be one of the earliest signs of autism
- Present in children with developmental delays absent autism
- This ability when present in preschoolers with autism predicts better prognosis for language development

# Pretend Play in Autism

- Limited, often absent
- When present usually characterized by: repetitive themes, rigidity, isolated acts, one-sided play, limited imagination.

# Autism is not Schizophrenia

- Early onset
- Unchanged course
- No delusions
- Profound problems with social communication
- Less consistent family history
- Late onset
- Varying course
- Delusions
- Mild impairments in social communication
- Stronger family history

# Is high functioning autism synonymous with non verbal learning disability?

- 25% overlap
  - Impaired attention
  - Weak large motor skills
  - Poor comprehension
  - Social problems
  - Academic unevenness
  - Odd interests
- 25% overlap
  - Impaired attention
  - Weak fine and large motor skills
  - Poor comprehension
  - Poor math skills
  - Social problems but interested
  - No odd interests

# Autism is not just a language disorder

- Problems with verbal and non verbal communication
  - Adequate non verbal communication
  - Normal socialization
  - More even cognitive abilities
  - Behavioral differences secondary to lack of language proficiency
- Profound social deficits
- Wider range of abilities

# Theory of Mind

A new line of research has proposed that the social deficits in autism represent a specific, innate cognitive capacity to attribute mental states to others and oneself and use these to explain and predict another person's behavior.

# Problems with the Theory of Mind Hypothesis

- The theory doesn't account for the very early onset of the condition.
- Is the theory applicable to lower functioning autistics?
- Higher functioning autistics can conceive others intentions but struggle to empathize.
- Deficits may be a function of developmental level rather than diagnostic category.

One in four autistic children  
experience physical problems  
including epilepsy.

Up to eighty percent of autistic children experience intellectual deficits.

Level of cognitive functioning  
and useful language by five  
years of age are the best  
predictors of outcome.

Ten percent of autism cases have a known medical cause.

Autism occurs at a greater than chance rate with:

- Fragile X
- Tuberous sclerosis
- Neurofibromatosis
- Williams syndrome
- Phenylketonuria
- Congenital rubella

# Immune Hypothesis of Autism

A genetic  
predisposition to  
infection and/or  
autoimmune  
processes may be  
involved in the  
pathogenesis of

# Immunology of Autism

- Immunologic associations in a significant minority of autism cases.
- Lower complement C4B protein in blood.
- Lower immunoglobulin A levels.

# Idiopathic Autism

- 90% of cases.
- Genetics plays an important role.
- Autism occurs more frequently in monozygotic than dizygotic twins.
- The rate of autism among siblings is significantly higher than the general population.
- No single causative gene has been identified.
- At least five or more genes interact.
- Genes on chromosomes 7 and 15 look promising.

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