


**Autism and DSM5: Implications for Identification and Intervention
Workshop 027**

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 **NASP 2014 Annual Convention**
FEBRUARY 18-21, 2014 • WASHINGTON, DC

February 20, 2014

JAMES COPLAN, M.D.
Neurodevelopmental Pediatrician • Author • Speaker
Making Sense of Autistic Spectrum Disorders



www.drcoplan.com

February 20, 2014
Dr. Coplan presents two workshops at the 2014 NASP (National Association of School Psychologists) Annual Convention in Washington, DC on February 20, 2014. Dr. Coplan's first workshop, from 8:30-11:00 AM is entitled: *Current Health Issues in ASD: The second, from 12:30-3:30 PM is entitled: Impact of the DSM-V on Classifying and Serving Children with ASD.* NASP is the premier source of knowledge, professional development, and resources, empowering school psychologists to ensure that all children and youth attain optimal learning and mental health. The convention will be held in Washington, DC, at the Marriott Wardman Park and Omni Shoreham from February 18-21, 2014. More Presentation Handout Part 1 Presentation Handout Part 2

WS027: Autism and the DSM-5: Implications for Identification and Intervention
Thursday, February 20, 2014 12:30 PM–3:30 PM
Description:
ASD is a condition defined on the basis of outwardly visible behavior. This workshop will use lecture, case vignettes, and citations to the published literature to help participants explore the evolving definition of ASD in the DSM and the impact of those changes on the apparent prevalence of ASD (the so-called autism explosion). It also will present alternative ways of conceptualizing ASD that transcend the limitations of the DSM.

Outline

Clinical Features and Natural History of ASD [12:30 – 2:00 a.m.]

- Leo Kanner's lasting contributions
- Degrees of Atypicality (ASD in one dimension)
- Non-verbal IQ (ASD in 2 dimensions)
- Atypicality, Age, and IQ: ASD in 3D
- Progression of therapies tied to Natural History


Break [2:00 – 2:15]

Etiology, Epidemiology, and Quackery [2:15-3:30]

- The autism "explosion": Where did it come from, what does it mean?
- Impact of DSM5

Disclosures

- Dr. Coplan is author of *Making Sense of Autistic Spectrum Disorders: Create the brightest future for your child with the best treatment options* (Bantam-Dell, 2010), and receives royalties on its sale



- This presentation will include a discussion of off-label drug use

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The NERVOUS CHILD

Quarterly Journal of Psychopathology, Psychotherapy,
Mental Hygiene, and Guidance of the Child

AUTISTIC DISTURBANCES OF AFFECTIVE CONTACT

By LEO KANNER

SINCE 1938, there have come to our attention a number of children whose condition differs so markedly and uniquely from anything reported so far, that each case merits—and, I hope, will eventually receive—a detailed consideration of its fascinating peculiarities.

Kanner, L. Autistic Disturbances of Affective Contact. *Nervous Child*, (2) 217-250, 1943
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Kanner, 1943

- N = 11 (M 8; F 3)
- Age: 2 to 8 yr.
- Symptoms in four domains:
 1. Impaired socialization
 2. Idiosyncratic language
 3. Repetitious behaviors
 4. Unusual responses to sensory stimuli

Kanner, L. Autistic Disturbances of Affective Contact. *Nervous Child*, (2) 217-250, 1943
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Impaired Socialization

- “Aloof”
- “Withdrawn”
- Limited eye contact
- Indifferent to others

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Impaired Socialization “In his own little world”



Age: 22 months. Nonverbal. CARS=44.
www.drcoplan.com MRN 11-0741

Idiosyncratic Language

- Echolalia
- Delayed Echolalia
- Pronoun Reversal
- Odd inflection

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Repetitious Behaviors

- Rigid Routines
- Stereotypies
- Lining up / spinning objects

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Unusual sensory responses

- “Petrified of vacuum cleaner”
- Drawn to, or afraid of, spinning objects
- Mouthing behavior
- Ingesting inedible materials
- Food selectivity

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Kanner, 1938 → 1943

- Gradual improvement in early childhood
 - Social skills
 - Language
 - Cognitive flexibility
 - Sensory Aversions

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Kanner, 1938 → 1943

“Between the ages of 5 and 6 years, they gradually abandon echolalia and learn spontaneously to use personal pronouns.

“Language becomes more communicative, at first in the sense of a question-and-answer exercise, and then in the sense of greater spontaneity of sentence formation....

Kanner, L. Autistic Disturbances of Affective Contact. *Nervous Child*, (2) 217-250, 1943
www.drcoplan.com

Kanner, 1938 → 1943

“Food is accepted without difficulty. Noises and motions are tolerated more than previously. The panic tantrums subside. The repetitiousness assumes the form of obsessive preoccupations...

Kanner, L. Autistic Disturbances of Affective Contact. *Nervous Child*, (2) 217-250, 1943
www.drcoplan.com

Kanner, 1938 → 1943

“Reading skill is acquired quickly, but the children read monotonously, and a story or a moving picture is experienced in unrelated portions rather than in its coherent totality...”*

*** “Central coherence”**

Kanner, L. Autistic Disturbances of Affective Contact. Nervous Child, (2) 217-250, 1943

www.drcoplan.com

Kanner, 1938 → 1943

“Between the ages of 6 and 8, the children begin to play in a group, still never with the other members of the group, but at least on the periphery alongside the group.

Kanner, L. Autistic Disturbances of Affective Contact. Nervous Child, (2) 217-250, 1943

www.drcoplan.com

Kanner, 1938 → 1943

“People are included in the child's world to the extent to which they satisfy his needs...”

Kanner, L. Autistic Disturbances of Affective Contact. Nervous Child, (2) 217-250, 1943

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Kanner, 1938 → 1943

All of this makes the family feel that, in spite of recognized ‘difference’ from other children, there is progress and improvement.

Leo Kanner, 1943

Kanner, L. Autistic Disturbances of Affective Contact. Nervous Child, (2) 217-250, 1943

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Kanner, 1971

- Deceased: 1
- Lost to follow-up: 2
- Institutionalized: 5
- Living on work farm: 1
- Living at home: 2
 - BA degree / bank teller
 - Sheltered workshop / machine operator

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Natural History: “The temporal course a disease from onset to resolution”

Center for Disease Control & Prevention

ASD has a Natural History

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Kanner, 1943

It is not easy to evaluate the fact that all of our patients have come of highly intelligent parents. This much is certain, that there is a great deal of obsessiveness in the family background. The very detailed diaries and reports and the frequent remembrance, after several years, that the children had learned to recite twenty-five questions and answers of the Presbyterian Catechism, to sing thirty-seven nursery songs, or to discriminate between eighteen symphonies, furnish a telling illustration of parental obsessiveness.

One other fact stands out prominently. In the whole group, there are very few really warmhearted fathers and mothers. For the most part, the parents, grandparents, and collaterals are persons strongly preoccupied with abstractions of a scientific, literary, or artistic nature, and limited in genuine interest in people. Even some of the happiest marriages are rather cold and formal affairs. Three of the marriages were dismal failures. The question arises whether or to what extent this fact has contributed to the condition of the children. The children's aloneness from the beginning of life makes it difficult to attribute the whole picture exclusively to the type of the early parental relations with our patients.

Kanner, 1943

We must, then, assume that these children have come into the world with innate inability to form the usual, biologically provided affective contact with people, just as other children come into the world with innate physical or intellectual handicaps. If this assumption is correct, a further study of our children may help to furnish concrete criteria regarding the still diffuse notions about the constitutional components of emotional reactivity. For here we seem to have pure-culture examples of inborn autistic disturbances of affective contact.*

Kanner's contributions

- **Clinical Description**
 - Social, Language, Repetitious behavior, & Sensory aversions / attractions
- Described the *Natural History* of improvement over time (irrespective of treatment)
- Attribution: An “inborn disturbance of affective contact”

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Outline

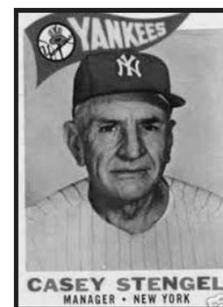
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“Line up alphabetically by height”

Quantifying severity of ASD, and changes over time



Clinical Domain • Social • Language • Repetitious Behavior • Sensory	Decreasing Atypicality → Increasing Age →		
	Severe / Youngest	Moderate / Older	Mild / Older

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Social Interaction

“Our child is *among* us, but not *with* us.”

Parent of a 4 year old with ASD

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Clinical Domain ↓	Decreasing Atypicality / Increasing Age ⇒		
	Severe / Youngest	Moderate / Older	Mild / Older
1. Social Interaction	<ul style="list-style-type: none"> •No eye contact •No physical affection •Cannot be engaged in imitative tasks 	<ul style="list-style-type: none"> •Intermittent eye contact •Seeks affection “on his own terms” •May invade personal space of others (not true affection) •Engageable in imitative tasks, although with difficulty 	<ul style="list-style-type: none"> •Good eye contact •Shows interest in others, but often does not know how to join in •Easily engaged in imitative activities •Rigid; has difficulty if perceives that rules have been broken •Difficulty with “Theory of Mind” tasks

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Theory of Mind

- Realization that other people have an internal mental & emotional state, different from one’s own
- Ability to gauge the internal mental & emotional state of others
 - Able to infer motives & predict behavior of others
 - Empathy
 - Humor

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Theory of Mind



*How does the boy feel?
Why?*

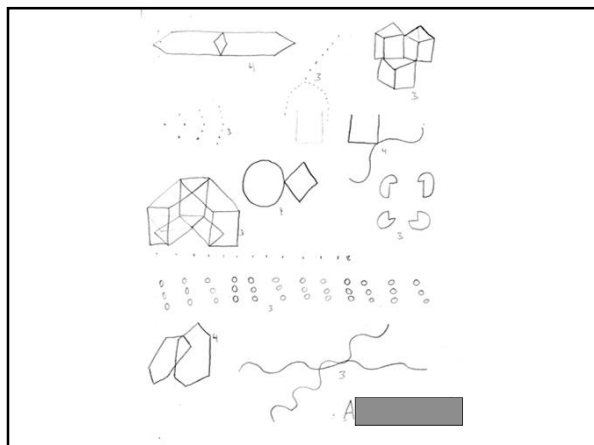
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Theory of Mind



*Q: How does the boy feel?
A: "I don't know, because I can't see his mouth."*

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Eye Contact

- 15 y.o. boy, normal IQ, no SDI; referred for eval. of possible reading disability.
- Does not look up after each Bender card.

*Q: "Did you know that there are two ways
you can tell me you're done: Say 'done,' or
look up?"*

A: "No, no one ever taught me that."

Eye Contact

*Q: How am I supposed to know when you're ready
for another card?*

A: Because my pencil has stopped moving?

Q: Why is it important to look up after each card?

A: To see if I got the right answer?

Q: When you look up, what does that tell me?

A: That I'm paying attention?

Theory of Mind

Muff

Muff is a little yellow kitten.
She drinks milk.
She sleeps on a chair.
She does not like to get wet.

Q: How would Muff feel, if you gave her a bath?

A: Clean!

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Language

“My child talks, but he doesn’t communicate.”

Mother of a 3 year old with autism

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Language Deficits in ASD

- **Pragmatics:** Use of language for the purpose of social interaction
 - Framing
 - Topic maintenance, Turn taking
 - Conversational repair
 - Impaired Pragmatics:
 - Echolalia, delayed echolalia (“scripting”)
 - Lack of framing
 - Off-topic responses
 - Person talks “at” rather than “with” partner

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Language Deficits in ASD

- **Prosody:** Tone, Pitch, Volume
 - Stilted
 - Sing-song
 - Robotic
 - Pedantic
 - Overly loud
 - Difficulty “reading” prosodic cues of others
[Difficulty with nonverbal cues (body language)]

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Quantifying severity of ASD - 2

Clinical Domain ↓	Decreasing Atypicality / Increasing Age ⇒		
	Severe / Youngest	Moderate / Older	Mild / Older
2. Language •Pragmatics •Prosody	<ul style="list-style-type: none"> •Nonverbal •No response to voice; may “act deaf” •No use of gestures as a means of compensating for absence of spoken language •May use “hand-over-hand” to guide caregiver to desired objects 	<ul style="list-style-type: none"> •Echolalia, Delayed echolalia •Verbal Perseveration •Odd Inflection (stilted, sing-song, ↑↓ volume) •May use stock phrases in an attempt to communicate •Makes use of visual communication modalities (symbol cards; sign language) 	<ul style="list-style-type: none"> •Speaks fluently, but literal; lacks understanding of verbal nuance •Difficulty with Pragmatics (framing, turn-taking, topic maintenance; conversational repair; talks “at” rather than “with” others) and Theory of Mind language tasks (fibbing; humor, verbal make-believe)

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Literal



Q: Who lives in a tree?
A: Nobody lives in a tree!
Q: What *animals* live in a tree?
A: Birds, squirrels....

Theory of Mind

Camping

Six boys put up a tent by the side of the river. They brought things to eat with them. When the sun went down, they went into the tent to sleep. In the night, a cow came and began to eat grass around the tent. The boys were afraid. They thought it was a bear.

Q: Is this a sad story, a scary story, or a funny story?

- A *scary story*, because the boys were scared. (PDD-NOS)
- It was a most *unusual story*, because you don't often find cows in the woods. (Asperger Syndrome)

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Repetitious Behavior

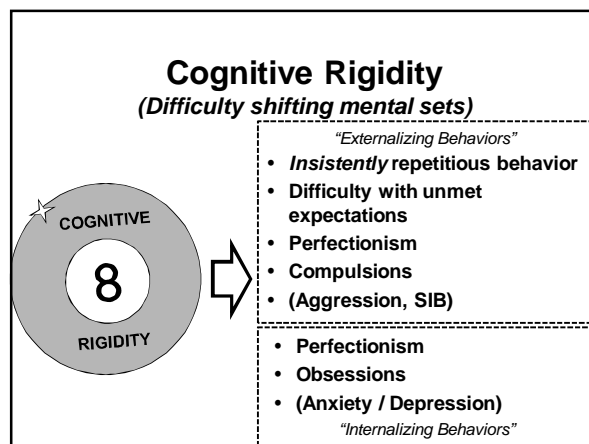
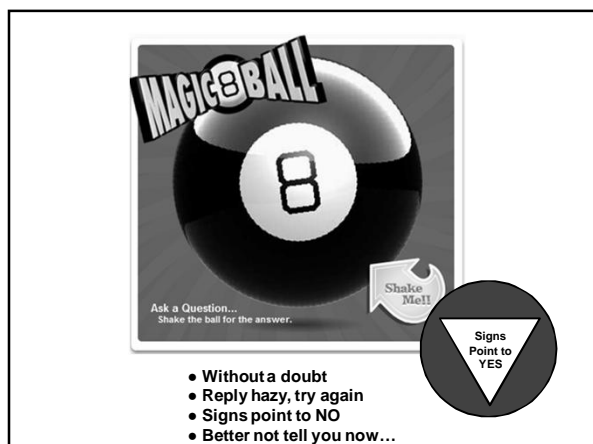
"My child has over-attention deficit disorder."

Father of a 10 year old with autism and perseverative behavior

Quantifying severity of ASD - 3

Clinical Domain ↓	Decreasing Atypicality / Increasing Age ⇒		
	Severe / Youngest	Moderate / Older	Mild / Older
3. Repetitious Behaviors <i>Cognitive Rigidity</i>	<ul style="list-style-type: none"> •Extreme distress if routines are changed or when required to transition from one task to another •Fascination with odd objects (tags, wheels, fans, etc.) 	<ul style="list-style-type: none"> •Same, but with diminishing level of distress; able to accept verbal preparation for changes in routine •Complex repetitious play (lining up objects, memorizes numbers, letters, etc) 	<ul style="list-style-type: none"> •May demonstrate conscious awareness of preference for routines; easier to self-modulate •Play remains repetitious, but repetitive quality is more subtle; "obsessive preoccupations" •Problems with Central Coherence
<i>Motoric</i>	<ul style="list-style-type: none"> •Frequent, intense stereotypical movements (flapping, spinning, toe-walking, finger twiddling) 	<ul style="list-style-type: none"> •Motor stereotypies occasional; may re-emerge when excited 	<ul style="list-style-type: none"> •Motor stereotypies rare or absent

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Quantifying severity of ASD - 3

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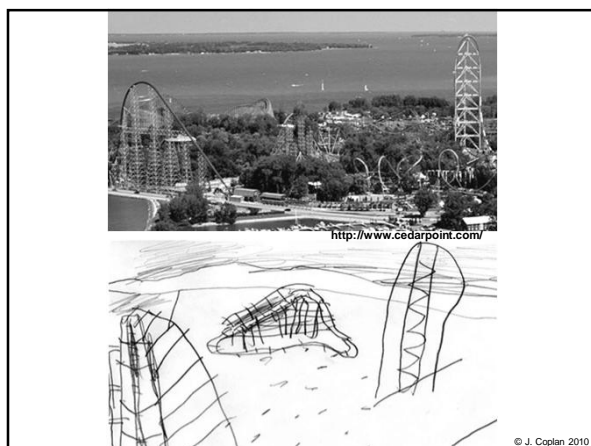
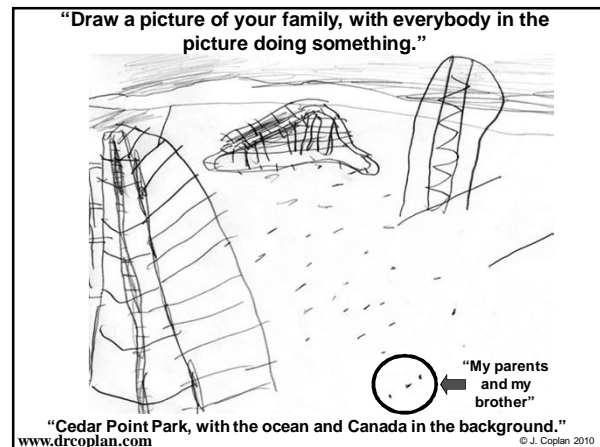
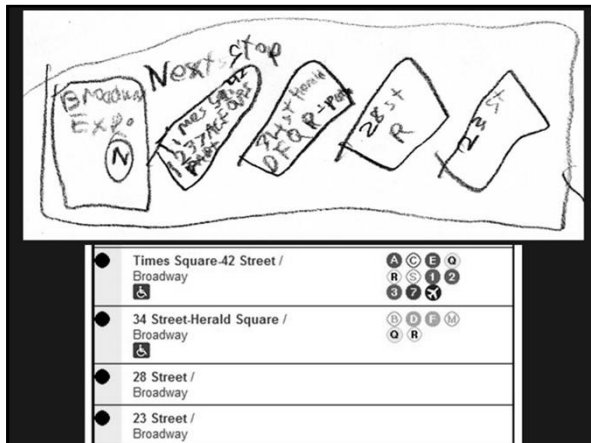
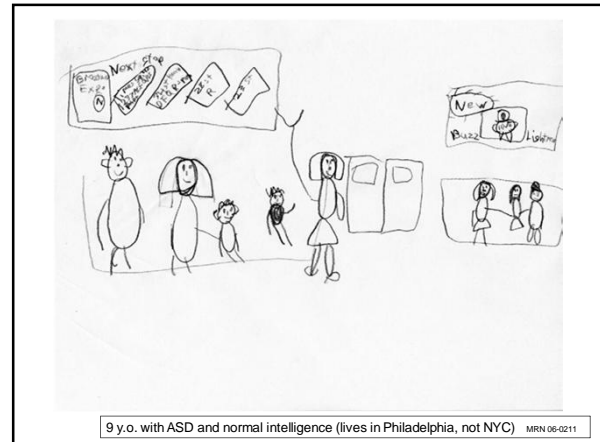
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Central Coherence

- Ability to see "the big picture" rather than a collection of individual elements

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**Tasks requiring Central Coherence
(in addition to Theory of Mind)**

What's happening in this picture?



What's happening in this picture?



"The man is drowning."

What's happening in this picture?



"The man is swimming, and the car is about to fall on him."

What's happening in this picture?



What's happening in this picture?



"Two strangers got into the house and are handing out newspapers."

What's happening in this picture?

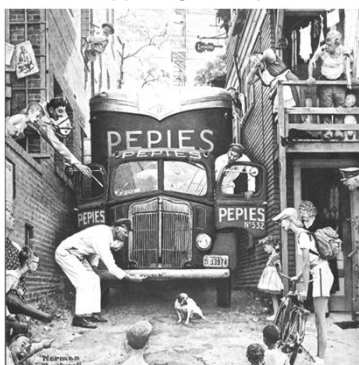


What's happening in this picture?

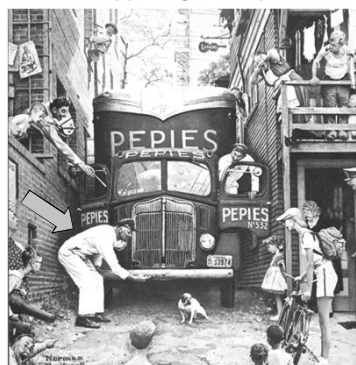


"That girl is trying to steal the other girl's book."

What's happening in this picture?



What's happening in this picture?



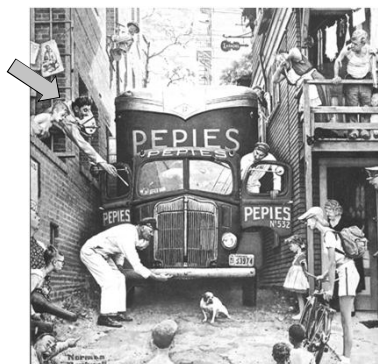
"The man is trying to fix the truck."

What's happening in this picture?



"The man is playing with his dog. The truck can't go because all the people are in the way."

What's happening in this picture?



"He's cleaning the truck. The driver is distressed because it's taking so long."

13-0833

Can you figure out this story from the pictures?



Q: What's happening in this picture?

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Q: What's happening in this picture?

A: *The kitten is on the boy's back and is about to eat him.*

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Q: What's happening in this picture?

A: *The boy is hoarding animals.*

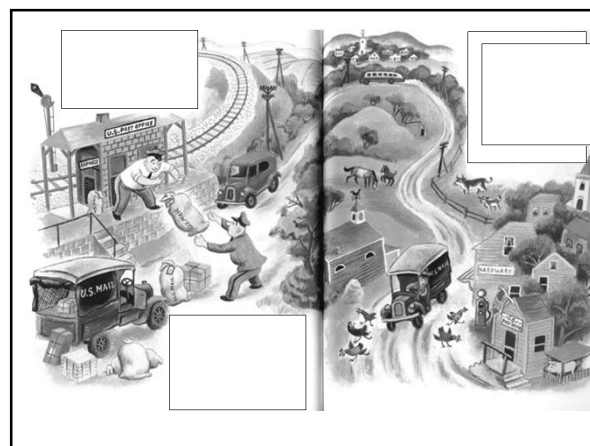
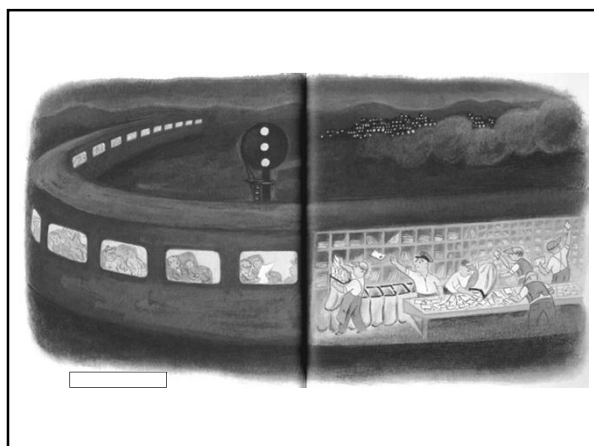
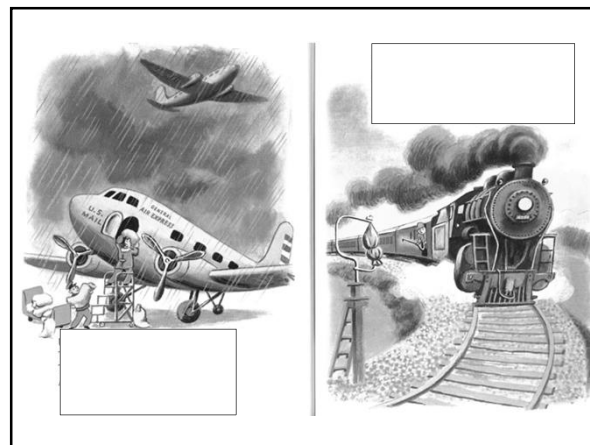
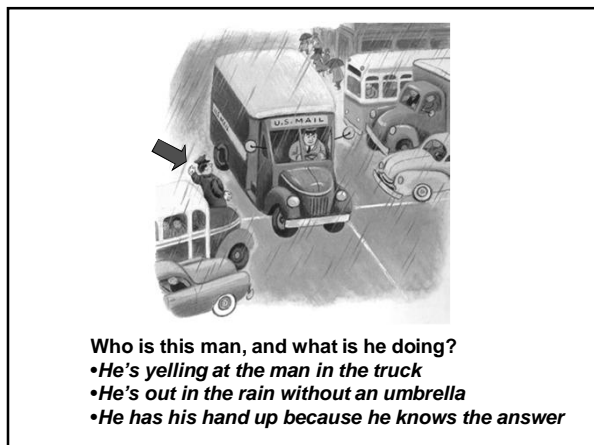
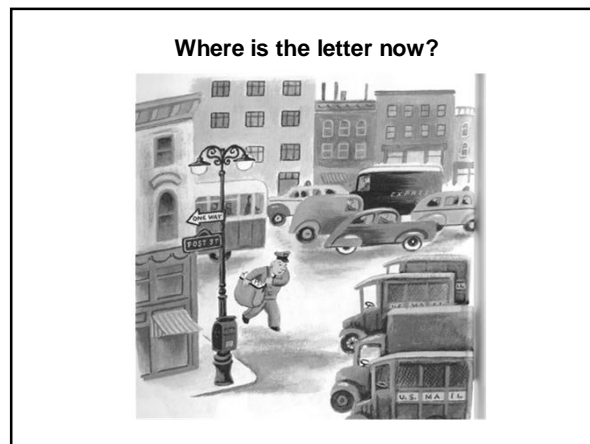


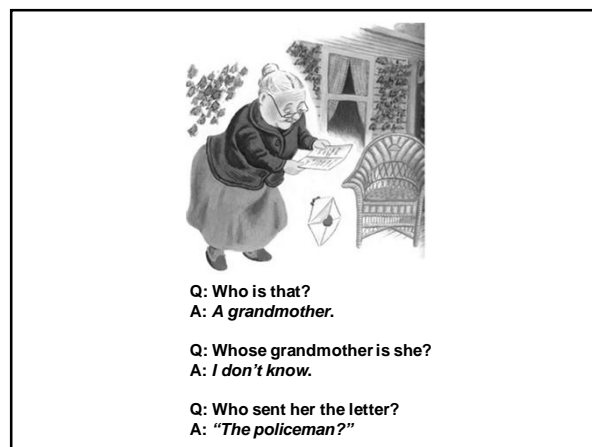
Q: What's this?

A: *It's a rectangle with a triangle and an X on it.*

© Coplan, J. Making Sense of Autistic Spectrum Disorders. Bantam-Dell, 2010







Repetitious behavior in ASD

- A direct expression of the underlying biology
 - Cognitive Rigidity
 - Stereotypies
- Stress relief
- A coping mechanism, to offset deficits in Theory of Mind & Central Coherence
 - "Better the devil you know..."



Sensory & Motor Processing

Quantifying severity of ASD - 4

Clinical Domain ↓	Decreasing Atypicality / Increasing Age ⇒		
	Severe / Youngest	Moderate / Older	Mild / Older
4. Sensorimotor: • Intense aversion or attraction to specific classes of stimuli • Clumsiness	<ul style="list-style-type: none"> • Auditory: Hyperacusis, covers ears, acts deaf • Visual: self-stimulation (lights/patterns); looks at objects from odd angles • Tactile: rubbing, licking, mouthing, deep pressure; averse to light touch • Olfactory: Sniffing • Extreme food selectivity • Pain threshold • Fears: Heightened/ blunted 	Same, but diminishing intensity	Same, but diminishing intensity

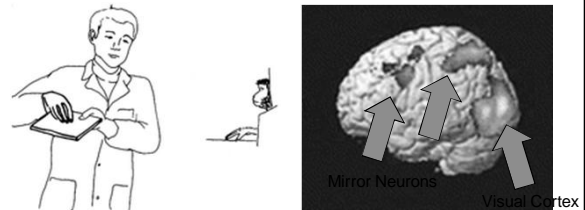
© Coplan, J. Making Sense of Autistic Spectrum Disorders. Bantam-Dell, 2010

Abnormal responses to sensory stimuli



© Coplan, J. Making Sense of Autistic Spectrum Disorders. Bantam-Dell, 2010

Mirror Neurons: The Missing Link?



"The observation of actions done by another individual activates, besides visual areas, also areas that have motor properties."

Mirror Neurons: From discovery to autism
Rizzolatti & Fabbri-Destro; Exp Brain Res 2010



Figure 2.5. Stimulus faces of Andrew Meltzoff and a young mimic.

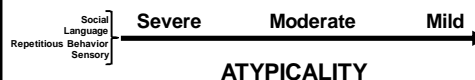
Meltzoff, Andrew N. and Moore, M. K. Imitation of facial and manual gestures by human neonates. Science 198:75-78, 1977



http://en.wikipedia.org/wiki/File:Makak_neonatal_imitation.png



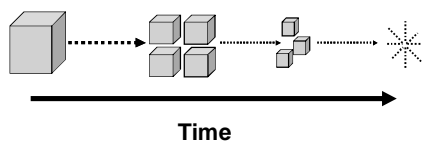
“The Spectrum”: ASD in One Dimension



- Atypical features can range from severe to mild

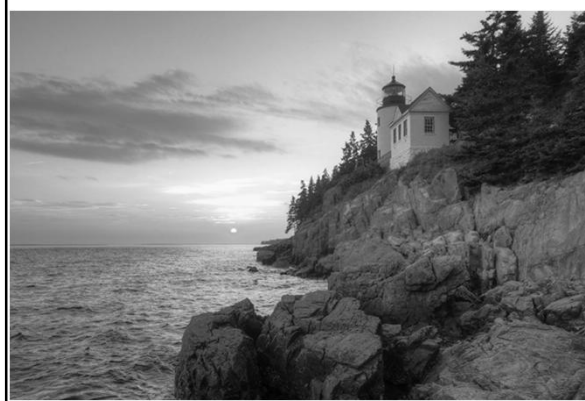
Coplan, J. Making Sense of Autistic Spectrum Disorders; Figure 5.1

“Over time, the ice melts”



- Atypical behaviors improve over time

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Measuring intelligence in ASD

- How to operationalize the measurement of intelligence in ASD?
 - Omit ASD-specific areas of dysfunction or inflator scores:
 - Language
 - Social judgment
 - Savant skills
 - What's left?
 - Non-verbal Problem-Solving
 - Adaptive skills (somewhat)
 - Play skills (somewhat)

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Non-verbal Problem-Solving

- Object permanence
- Cause & Effect
- Rule-based behavior

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Problem-Solving

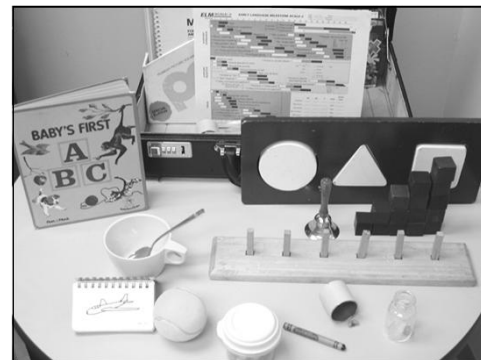
1" Cubes

- Takes one: 6 m
- Transfers: 7 m
- Bangs two: 9 m
- Takes three: 10-12 m
- Copies
 - 14 m
 - 18 m
 - 24-27 m
- Builds:
 - 30-36 m
 - 3 1/2 yr
 - 4 yr
 - 5 yr
 - 6 yr

Problem-Solving

Crayon

- Mouths: < 9 m
- Makes marks 10-12 m
- Scribbles p demo: 14 m
- Scribbles spont: 16 m
- Alternates from stroke to scribble: 22 m
- - 24-27 m
- Draws:
 - 30-36 m
 - 3 1/2 yr
 - 4 yr
 - 5 yr
 - 6 yr



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Adaptive Skills

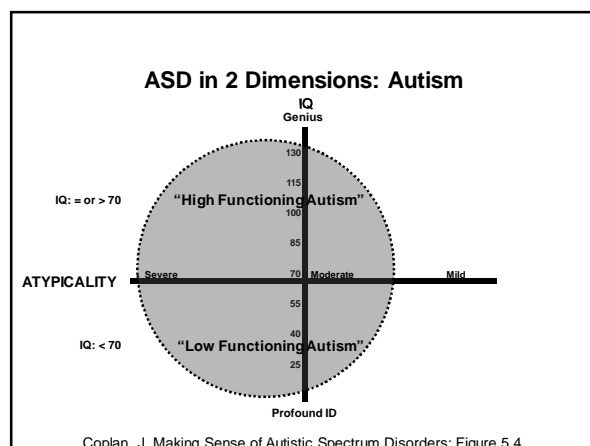
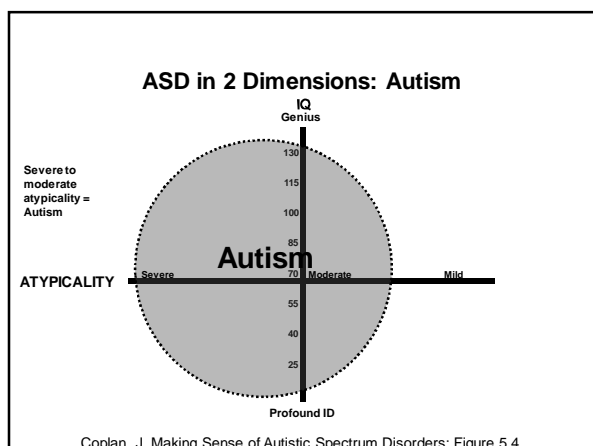
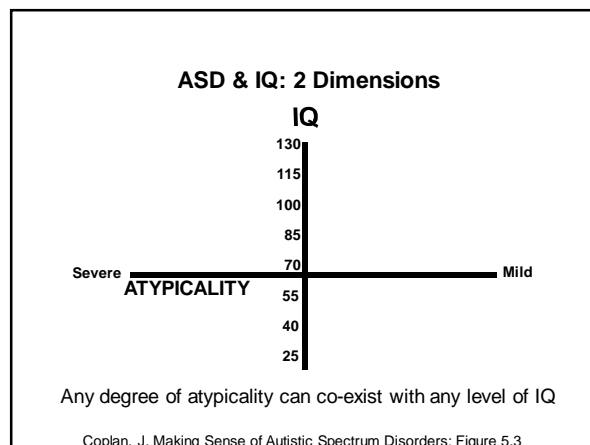
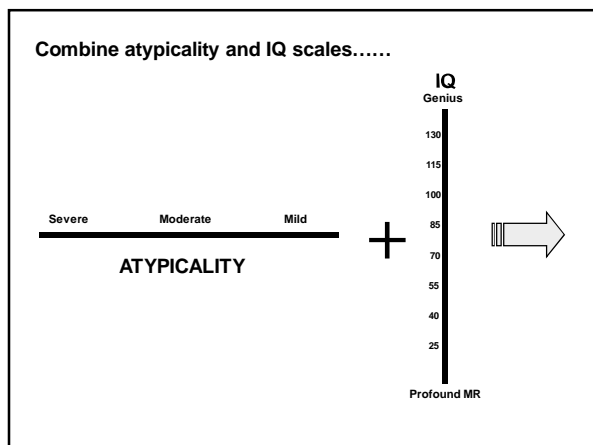
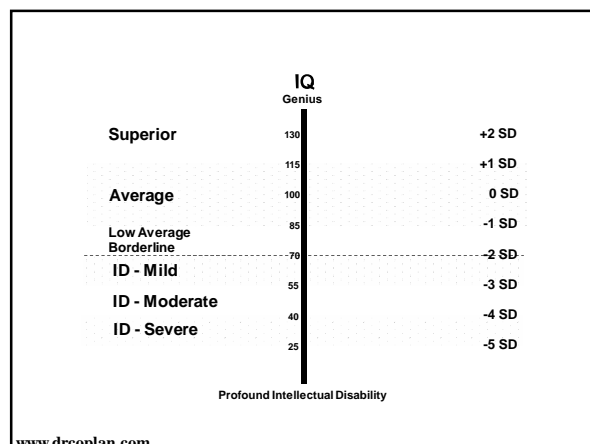
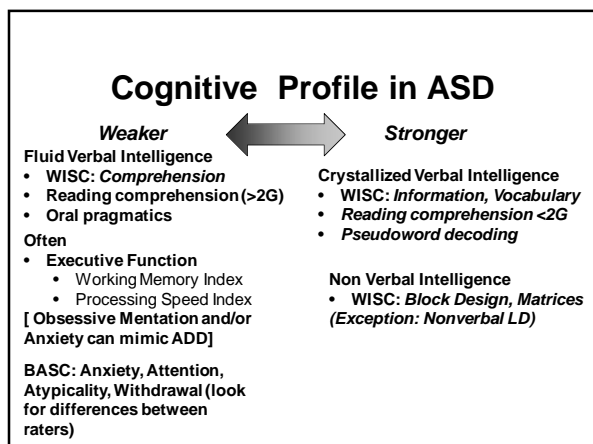
- Self-feeding
 - Finger-feeding
 - Cup
 - Spoon (tool use)
- Self-dressing
 - Unbuttoning, buttoning
 - Zippers, Snaps
 - Tie shoes
- Toilet-training

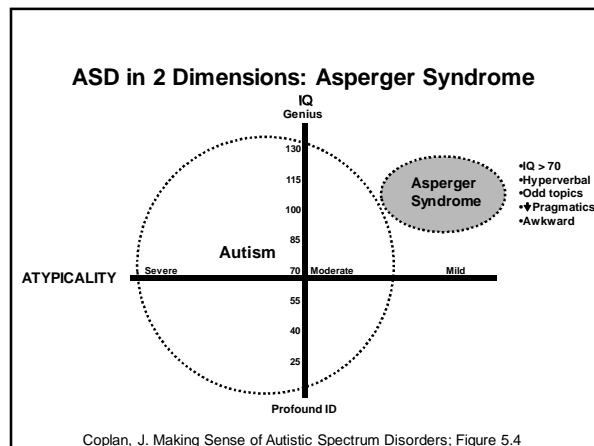
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Play

- Midline hand play (3 mo)
- Banging & Mouthing (7 - 9 mo)
- Casting (12 mo)
- Tools (crayon) ~ 14 mo
- Cause & Effect (14 to 16 mo & up)
- Imitative Play (24 mo)
- Imaginative Play (36 mo)
- Rule-based Play (48 mo)

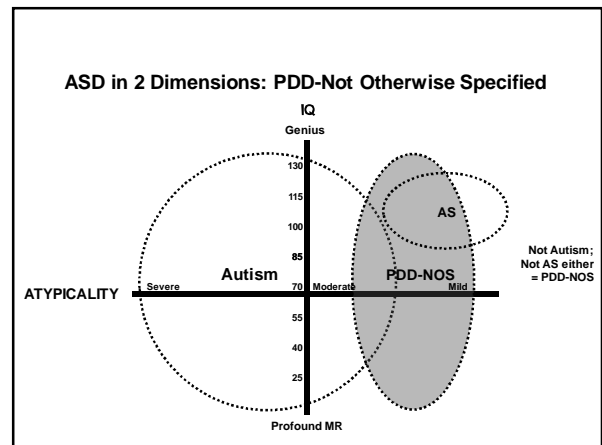
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Asperger's Disorder will be Back[1]
 Journal of autism and developmental disorders [0162-3257]
 Tsai, Luke: 2013 vol:43 iss:12 pg:2914-2942 Luke Y. Tsai¹

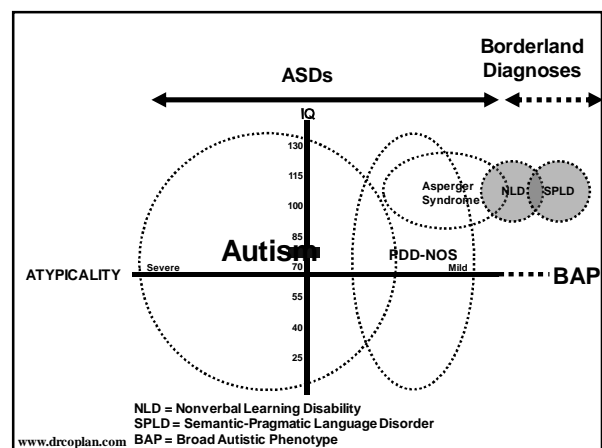
128 publications were identified through an extensive search of major electronic databases and journals. Based on more than 90 clinical variables, 94 publications concluded that there were statistically significant or near significant differences between Asperger's Disorder (AspD) and Autistic Disorder / HFA groups; 4 publications found both similarities and differences between the two groups; 30 publications concluded with no differences between the two groups. DSM-5 will eliminate Asperger's Disorder. However, it is plausible to predict that the field of ASD would run full circle during the next decade or two and that AspD will be back in the next edition of DSM.

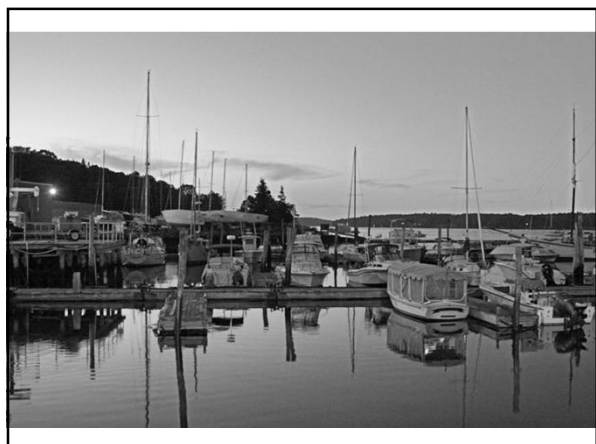


At the "Borderland" of ASD

- **Nonverbal Learning Disability (NLD)**
 - ↓ Language pragmatics
 - ↓ Social skills
 - Disregard for personal space
 - ↓ Coordination / Sensory processing
 - Verbal IQ > Performance IQ
- **Semantic-Pragmatic Language Disorder (SPLD)**
 - ↓ Language pragmatics only
 - DSM5: "Social (Pragmatic) Communication D/O"
- **(Broad Autistic Phenotype: Traits, not disorder)**

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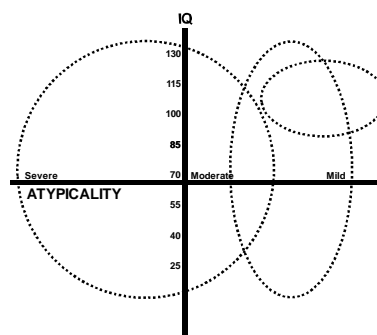
- The autism "explosion": Where did it come from, what does it mean?
- Impact of DSM5

Influence of IQ on Prognosis

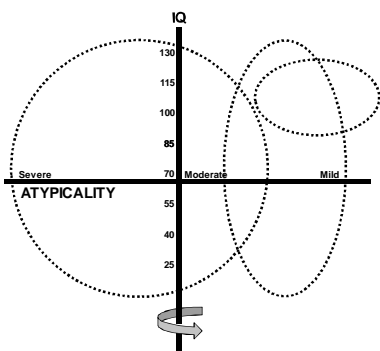
- "In terms of scholastic progress, social competence, and work opportunities, the child's IQ level is as influential as the presence of autism."*
- 1973-2005: > 10 studies; >1000 subjects (reviewed in Coplan, 2010)

* Bartak, L. and M. Rutter, Differences between mentally retarded and normally intelligent autistic children. *Journal of Autism & Childhood Schizophrenia*, 1976. 6(2): p. 109-20

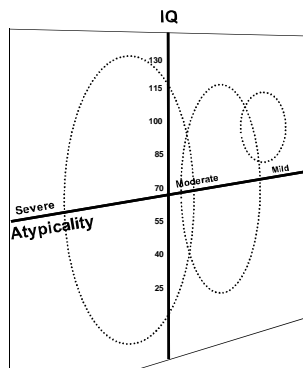
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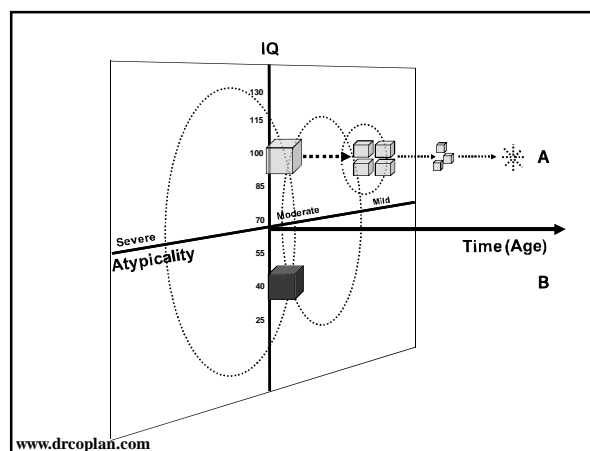
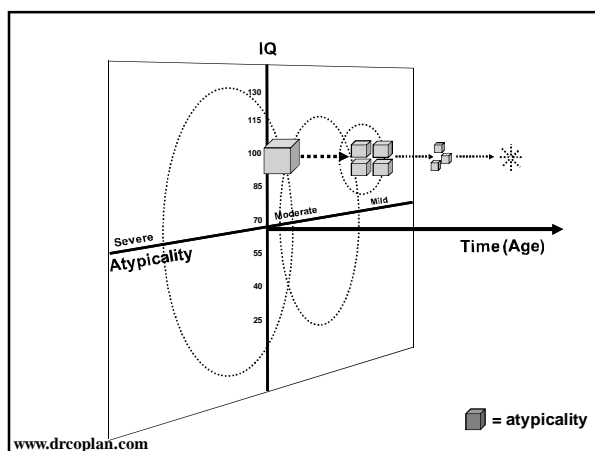
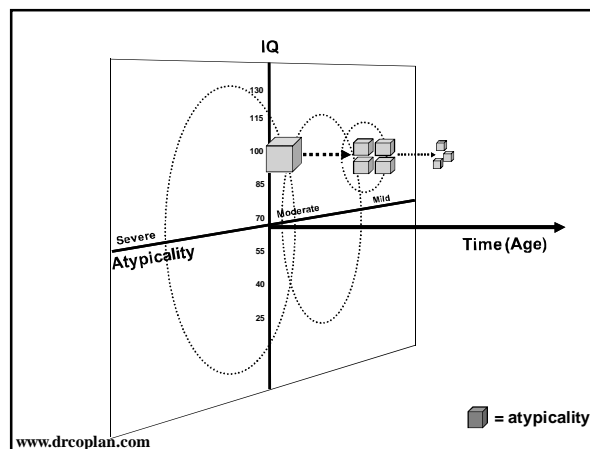
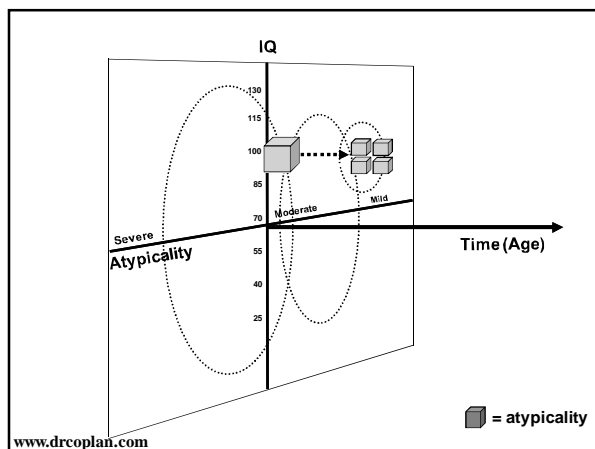
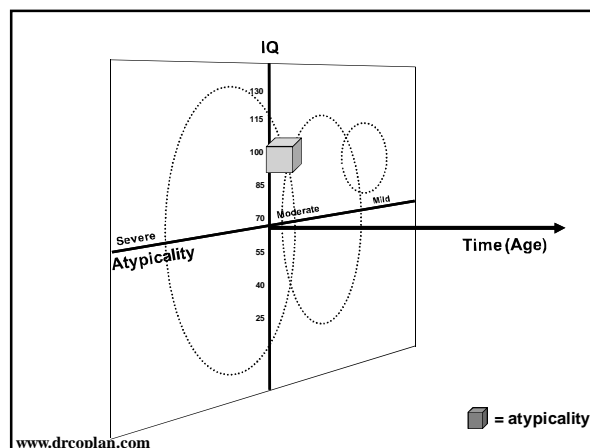
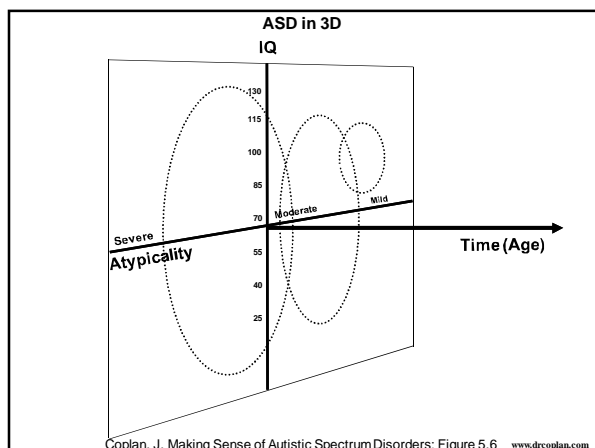
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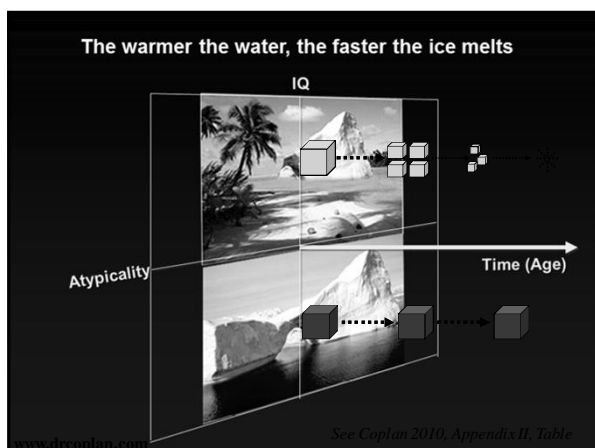
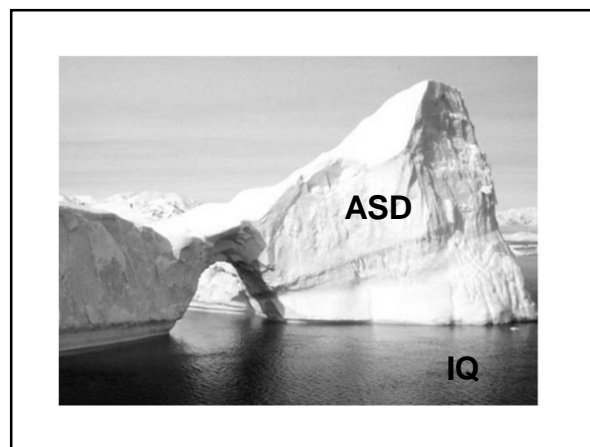
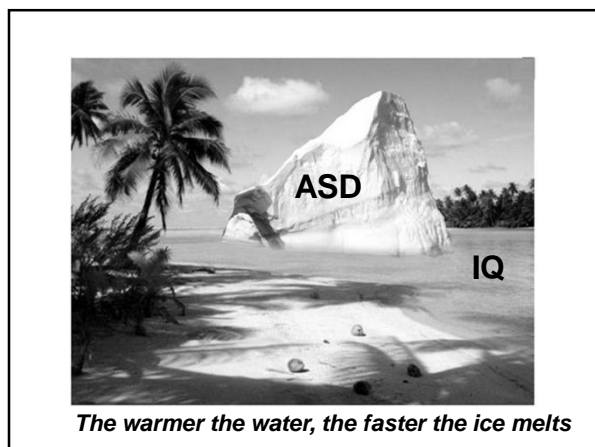
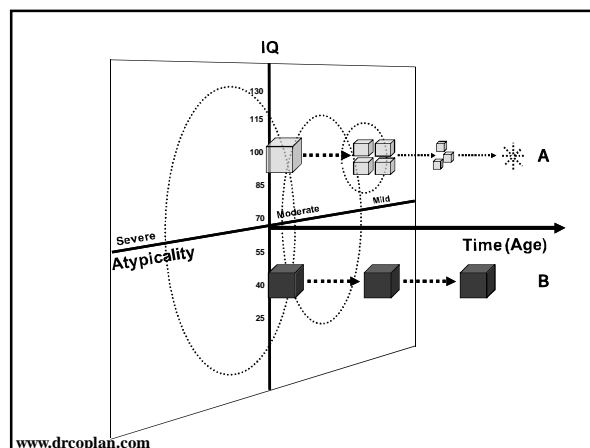
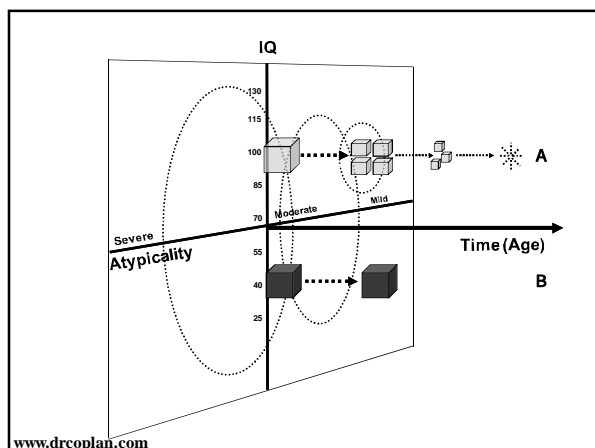


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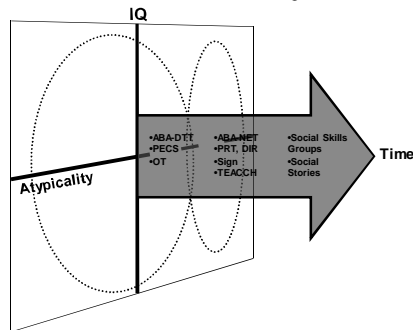
Therapies for ASD: A Modest Proposal

- Therapies for ASD should be matched to the natural history of ASD itself

- *As the child's symptoms evolve, so should the forms of therapy*
- *It's not a matter of right vs wrong; It's a matter of what & when*

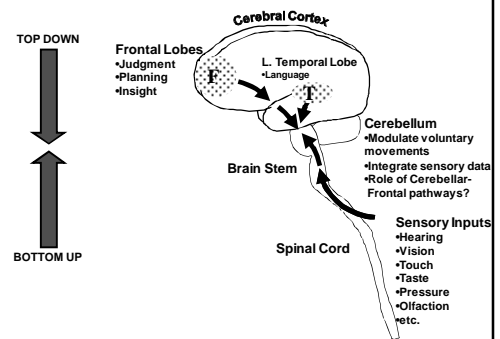
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Progression of Interventions Follows the Natural History



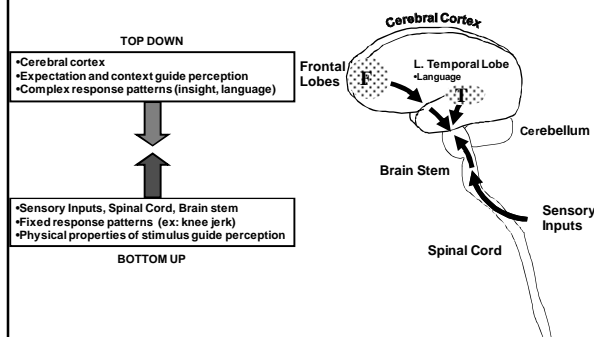
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"Bottom Up" versus "Top Down" - 1



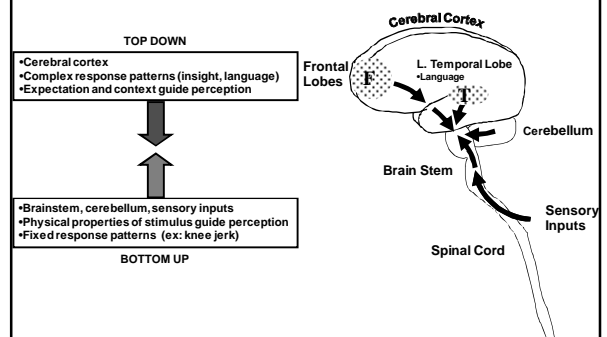
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"Bottom Up" versus "Top Down" - 2

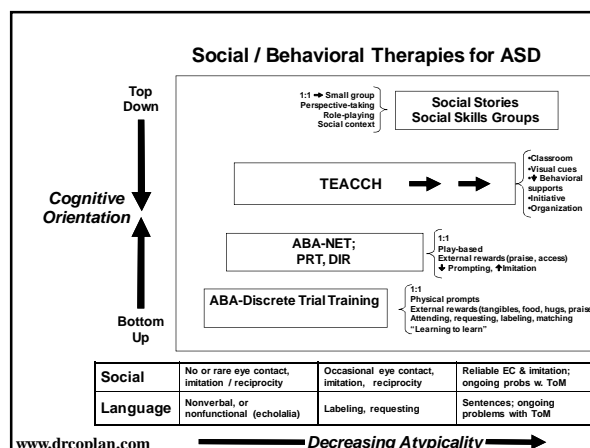
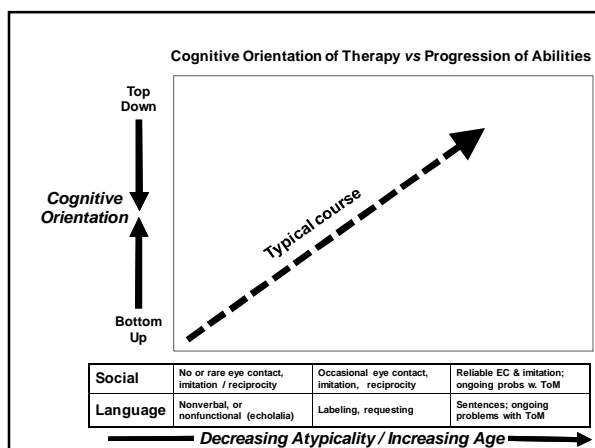
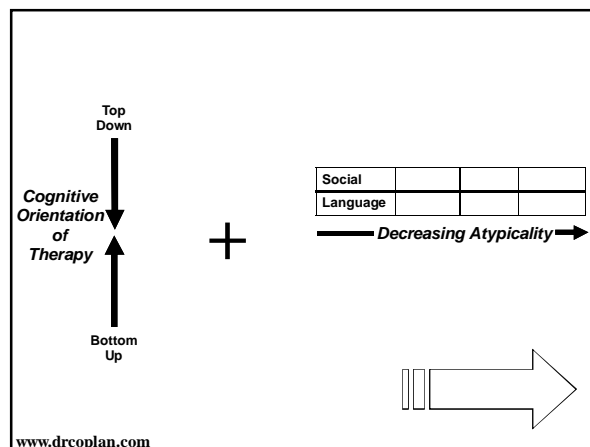
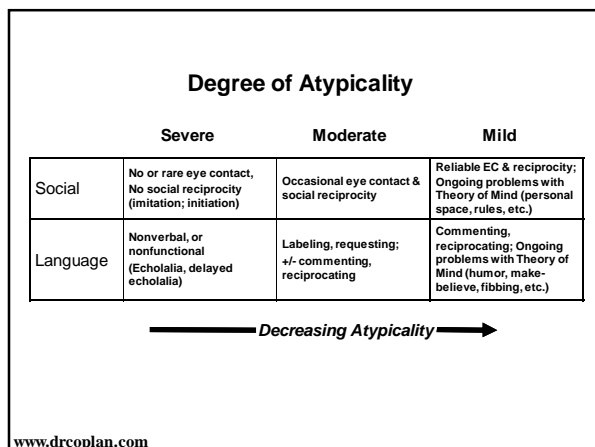
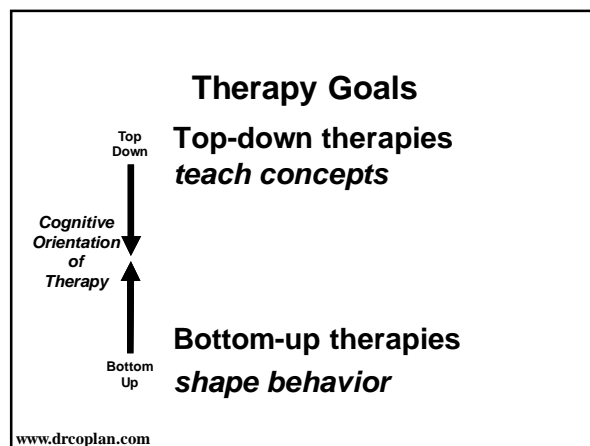
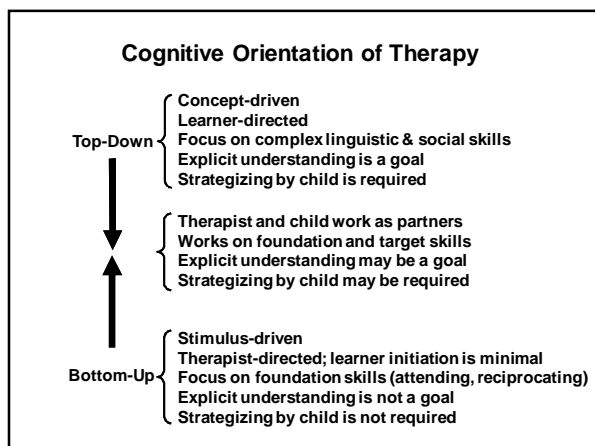


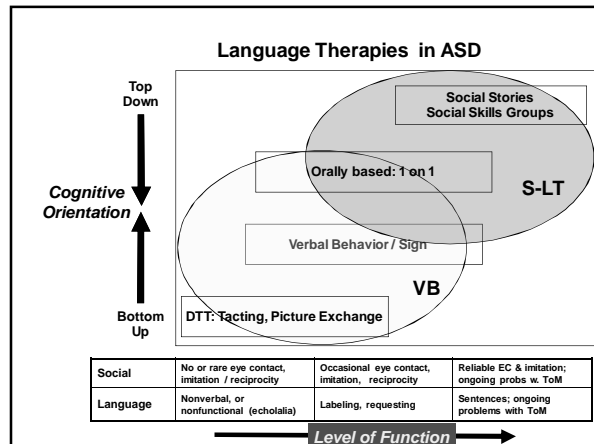
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"Bottom Up" versus "Top Down" - 3



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The ASD "Explosion"

- Are we in an epidemic?
- If so:
 - Is there a smoking gun?
 - Are there preventive or therapeutic measures?
- If not:
 - Where did all these kids come from?
 - Where are the "missing" adults?

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DEFINITIONS

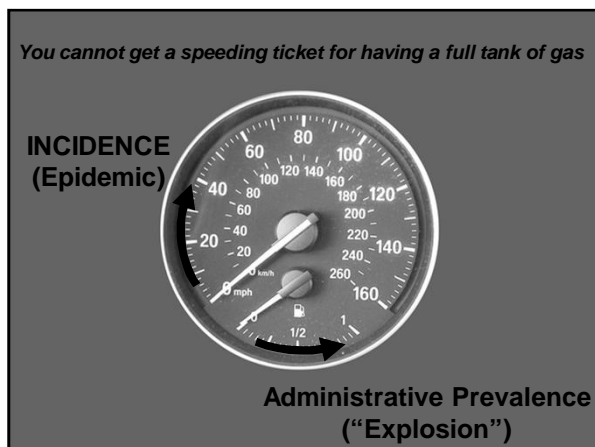
- Incidence
- Prevalence
- Epidemic
- "Explosion"

Incidence = *Rate*

- The number of new cases of a disorder, over a specified period of time, in a defined population
 - New cases of Influenza / 100,000 persons / wk
 - Incidence of ASD =
 - Birth rate of newborns who will have ASD +
 - Attack rate of autistic regression among children
 - The Incidence of ASD is *Unknown*

Prevalence = *Proportion*

- The percent of the population that is affected, at one point in time
 - The % of people with the Flu at a given time
 - The % of people with ASD
- We do not know the prevalence of ASD. What we know is the number of children being served with a *diagnosis* of ASD (the “administrative prevalence”).



Scientific Illiteracy

Age of Autism

Daily Web Newspaper of the Autism Epidemic

Editor: Dan Olmsted
Managing Editor: Kim Stagliano
Editorial Board: Ruth Stein

Sponsored by **LEE SILSBY** COMPOUNDING PHARMACY The leader in quality compounded medications for autism

REPORT AOA
Here to See Shirt send you an A of A t.

« Kevin Leitch's Leftbrain/Rightbrain Sees Conspiracies Left and Right | Main | Autism File Magazine On Classic and Regressive Autism »

MEET OUR ADVERTISERS

CHANGING THE COURSE of AUTISM

A SCIENTIFIC APPROACH FOR PARENTS AND PHYSICIANS

BRYAN JEPSON, M.D. with JANE JOHNSON

FALSE

EVIDENCE-BASED MEDICINE SHOWS THAT:

- Autism is epidemic (1 in 150 children has been diagnosed).
- Autism is a medical disease, not a psychological disorder.
- Autism affects other body organ systems besides the brain.
- Autism is treatable, children are recovering.

TRUE

Scientific Illiteracy

Autism Vol. 491 No. 7422_supp ppS1-S48

nature OUTLOOK

IN THIS SUPPLEMENT

- Outlook
- Collection
- Sponsor page
- Request your free print copy here

As recently as the mid-1990s, autism was thought to be a rare disorder that led to severe mental disability. But since then its reported incidence has ballooned, and it is thought to encompass conditions that vary widely in character and severity. Still, its causes, treatments and even definition remain to be pieced together.

FALSE

What difference does it make?

- If we are really in an epidemic:
 - Is there a smoking gun?
 - Immunizations
 - Mercury
 - Other?
 - Is there a cure or preventive measure?

Known Causes of ↑ Administrative Prevalence of ASD

- Broadening diagnostic criteria
- Broadening Federal service & reporting requirements
- Diagnostic substitution
- Broadening ascertainment methods

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Relationship between *diagnostic criteria* and apparent prevalence

What is the prevalence of “Tall Stature”

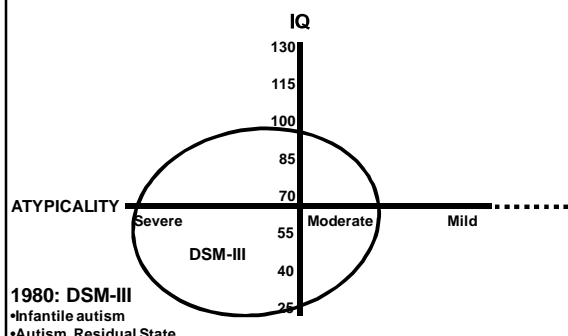
- If the cutoff for “Tall” = 7 feet?
- If the cutoff for “Tall” = 6 ft 10”
- If the cutoff for “Tall” = 6 ft 6”
- If the cutoff for “Tall” = 6 ft
- Etc.....

DSM III

Yr	Event	Comment
1980	DSM-III: First appearance of: •Infantile autism •Autism-residual state: Children who once met criteria for infantile autism but no longer do.	6 mandatory criteria: •Onset < 30 mo. •Pervasive lack of responsiveness to other people •Gross impairment in communication skills •Peculiar speech patterns if speech is present •Bizarre responses to various aspects of the environment •Absence of delusions

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DSM Criteria and the ASD Explosion



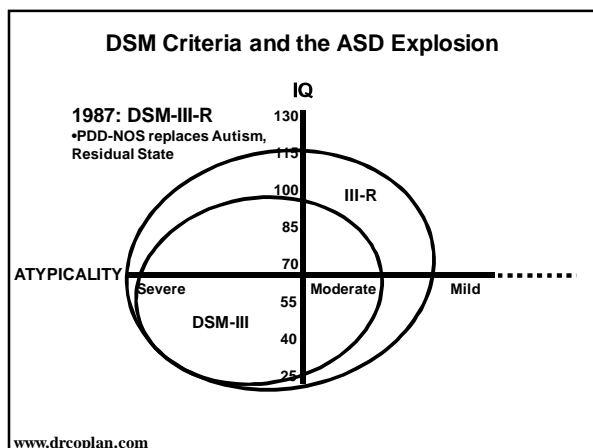
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DSM III-R

Year	Event	Comment
1987	DSM-III-R: •“Infantile autism” replaced by “Autistic Disorder” •“Autism-Residual State” replaced by PDD-NOS	<ul style="list-style-type: none"> • Introduces “Menu” for Dx of Autistic D/O: At least 8 of 16 items across 3 domains: Social, Verbal, and Restricted Activities & Interests* • PDD-NOS encompasses children who never met full criteria for Autism, as well as children who once met such criteria but improved over time.

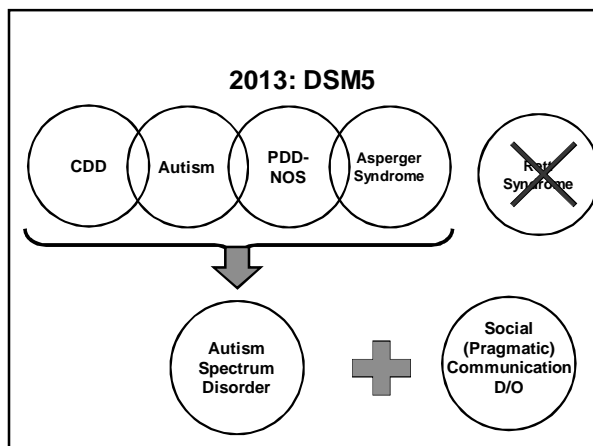
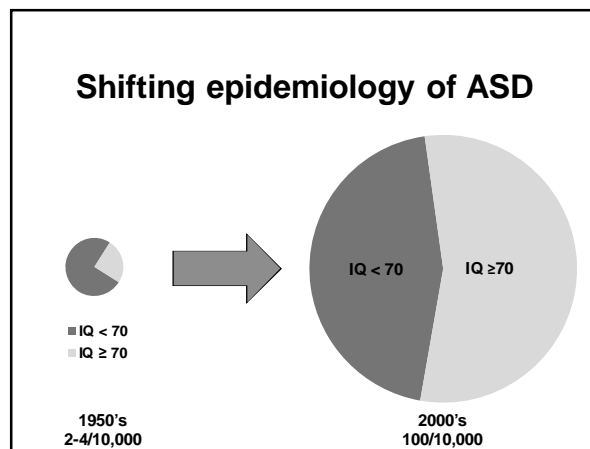
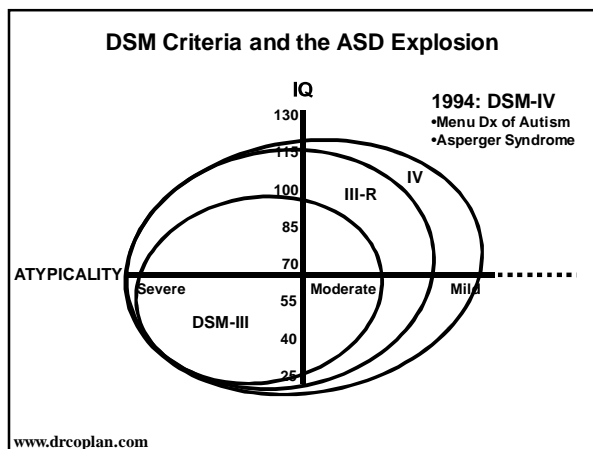
* “Polythetic approach”

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DSM IV		
Year	Event	Comment
1994	DSM-IV: •Three Domains •Social •Language •Repetitive Behavior •Menu of qualifying symptoms* •Asperger's Disorder first appears •"No gross delay in language" * "Polythetic" approach	6 of 12 milder criteria, such as: •Lack of spontaneous seeking to share achievements with other people •Difficulty sustaining a conversation •Lack of varied social imitative play •Persistent preoccupation with parts of objects

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Autism Spectrum Disorder

Two Clinical Domains (vs. 3 in DSMIV, and 4 in Kanner)

A. Deficits in Social Communication and Interaction

- Combines Social & Language domains

B. Restricted, Repetitive, Behaviors, Interests, and Activities

DSM5 - ASD

A. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following,* currently or by history (examples are illustrative, not exhaustive):...

* Doesn't say "all" of the following; intent unclear

Social Communication & Interaction

- Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.

Social Communication & Interaction

- Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.

Social Communication & Interaction

- Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

DSM5 - ASD

B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following, currently or by history (examples are illustrative, not exhaustive)...

Restricted, repetitive patterns of behavior, interests, or activities

- Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases)

Restricted, repetitive patterns of behavior, interests, or activities

- Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat same food every day)

Restricted, repetitive patterns of behavior, interests, or activities

- Highly restricted, fixated interests that are abnormal in intensity or focus (e.g., strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interests)

Restricted, repetitive patterns of behavior, interests, or activities

- Hyper- or hyporeactivity to sensory input or unusual interest in sensory aspects of the environment (e.g., apparent indifference to pain / temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement)

C. Symptoms must be present in the early developmental period (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life).

D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.

E. These disturbances are not better explained by intellectual disability or global developmental delay.

Note: Individuals with a well-established DSM-IV diagnosis of autistic disorder, Asperger's disorder, or PDD-NOS should be given the diagnosis of ASD. Individuals who have marked deficits in social communication, but whose symptoms do not otherwise meet criteria for ASD, should be evaluated for social (pragmatic) communication disorder

- "Because symptoms change with development and may be masked by compensatory mechanisms, the diagnostic criteria may be met based on historical information, although the current presentation must cause significant impairment"

- Implications:


1. No such thing as "Compensated" ASD:
 - If you're not impaired, you can't have ASD
 - What if you were significantly impaired in the past?
2. Excludes "Broad Autism Phenotype," and all other forms of "sub-threshold" atypicality

ASD vs. Social (Pragmatic) Communication D/O		
Symptom Domain*	Autism Spectrum D/O	Social (Pragmatic) Communication D/O
Social and Language	<ul style="list-style-type: none"> ✓ deficits in social-emotional reciprocity ✓ nonverbal communication, and ✓ maintaining/ understanding relationships 	"Deficits in social communication result[ing] in functional limitations in effective communication, social participation, development of social relationships, academic achievement, or occupational performance"
Restricted, repetitive patterns of behavior, interests, or activities	<ul style="list-style-type: none"> ✓ Stereotyped or repetitive motor movements, use of objects, or speech ✓ Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior ✓ Highly restricted, fixated interests that are abnormal in intensity or focus ✓ Hyper- or hyporeactivity to sensory input (at least 2 out of 4) 	NO

DSM5: ASD vs. Social Communication D/O

"Current absence of symptoms would not preclude a diagnosis of autism spectrum disorder, if the restricted interests and repetitive behaviors were present in the past. A diagnosis of social (pragmatic) communication disorder should be considered only if the developmental history fails to reveal any evidence of restricted/repetitive patterns of behavior, interests, or activities"

Implication: Cannot use ADOS, CARS, etc. to exclude Dx of ASD. Must also elicit detailed early developmental history.



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Molecular Autism

<http://www.molecularautism.com/series/dsm5>
<http://www.molecularautism.com/content/4/1/13>

Review

Autism in DSM-5: progress and challenges

Fred R Volkmar* and Brian Reichow
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Molecular Autism 2013, 4:13 doi:10.1186/2040-2392-4-13

The electronic version of this article is the complete one and can be found online at:
<http://www.molecularautism.com/content/4/1/13>

Autism in DSM-5: progress and challenges

Fred R Volkmar* and Brian Reichow

- DSM-IV: 3 categories (Language, Social, Repetitive Behavior) and a menu of qualifying items within each category gave >2,000 combinations of items that would yield an autism diagnosis
- Combining Social and Language into one category, and requiring 3 out of 3 criteria to be met for Repetitive Behavior results in many fewer potential combinations
- "Despite the name change to Autism Spectrum Disorder, the concept actually proposed is apparently more restricted than the DSM-IV approach"

Autism in DSM-5: progress and challenges

Fred R Volkmar* and Brian Reichow

- "The impact is probably greatest among the most cognitively able cases and those with less classic autism presentations"
- Up to 10% may lose Dx of ASD

2013: DSM5



DSM5

- **The Good**
 - Emphasis on early developmental history as an integral component of diagnosis

DSM5

- **The Bad**
 - Combines Social & Language
 - Simplistic view of language
 - Pragmatics
 - Prosody
 - Eliminates Asperger Syndrome (ditto)

[J Autism Dev Disord. 2013 Dec;43\(12\):2914-42. doi: 10.1007/s10803-013-1839-2.](#)

Asperger's disorder will be back.

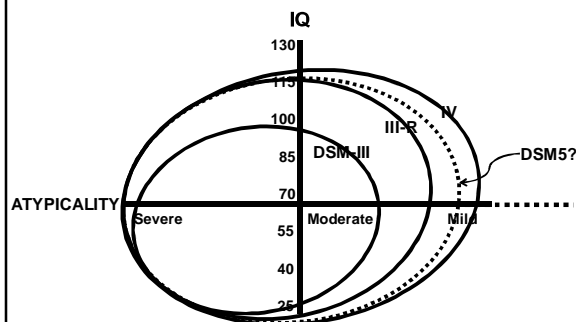
[Tsai LY.](#)

"One hundred and twenty-eight publications were identified through an extensive search of major electronic databases and journals. Based on >90 clinical variables.... 94 publications concluded that there were statistically significant or near significant level of quantitative and/or qualitative differences between Asperger's Disorder and Autistic Disorder / High Functioning Autism... Although DSM-5 ASD will eliminate Asperger's disorder.... it is plausible to predict that the field of ASD would run full circle during the next decade or two and that AspD will be back in the next edition of DSM."

DSM5

- **The Ugly**
 - Creates Social Pragmatic Language Disorder, and locates it *outside of the circle of ASD*
 - ~10% of children with ASD will lose the diagnosis
 - Risk is greatest among highest-functioning children
 - Risk increases with age (as early developmental hx recedes into the past, and examiners place inordinate reliance on measures of current function)
 - Excludes adults with well-compensated ASD. (If you aren't impaired, you can't have ASD)

DSM Criteria and the ASD Explosion



Up to 10% of children with ASD may lose their Dx: Risk is greatest for children with "High Functioning Autism"

COMMUNIQUE

"Implications for School Psychology"
Stephen E. Brock & Shelly R. Hart

"Ultimately, we ask the question as school psychologists: *What does this mean for us?*...The short answer is: Nothing...

The work of school psychologists is, and always has been, *informed* by DSM. DSM has never been a controlling authority....

THE NEWSPAPER OF THE NATIONAL ASSOCIATION OF SCHOOL PSYCHOLOGISTS

COMMUNIQUE

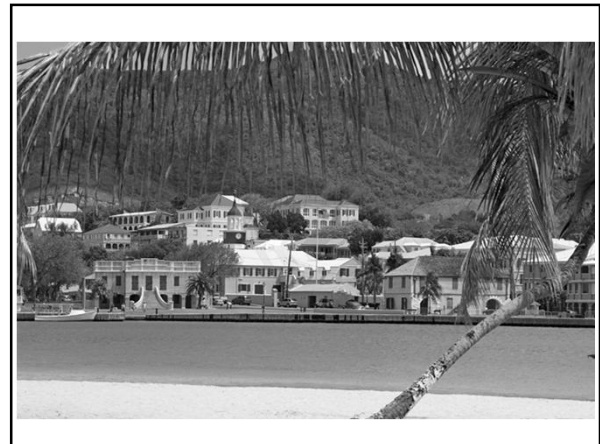
SEPTEMBER 2013

Volume 42, Number 1

"The simple presence of a DSM diagnosis for a student we serve can and should direct our attention, but it never should direct our action.

The education codes and regulations that do direct our action (i.e. IDEA) require clear evidence of an adverse effect on educational functioning, and, as a result, some might argue are more restrictive in this setting than DSM*..."

(* Some of us would beg to differ: Anxiety w/o academic failure, e.g.)



Known causes of ↑ prevalence of children with a Dx of ASD

- Broadening diagnostic criteria
- Broadening Federal service & reporting requirements
- Diagnostic substitution
- Broadening ascertainment methods

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Changes in Federal Law - 1

Year	Event	Comment
1975	Congress enacts Public Law 94-142: Education for All Handicapped Children (EAHC)	First Federal law requiring the States to provide free and appropriate public education (FAPE) to "all children >5 yrs old, regardless of disability"

But.....

**"Handicapping Conditions"
(PL 94-142; 1975)**

- Mentally Retarded
- Learning Disabled
- Speech impaired
- Hearing / Vision Impaired
- Seriously emotionally disturbed
- Orthopedically impaired
- Multi-handicapped
- Other health impaired

Where is autism?

Changes in Federal Law - 2

Year	Event	Comment
1986	PL 99-457: Early Intervention Amendments to PL 94-142	<ul style="list-style-type: none"> •Extends FAPE to children age 3-5, mandated to take effect by 1991 (Section 619, Part B) •Creates Early Intervention for children 0-3 (Section 619, Part H).

Where is autism?

Changes in Federal Law - 3

Year	Event	Comment
1990	Congress Amends PL 94-142 again (PL101-476)	<ul style="list-style-type: none"> •Renamed <i>Individuals with Disabilities Education Act</i> (IDEA) •Includes Autism & Traumatic Brain Injury (TBI) as “eligible disabilities” under the scope of the law

Prior to 1990, according to Federal regulations, ***Autism did not exist.***

Changes in Federal Law - 4

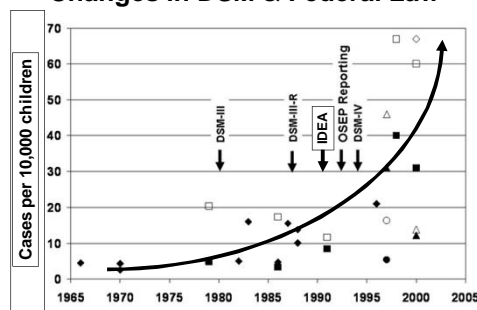
Year	Event	Comment
1991	US Department of Education, Office of Special Education Programs (OSEP) requires reporting of autism by the States, starting in 1992.	<ul style="list-style-type: none"> • Coincides with implementation of Part B (3 to 5 yr olds) & Part H (birth to 3) of PL 99-457

Impact of Federal Law & Regulations

- EI & 3 to 5 Services begin: 1986
- Autism recognized as a fundable D/O:1990
 - Re-classification of children already in the system (diagnostic substitution)
 - Correct classification of new children with autism entering the system
- Reporting autism to US DOE required: 1992

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Prevalence of ASD, 1965 – 2005, relative to Changes in DSM & Federal Law



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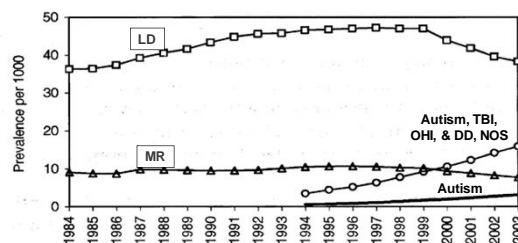
OSEP=Office of Special Ed Programs, US DOE

Known causes of ↑ prevalence of children with a Dx of ASD

- Broadening diagnostic criteria
- Broadening Federal service & reporting requirements
- Diagnostic substitution
- Broadening ascertainment methods

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Diagnostic Substitution



Prevalence of selected reporting categories, US special education, age 6 to 11, 1984-2003. Shattuck, Pediatrics, 2006.

Known causes of ↑ prevalence of children with a Dx of ASD

- Broadening diagnostic criteria
- Broadening Federal service & reporting requirements
- Diagnostic substitution
- Broadening ascertainment methods

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Ascertainment Methods for ASD

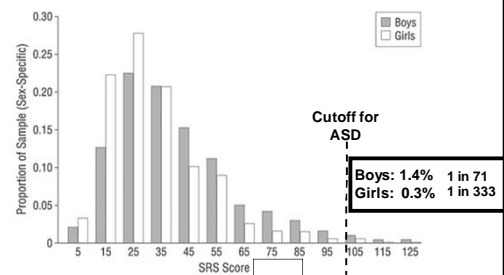
- **Old: Count already-identified cases**
 - School data
 - Medical clinics
- **New: Search for unrecognized cases**
 - Population Screening (EI, ACA, etc.)
- **Ascertainment Bias?**

Population Screening

- **Subjects**
 - Missouri Twin Study
 - 788 twin pairs, age 7-15
 - No identified developmental disorder
- **Methods**
 - Social Responsiveness Scale (SRS); mother = informant (97%)

Constantino JN and Todd, RD. Arch Gen Psych 2003; 60(5):524-30

Prevalence of Autistic Traits in “Normal” Children



SRS scores of 1,576 unselected twins

Constantino JN and Todd, RD. Arch Gen Psych 2003; 60(5):524-30



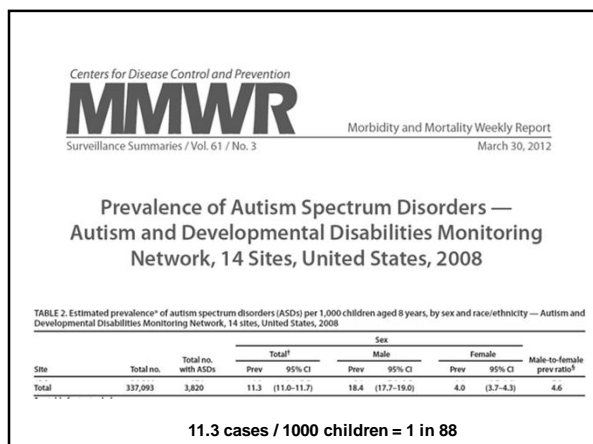
The Affordable Care Act and Autism-Related Conditions

<http://www.hhs.gov/autism/factsheet-aca-autism.html>

- New health insurance plans or insurance policies must cover preventive services without cost-sharing, including autism screening for children at 18 and 24 months

Differences in Prevalence, or Ascertainment Bias?

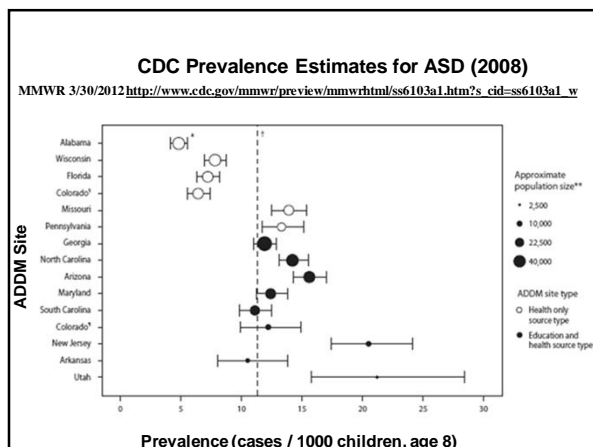
- **Variations in administrative prevalence**
 - By race
 - By geographic region
 - By socioeconomic status



CDC Prevalence Estimates for ASD, 2008

- **Autism and Developmental Disabilities Monitoring Network (ADDM)**
 - 14 Sites (Universities, State Depts of health; not demographically representative of the US as a whole)
- **Data sources:**
 - Healthcare organizations (general & specialty)
 - Schools (some sites)
- **N = 337,093 children, age 8**
- **3,820 met surveillance case criteria for ASD**
 - 79% had a pre-existing Dx of ASD in their records
 - 21% had no ASD Dx in their records

Prevalence of Autism Spectrum Disorders — Autism and Developmental Disabilities Monitoring Network, March 30, 2012 / 61(SS03):1-19
http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6103a1.htm?s_cid=ss6103a1_w



CDC Prevalence Estimates for ASD, 2008

Prevalence (cases per 1000 children), and Prevalence Ratios						
	White	Black	Hispanic	W:B	W:H	B:H
Mean	12.0	10.2	7.9	1.2 : 1	1.5 : 1	1.3 : 1
Range	5.0 – 40.0	4.0 – 25.9	1.4 – 20.0	1.0 – 1.9 : 1	0.6 – 3.5 : 1	0.4 – 5.8 : 1

TABLE 2. (Continued) Estimated prevalence of autism spectrum disorders (ASDs) per 1,000 children aged 8 years, by sex and race/ethnicity — Autism and Developmental Disabilities Monitoring Network, 14 sites, United States, 2008. MMWR 3/30/2012
http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6103a1.htm?s_cid=ss6103a1_w

Socioeconomic Inequality in the Prevalence of Autism Spectrum Disorder: Evidence from a U.S. Cross-Sectional Study*

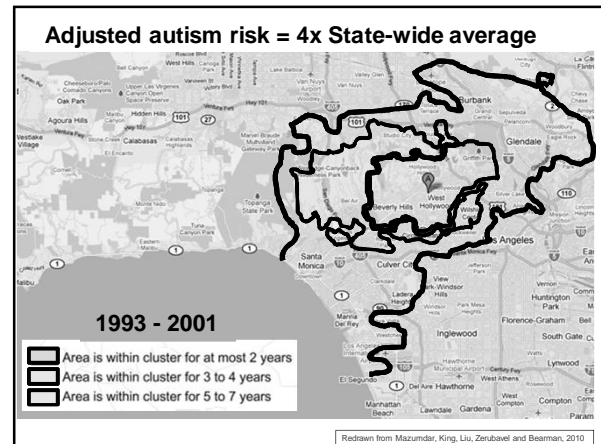
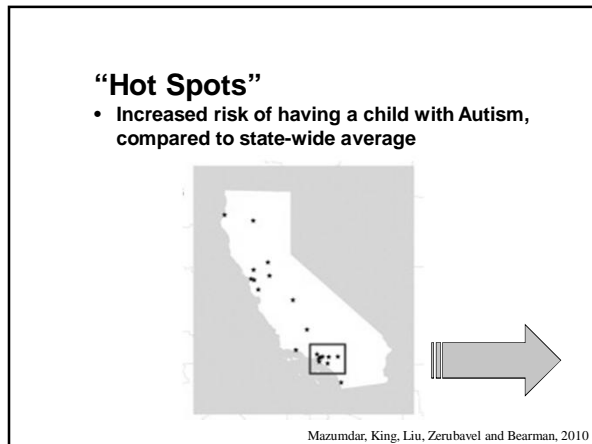
Durkin MS, Maenner MJ, Meaney FJ, et al.
2010 PLoS ONE 5(7): e11551.

Prevalence of ASD increased with increasing SES** in a dose-response manner, with prevalence ratios relative to medium SES of 0.70 for low SES, and of 1.25 for high SES, (P<0.001).

*Based on an analysis of the same dataset as MMWR 2012
** SES = Socioeconomic Status (income, education)

The spatial structure of autism in California, 1993–2001

Health & Place
Volume 16, Issue 3, May 2010, Pages 539–546
Soumya Mazumdar, Marissa King, Ka-Yuet Liu, Noam Zerubavel and Peter Bearman
Institute for Social and Economic Research and Policy Columbia University, New York, NY, USA



Following the money

- \$ earmarked for children with ASD
- Pressure to classify children with borderline symptoms as ASD in order to access to services
 - Improved recognition of children with mild ASD, or
 - Artificial ↑ in number of children with autism diagnosis?

Monday, April 30, 2012 10:26 AM 10,26K followers

disabilityscoop The Premier Source for Developmental Disability News

Lawmakers Want More Autism Training For Teachers
<http://www.disabilityscoop.com/2012/04/30/lawmakers-autism-training/15493/>


April 30, 2012

A bill introduced in Congress would establish a five-year federal grant program to allow school districts to team with universities and nonprofits to train general education teachers and other school staff to best support students with autism. ... Under the bill, the program would be available in school districts where at least 10 percent of special education students have an autism diagnosis....

Where have all the adults gone?

“Since 1% of adults don’t have ASD, doesn’t that prove we’re in an epidemic?”

“Missing” adults: NHS Survey




Autism Spectrum Disorders in adults living in households throughout England

Report from the Adult Psychiatric Morbidity Survey 2007

<http://www.ic.nhs.uk/pubs/asdpsychiatricmorbidity07>

NHS Survey 2007



- National sample of survey of adults living in the community
- Excludes persons in residential care
- Therefore, *under-counts* adults with severe disability

<http://www.ic.nhs.uk/pubs/asdpsychiatricmorbidity07>

NHS Survey 2007

Phase 1
• Autism Quotient (20-Item Screen)
• N=2,854

↓

Phase 2
• ADOS (Autism Diagnostic Observation Schedule)
• N=618

↓

Prevalence of ASD: 1 %

- Male: 1.8% (1 in 56)
- Female: 0.2% (1 in 500)

<http://www.ic.nhs.uk/pubs/asdpsychiatricmorbidity07>

NHS Survey 2007

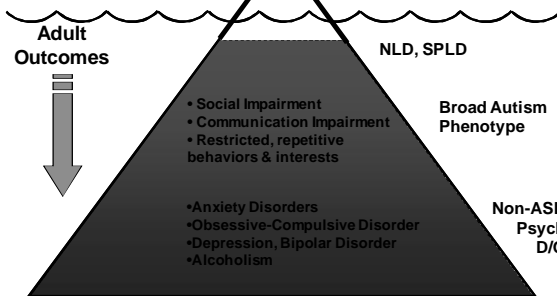
Prevalence of ASD (ADOS 10+), by age *

All adults	Age group		
	16-44	45-74	75+
	%	%	%
ASD (ADOS score of 10+) ^a	1.1	0.9	0.8

Prevalence x Age: Not statistically significant

<http://www.ic.nhs.uk/pubs/asdpsychiatricmorbidity07>

Outcome for children with High Functioning Autism: ~ 15% "Lose the Dx" of ASD, but may "grow into" a Mental Health D/O



Adult Outcomes

NLD, SPLD

Broad Autism Phenotype

Non-ASD Psych D/O

• Social Impairment
• Communication Impairment
• Restricted, repetitive behaviors & interests

• Anxiety Disorders
• Obsessive-Compulsive Disorder
• Depression, Bipolar Disorder
• Alcoholism

NLD: Non-Verbal LD, SPLD: Semantic-Pragmatic Lang. Disorder

© Coplan, 2010

"Missing adults"

- Reality:
 - The prevalence of ASD among today's senior citizens is as great or greater than the prevalence among today's children
 - Must include:
 - Adults in supervised settings
 - Adults who have "outgrown ASD," but would have met criteria as children



Summary

- ASD has a natural history
- Any level of atypicality can coexist with any level of intelligence
- IQ is the major co-factor driving prognosis
- 3D “map” of ASD + IQ + Time:
 - Track child’s progress over time
 - Select best therapy at any given point in time
 - Anticipate future needs (prognosis)
- Therapies follow a bottom-up to top-down progression, in parallel with the natural hx of ASD itself

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“Losing the diagnosis”

- Just because someone outgrows childhood criteria for ASD does not mean that they are cured
 - Persistence of cognitive deficits
 - Persistence or emergence of Mental Health disorders

Summary

- Administrative prevalence of ASD has increased, but no evidence of true increase in prevalence
- Beware of any arguments that rest on the claim that we are in an epidemic
 - Allegations as to cause
 - Promises of cure

Problems with DSM

- Non-theoretical approach (symptoms not tied to neuropsychological constructs)
- Does not recognize language or sensory processing as developmental domains
- Remains tied to the goal of clinical homogeneity within diagnostic categories (“ASD” actually more restrictive than DSM-IV)

Summary

- Impact of DSM5 on educational practices is unknown
 - “Makes no difference to us” ?
 - versus
 - 10% of children may lose Dx
 - Risk is greatest among highest functioning children

JAMES COPLAN, M.D.
Neurodevelopmental Pediatrician · Author · Speaker
Making Sense of Autistic Spectrum Disorders

February 20, 2014
Dr. Coplan presents two workshops at the 2014 NASP (National Association of School Psychologists) Annual Convention in Washington, DC on February 20, 2014. Dr. Coplan's first workshop, from 8:30-11:00 AM is entitled: *Gender Health Issues in ASD: The second, from 12:30-3:30 PM is entitled: Impact of the DSM-5 on Classifying and Serving Children with ASD.* NASP is the premier source of knowledge, professional development, and resources, empowering school psychologists to ensure that all children and youth attain optimal learning and mental health. The convention will be held in Washington, DC, at the Marriott Wardman Park and Omni Shoreham Hotel February 18-21, 2014. More Presentation Handout Part 1 Presentation Handout Part 2

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Thank You!