



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



Mental Health Disorders in ASD: The Elephant in the Room

Session 7063; Friday, July 25, 2014: 2:30 PM-3:45 PM
Indiana Convention Center


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AUTISM SOCIETY
Improving the Lives of All Affected by Autism

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



03:00

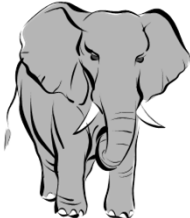
Outline

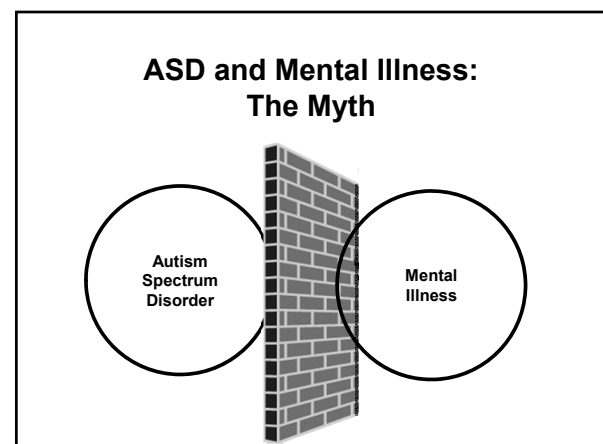
- 1) Statement of the Problem
 - 1) Compartmentalized Thinking
 - 2) "Us vs. Them" : What I learned from Newtown
- 2) Show me the data
 - 1) Intra-individual
 - 2) Intra-familial (with a glance at Family Mental Health)
 - 3) Basic Science
- 3) Does ASD predispose to violent crime?
- 4) Where do we go from here?
 - 1) Individual & Family care
 - 2) System change



Outline

- 1) Statement of the Problem
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The History of Science in 1 Slide

Description & Classification*

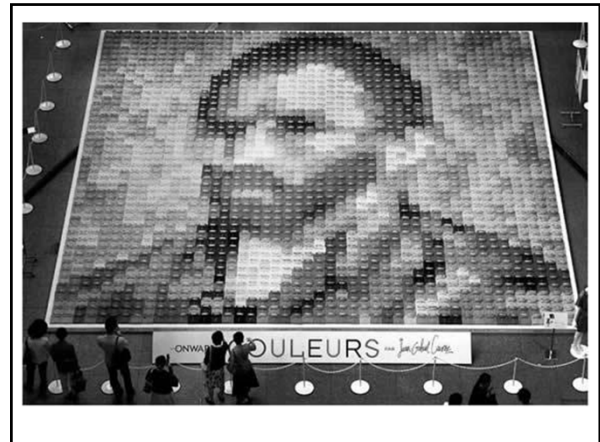
(Group items into categories, based on externally visible characteristics)



Analysis

(Explain & predict, based on an understanding of why and how things happen)

* Plato (428-328 BCE): "Carve Nature at its joints." We can't explain why or how things happen, but if we observe carefully, and group similar items into categories, eventually the big picture will emerge.



Problems with classification schemes based on appearance

- Different underlying mechanisms can produce similar-appearing results
- Similar underlying mechanism can produce different-appearing results

Which 2 go together?



Psychiatry: Where we are today

Description & Classification

(based on externally visible characteristics)



Analysis

(based on an understanding of fundamental mechanisms)

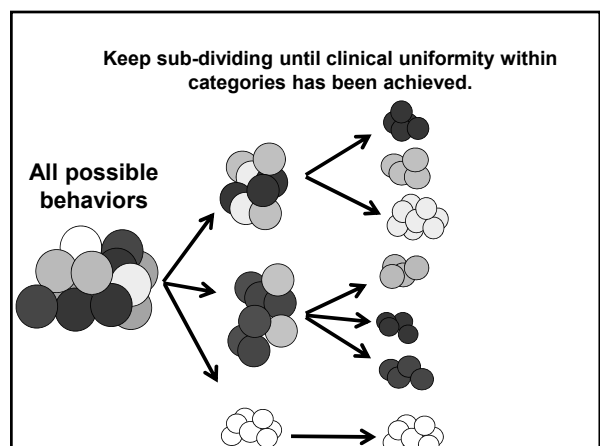
DSM5:

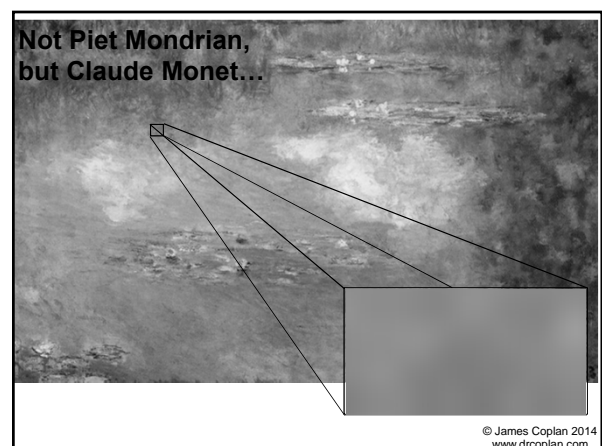
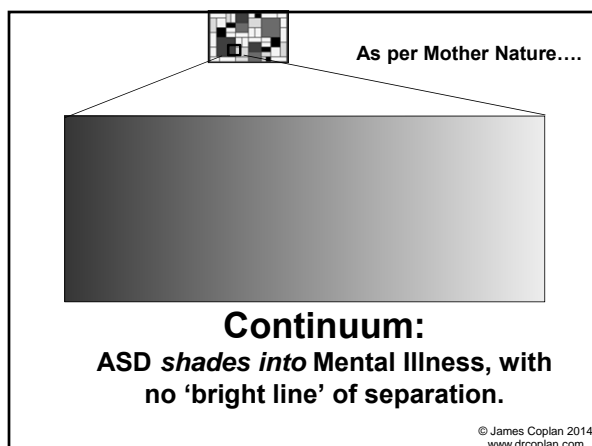
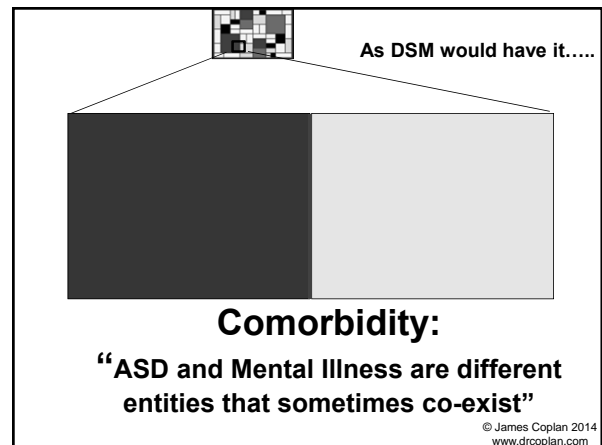
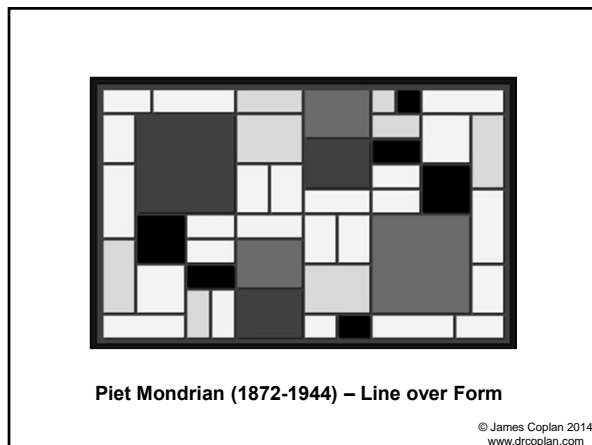
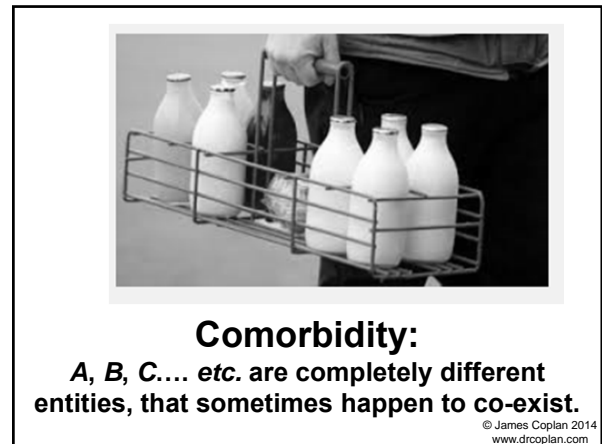
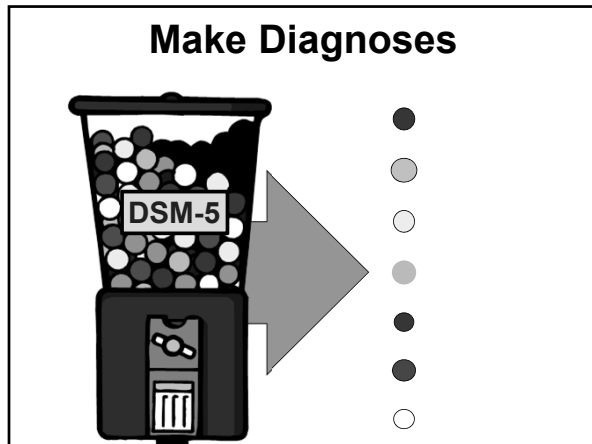
Categories based on symptoms → quest for symptom homogeneity within categories

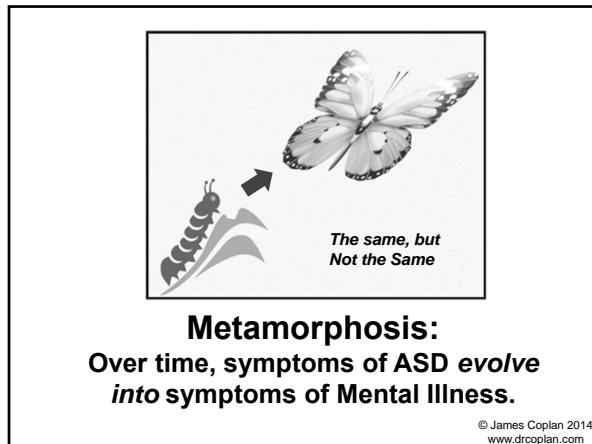


DSM 6

(classification based on causation and brain systems)





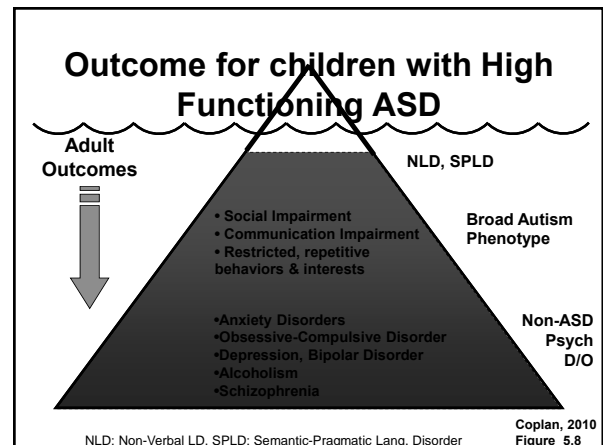
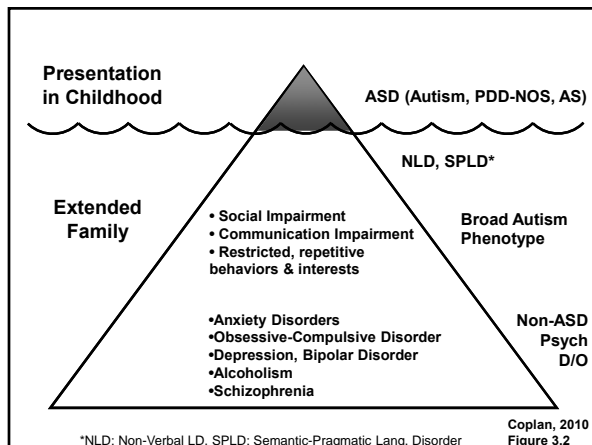


In the world of Metamorphosis...

"Losing the diagnosis" does not mean "cured"

- Persistence of
 - Cognitive patterns
 - Behavioral patterns
 - Emotional patterns
- Emergence of Non-ASD psychiatric disorders
 - Anxiety
 - Depression
 - Mood Disorders
 - Schizophrenia

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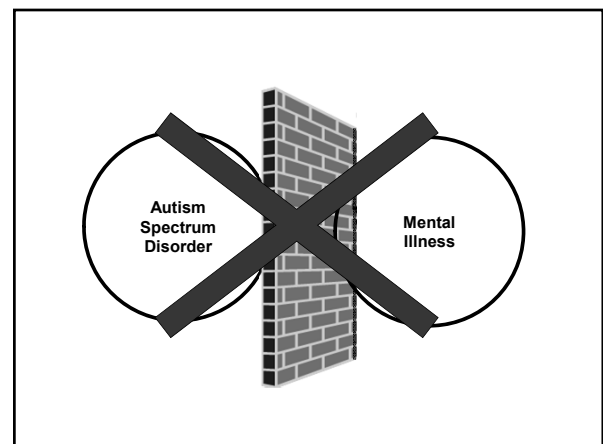
Psychiatry: Coming soon...

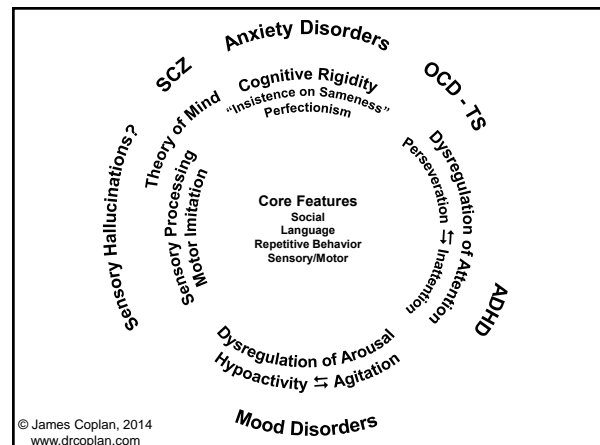
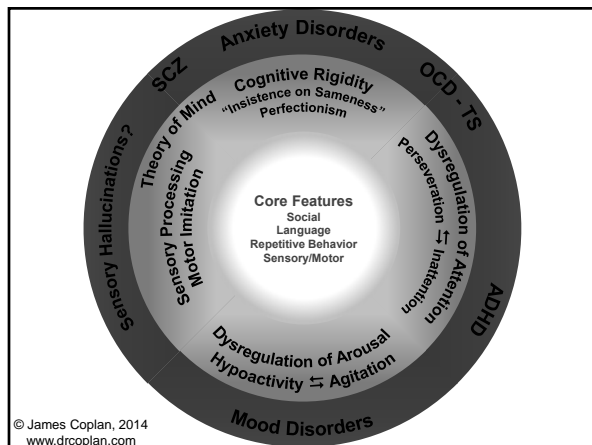
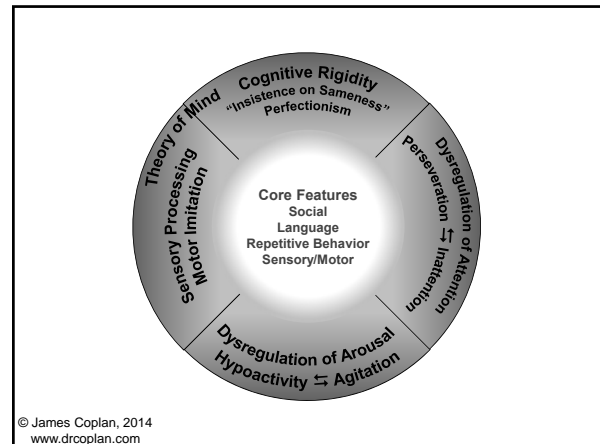
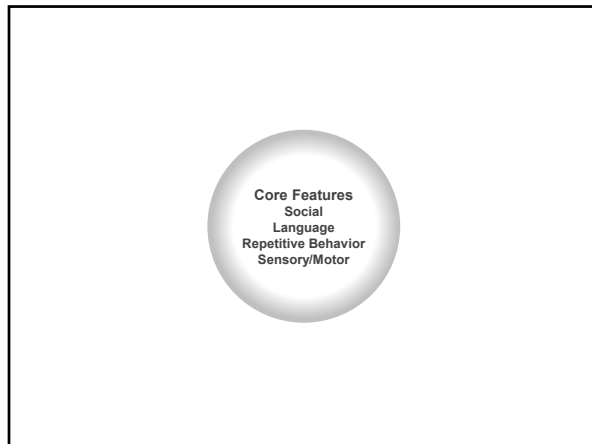
Description & Classification
(based on externally visible characteristics)

Analysis
(based on an understanding of fundamental mechanisms)

DSM5:
Categories based on symptoms → quest for symptom homogeneity within categories

DSM6
Classification based underlying biology; "Mapping ASD from the inside out" (King & Lord 2011)





12:00

Outline

- 1) Statement of the Problem
 - 1) Compartmentalized Thinking
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 - 5) Where do we go from here?

Adam Lanza: What We Think We Know About the Apparent Newtown Shooter

Ryan Lanza reveals brother Adam Lanza was autistic, had personality disorder (Video)


CONNECTICUT SCHOOL SHOOTING | DECEMBER 15, 2012 | BY: RACHAEL MONACO | Subscribe

Adam Lanza Diagnosed With Sensory Integration Disorder

Hartford Courant, Frontline investigation looks into Newtown-school shooter's background.


8:25 | 02/18/2013

<http://www.examiner.com/article/ryan-lanza-reveals-brother-adam-lanza-was-autistic-had-personality-disorder>
<http://www.theatlanticwire.com/national/2012/12/adam-lanza-bio/60018/>
<http://abcnews.go.com/Health/Video/cancer-survivor-catches-fire-at-oregon-hospital-18538818>



Autism Canada's Statement On The Sandy Hook Elementary School Tragedy 12/17/2012

- It has been reported that the shooter at Sandy Hook Elementary School had autism. In the weeks and months to come there will be much more information about his condition, but today it has never been more important to understand that *autism / Asperger's is not a mental health condition. Autism is a neurological condition.....*




ARI Statement on the Newtown, CT Tragedy

The staff at the Autism Research Institute is deeply saddened by yesterday's tragic events at Sandy Hook Elementary School in Newtown, Connecticut...

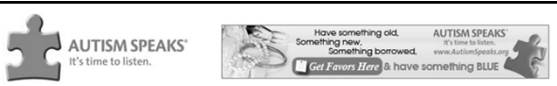
Some public comments have drawn potentially inaccurate and stigmatizing conclusions about a link between the diagnosis [of autism] and a propensity for violence and lack of empathy...

Autism is not a mental health disorder - it is a neurodevelopmental disorder...



Autism Society of America Statement 12/17/2012

- No evidence exists to link autism and premeditated violence...
- Individuals with autism who act aggressively typically do so because they are reacting to a situation...
- *Many of the individuals with Asperger's syndrome who have committed crimes had co-existing psychiatric disorders...*




Statement from Bob and Suzanne Wright

People want immediate or simple answers when an unimaginable tragedy like this occurs. Autism did not cause this horror...

<http://www.autismspeaks.org/news/news-item/statement-bob-and-suzanne-wright>

We have a problem here...
(3 problems, actually)

1. There is no bright line between Autism Spectrum D/O and "Psychiatric" disorders
2. Shifting responsibility onto persons with "mental illness":
 - Stigmatizes the mentally ill, and
 - Ignores the mental health needs of persons with ASD




15:00

Outline

1) Statement of the Problem

2) Show me the data

- a) Intra-individual
- b) Intra-familial (with a glance at Family Mental Health)
- c) Basic Science
- 3) Does ASD predispose to violent crime?
- 4) Where do we go from here ?

(a) Intra-Individual

• **When co-morbidity approaches 100%, is it still “co”- morbidity?**

• *Or is it an integral part of the disorder itself ?*

Psychiatric Symptom Impairment in Children with Autism Spectrum Disorders

Kaat, A.J., et al. Journal of Abnormal Child Psychology, 2013

- **115 pts w. ASD at University Hosp. Child Devel. Clinic**
 - Age 6–12 yr; Male : 86 %; White: 91 %
 - Mean IQ : 85
 - ≥70: 91 (77%)
 - <70: 24 (23 %)
 - Spectrum Dx:
 - Autistic Disorder: 31 %
 - Asperger's Disorder: 19 %
 - PDD-NOS: 50%
- **Child and Adolescent Symptom Inventory-4R**
 - Parent & teacher ratings

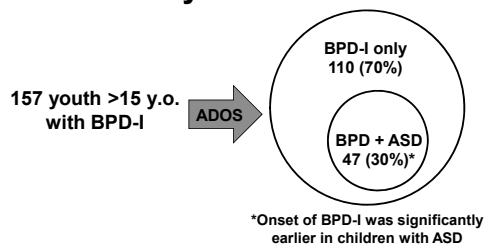
Psychiatric Symptom Impairment in Children with Autism Spectrum Disorders

Kaat, A.J., et al. Journal of Abnormal Child Psychology, 2013

Disorder	Prevalence (%) [*]	
	Impairment ^{**}	DSM-IV criteria
ADHD (any type)	83%	82%
Oppositional defiant disorder	53%	34%
Conduct disorder	23%	9%
Anxiety disorders	70%	47%
• Generalized anxiety disorder	• 48%	• 32%
• Social phobia	• 51%	• 23%
Major Depressive D/O, Dysthymia	45%	19%
Manic episode	53%	18%
Schizophrenia	48%	10%
Any disorder	94%	84%

^{*} Combined Parent & Teacher ratings^{**} “Impairment” = Symptoms “Often or Very Often”

Mood D/O in ASD: Comorbidity or Continuum?



Examining the comorbidity of bipolar disorder and autism spectrum disorders: a large controlled analysis of phenotypic and familial correlates in a referred population of youth with bipolar I disorder with and without autism spectrum disorders. *J Clin Psychiatry*. 2013 Jun;74(6):578-86. Joshi G, Biederman J, Petty C, et al.

ASD, Psychosis, and Schizophrenia (SCZ)

Psychosis

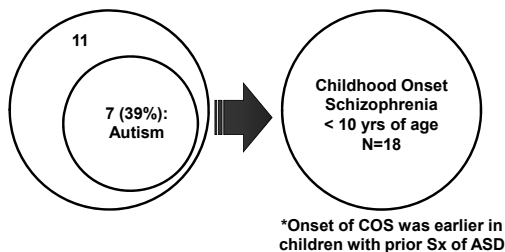
- **Psychosis:** A symptom of mental illness characterized by radical changes in personality, impaired functioning, and impaired reality testing (hallucinations / delusions).
- Psychosis may appear as a symptom of
 - Mood d/o
 - Personality d/o
 - Schizophrenia
 - Schizophreniform d/o, Schizoaffective d/o, etc.
 - Psychotic disorders (Brief psychotic d/o, psychotic d/o due to a general medical condition, substance-induced psychotic d/o, etc.)

Schizophrenia

<http://medical-dictionary.thefreedictionary.com/schizophrenia>

- **A chronic psychotic disorder (or a group of disorders)** marked by severely impaired thinking, emotions, and behaviors.
- **Symptoms:**
 - (+): Hallucinations, delusions, disorganized speech (loose associations); inappropriate, odd, or catatonic behavior
 - (-): Apathy / avolition; anhedonia, poor social function, ↓ speech
 - Cognitive: Impairment of attention, memory, planning (executive function), insight

Autism → Schizophrenia Comorbidity, Continuum, or Metamorphosis?



Symptom development in childhood onset schizophrenia
Watkins JM, Asarnow RF, Tanguay PE.
J Child Psychol Psychiatry. 1988 Nov;29(6):865-78

The association between early autistic traits and psychotic experiences in adolescence

Jones, R.B., et al., Schizophr Res, 2012. 136(1-3): p. 164-189

- **Avon Longitudinal Study of Parents and Children (ALSPAC) birth cohort**

Birth cohort:
N = 14,541
(1991-1992)

7 yr old eval:
N = 8,232

12 yr old eval:
6,439

The association between early autistic traits and psychotic experiences in adolescence

Jones, R.B., et al., Schizophr Res, 2012. 136(1-3): p. 164-189

Questions at age 7:

- Speech development
- How they got on with others (social interaction problems)
- Odd rituals or unusual habits that were hard to interrupt

Questions at age 12: Any of the following in past 6 mo?

- Hallucinations (visual, auditory)
- Delusions (being spied on, persecution, thoughts being read, reference, control, grandiose ability, other)
- Thought interference (thought broadcasting, insertion and withdrawal)

The association between early autistic traits and psychotic experiences in adolescence

Jones, R.B., et al., Schizophr Res, 2012. 136(1-3): p. 164-189

- “Childhood autistic traits, particularly speech problems and odd rituals or unusual habits, are associated with psychotic experiences in adolescence.
- This may be a result of a shared aetiology or because autistic traits may also be an early precursor of psychotic experience”

“Is Schizophrenia on the Autism Spectrum?”

King & Lord, 2011

- “Schizotypal Personality” is distinguished by “unusual preoccupations, unusual perceptual experiences, odd thinking and speech (e.g., overelaborate, or stereotyped), inappropriate or constricted affect, behavior or appearance that is odd, eccentric, or peculiar; lack of close friends or confidants other than first-degree relatives, and social anxiety...”

“Is Schizophrenia on the Autism Spectrum?”

King & Lord, 2011

- “What arguably distinguishes schizophrenia spectrum from autism spectrum in two individuals who otherwise share all of these symptoms is the presence of paranoid ideation...”

“Is Schizophrenia on the Autism Spectrum?”

King & Lord, 2011

- “Given the degree of overlap, one might reasonably ask if paranoid thinking could be a logical downstream consequence of a common underlying difficulty in the perception of social communication”

Theory of Mind



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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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Q: What's happening in this picture?

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



Q: What's happening in this picture?
A: The boy is hoarding animals.



Q: What's happening in this picture?
A: The kitten is on the boy's back and is about to eat him.

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

What's happening in this picture?



What's happening in this picture?



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

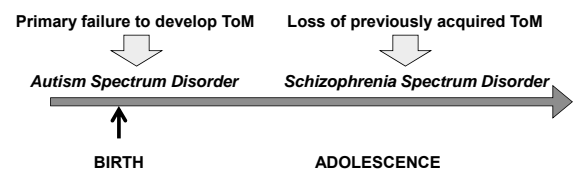
What's happening in this picture?



"They are stealing the children."

Possible Relationship Between ASD and SCZ

How would your behavior change, if you suddenly lost Theory of Mind (ToM)?



25:00

(b) - Intra-Familial: Psychiatric morbidity in the families of children with ASD



It's a family affair...

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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
www.drcoplan.com

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Welcome

James Coplan, MD

Related Links
Here are some of my favorite links to other web sites and resources for parents. Check them out!

- AAP Offers Sound Advice on Autism: New Resource
- American Academy of Pediatrics
- autismresources.com
- Early Language Milestone Scale (ELM Scale-2)
- Facebook
- Leo Kanner: Autistic Disturbances of Affective Contact (*Nervous Child*, vol. II, 1943, pp. 217-250). The original and still the best discussion on Psychoticism in autism in the young child.
- Planning
- Pediatrics® Journal
- The Incredible 5 Point Scale
- Variety

PATHOLOGY

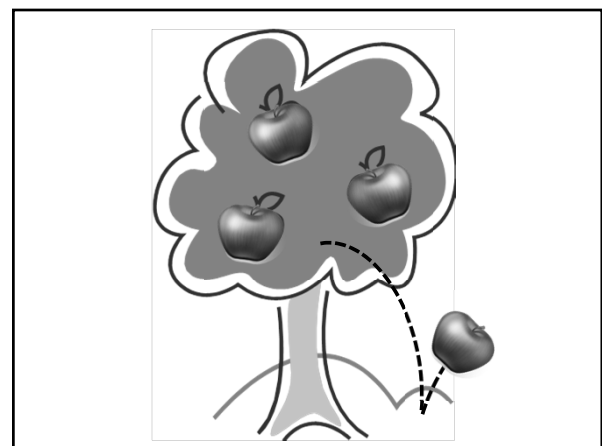
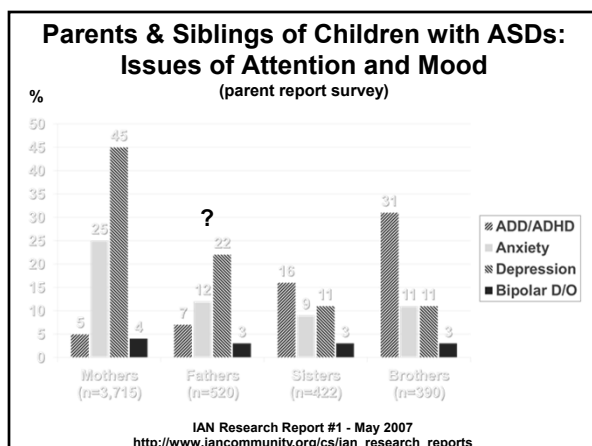
To understand and manage emotional problems in more difficult, Psychoticism and/or autism, we have created a new tool: the Pathology Scale. This tool is designed to help us understand the child's emotional state, which we can then use to guide our treatment.

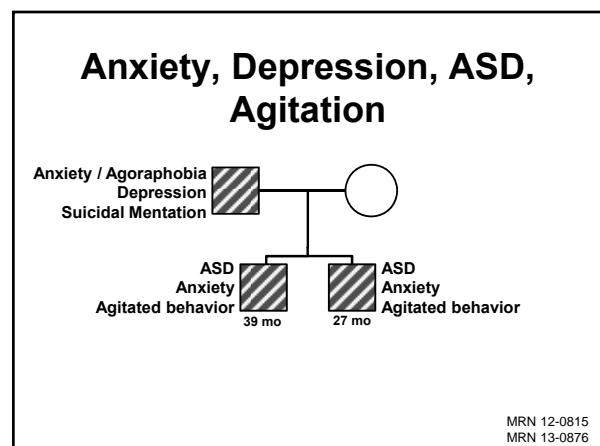
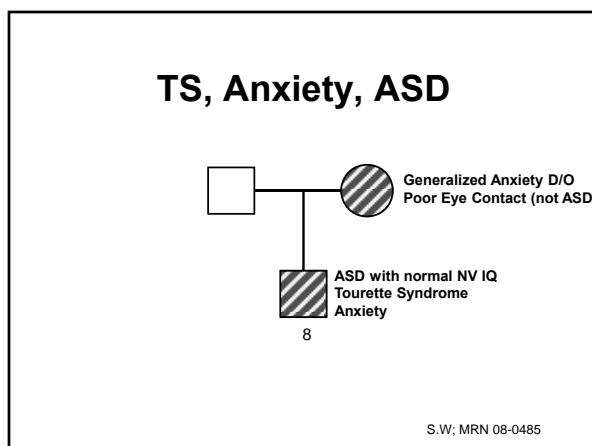
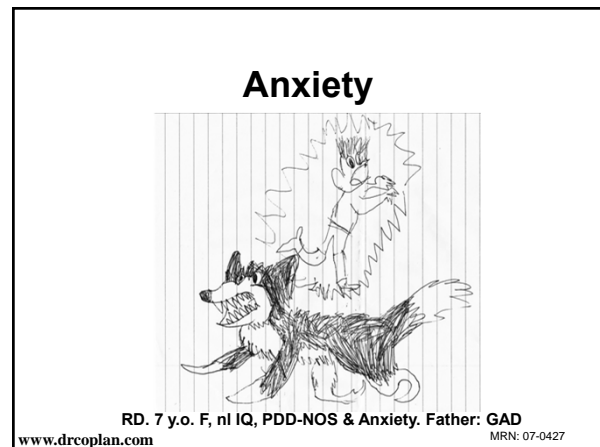
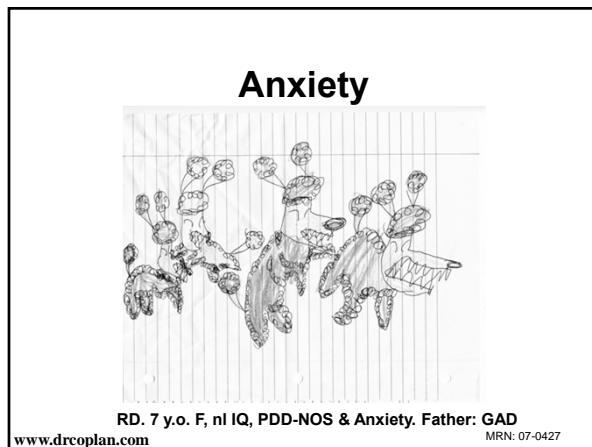
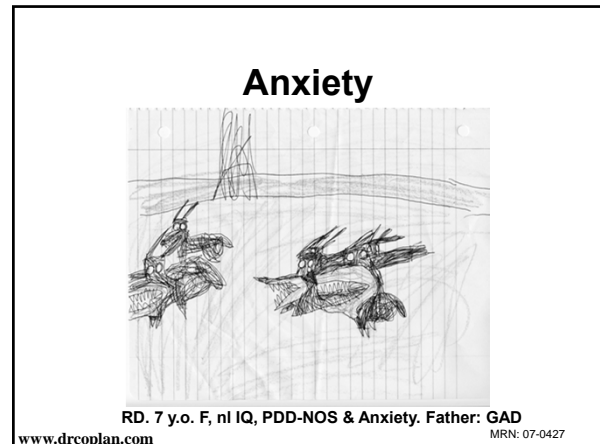
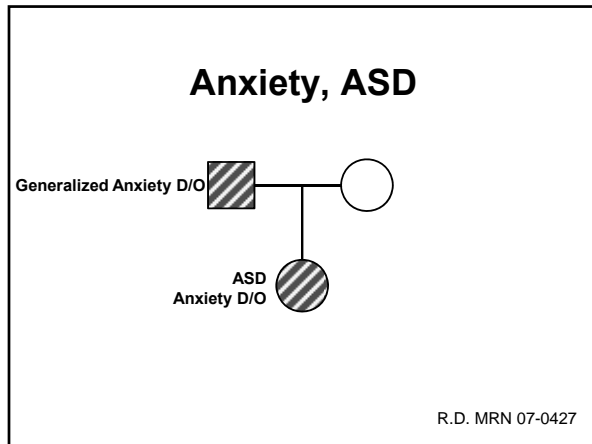
AUTISTIC DISTURBANCES OF AFFECTIVE CONTACT
By LEO KANNER

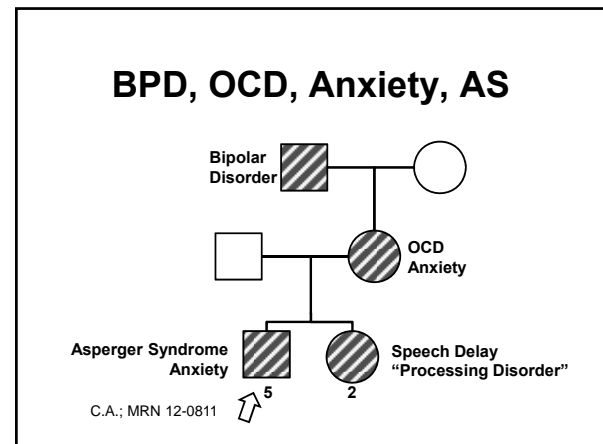
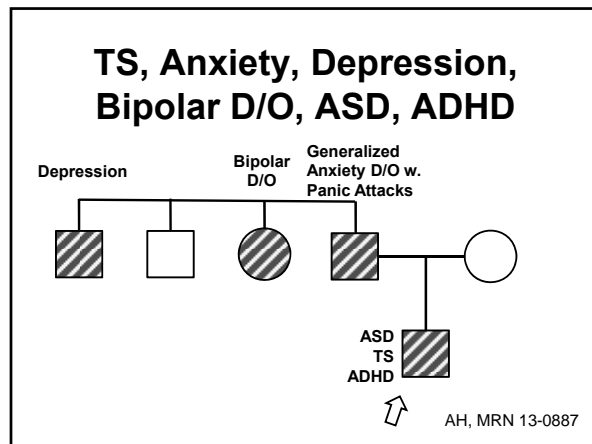
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Kanner, 1943

[T]here is a great deal of obsessiveness in the family background. The very detailed diaries and reports and the frequent remembrances, 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.







Severe mood problems in adolescents with autism spectrum disorder

Simonoff, E., et al., Journal of Child Psychology and Psychiatry, 2012. 53(11): p. 1157-1166

- 91 adolescents w. ASD (M: 83)
- **Methods:**
 - IQ, Adaptive function, neuropsych measures
 - “Severe Mood Problems (SMP) Scale”
 - Explosive rage
 - Low mood
 - Depressive thoughts
 - Labile mood
 - Maternal self-report (GHQ)
 - maternal mood, anxiety and somatic difficulties

Severe mood problems in adolescents with autism spectrum disorder

Simonoff, E., et al., Journal of Child Psychology and Psychiatry, 2012. 53(11): p. 1157-1166

Results

- High SMP: 24 (26%)
 - Predictors of High SMP:
 - Emotional & behavioral problems at age 12
 - Autism severity (by parent report)
 - Maternal GHQ: “The current analyses suggest a specific relationship between maternal affective symptoms and SMP in offspring”
 - Not predictors:
 - Full Scale IQ
 - Adaptive function

Bullying Experiences Among Children and Youth with Autism Spectrum Disorders.

Cappadocia, M.C., J.A. Weiss, and D. Pepler, JADD, 2011

Subjects

- 192 children / young adults w. ASD age 5–21
 - HFA (14%)
 - AS (54%)
 - PDD-NOS (13%)
 - Autism (19%)

Results

- Bullied (physical, verbal, social, cyber) within the past month: 77%
 - 1 time: 11%; 2-3 times: 23%; ≥ 4 times: 43%

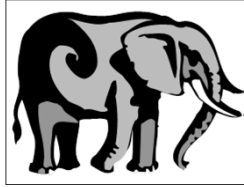
Cappadocia, M.C., J.A. Weiss, and D. Pepler, Bullying Experiences Among Children and Youth with Autism Spectrum Disorders. JADD, 2011

Risk factors for being bullied	p*
Child - Gender	NS
Child - Age (being younger)	< .05
Child - Social skills deficit	NS
Child - Communication difficulties	< .05
Child - Internalizing mental health problems	< .001
Child - Externalizing mental health problems	NS
Parent - Mental health problems	< .01
Child - Fewer friends at school	< .05

*NS = Not statistically significant. Smaller p = less likely to occur by chance.

30:00

The Real Elephant in the Room



Child w. ASD (± MH D/O) + Parent w. MH D/O =



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Family Mental Health

(“We give our children roots and wings” — Hodding Carter)

Family Mental Health is a key ingredient in outcome for all children, but especially for the child with developmental disability, who is less able to work around obstacles arising from family dysfunction than a child with normal development.

© James Coplan, 2013.

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Signs of Family Mental Health

- **Cognitive, Emotional, and Tactical Flexibility**
 - Shifting alliances (adults vs. kids, “boys vs. girls,” etc.)
 - Shifting roles (role of “hero” or “in the doghouse”)
 - Shifting solutions (one size does not fit all; “equitable” vs. “equal”)
 - Shifting combinations for activities. All legitimate combinations should come up once in a while.
- **Sense of humor / playfulness / resilience**

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Danger Signs

- **Inflexibility**
 - Fixed roles
 - Fixed solutions
- **Hypervigilance**
 - Lack of trust in care providers
- **Social Isolation**
 - “Circle the wagons”
 - “Nobody helps us!”

Vignette #1

- **“Obedience is very important to me.”**
 - Father of 10 y.o. boy with ASD
 - Fa: Untreated anxiety d/o
 - Keeps unsecured firearms in the home
 - Describes son with ASD as “a predator,” because “everything is all about him”

Vignette #2

- **“Nobody helps us.”**
 - Mother of 14 y.o. boy with ASD
 - Mo.: Untreated Anxiety D/O
 - Family has no social supports
 - Child is on homebound instruction
 - Spends hrs/day playing violent video games
 - Threatens to “kill” the examiner during evaluation when E. interrupts game play

Family Function: Resources

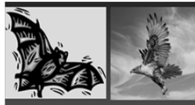
- The American Association of Marriage and Family Therapy
– <http://www.aamft.org/iMIS15/AAMFT/>
- The Bowen Center
– <http://www.thebowencenter.org/>

(c) - Basic Science

- ADHD
- Anxiety
- ASD
- Bipolar D/O
- MDD (Major Depressive D/O)
- Schizophrenia

Two more terms

- **Phenocopy:** Different genetic mechanisms → Similar-appearing outcomes



- **Pleiotropy:** Similar genetic mechanisms → Different-appearing outcomes



Developmental brain dysfunction: revival and expansion of old concepts based on new genetic evidence

Andres Moreno-De-Luca*, Scott M Myers*, Thomas D Challman, Daniel Moreno-De-Luca, David W Evans, David H Ledbetter

	Frequency in clinical cohorts*	Intellectual disability or developmental delay	Autism spectrum disorder	Schizophrenia	Epilepsy
22q11.2	1 in 167	✓	✓	✓	✓
16p11.2	1 in 241	✓	✓	–	✓
1q21.1	1 in 309	✓	✓	✓	✓
15q13.2-q13.3	1 in 358	✓	✓	✓	✓
7q11.23	1 in 415	✓	✓	–	✓
15q11.2-q13	1 in 553	✓	✓	✓	✓
17q21.31	1 in 700	✓	✓	–	✓
16p13.11	1 in 788	✓	✓	✓	✓
17q12	1 in 985	✓	✓	✓	✓
17p11.2	1 in 985	✓	✓	–	✓
8p23.1	1 in 1854	✓	✓	–	✓
5q35	1 in 1970	✓	✓	–	✓
3q29	1 in 2101	✓	✓	✓	–

*Frequency in individuals referred for chromosomal microarray testing. Common indications for testing include neurodevelopmental disorders and multiple congenital anomalies.¹⁰

Table 1: Variable expressivity in selected microdeletion syndromes. *Lancet Neurology* 2013; 12: 406–414

Developmental brain dysfunction: revival and expansion of old concepts based on new genetic evidence

Andres Moreno-De-Luca*, Scott M Myers*, Thomas D Challman, Daniel Moreno-De-Luca, David W Evans, David H Ledbetter

	Frequency in clinical cohorts*	Intellectual disability or developmental delay	Autism spectrum disorder	Schizophrenia	Epilepsy
22q11.2	1 in 167	✓	✓	✓	✓
16p11.2	1 in 241	✓	✓	–	✓
1q21.1	1 in 309	✓	✓	✓	✓
15q13.2-q13.3	1 in 358	✓	✓	✓	✓
7q11.23	1 in 415	✓	✓	–	✓
15q11.2-q13	1 in 553	✓	✓	✓	✓
17q21.31	1 in 700	✓	✓	–	✓
16p13.11	1 in 788	✓	✓	✓	✓
17q12	1 in 985	✓	✓	✓	✓
17p11.2	1 in 985	✓	✓	–	✓
8p23.1	1 in 1854	✓	✓	–	✓
5q35	1 in 1970	✓	✓	–	✓
3q29	1 in 2101	✓	✓	✓	–

*Frequency in individuals referred for chromosomal microarray testing. Common indications for testing include neurodevelopmental disorders and multiple congenital anomalies.¹⁰

Table 1: Variable expressivity in selected microdeletion syndromes. *Lancet Neurology* 2013; 12: 406–414

Genetic relationship between five psychiatric disorders estimated from genome-wide SNPs

Cross-Disorder Group of the Psychiatric Genomics Consortium
Nature Genetics: v. 45, pp 984–994(2013)

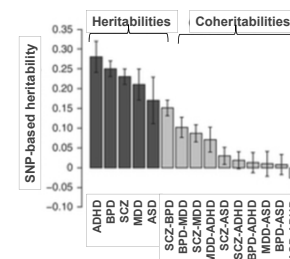


Fig. 1. Evidence for genome-wide pleiotropy between psychiatric d/o.

Revisiting the Relationship Between Autism and Schizophrenia: Toward an Integrated Neurobiology
deLacy N. & King, B
Ann Rev Clin Psychol Vol. 9: 555-587 March 2013

"There appears to be no question that a phenotypic continuum links the schizophrenia and autism spectra; moreover, it incorporates neuropsychiatric deficits associated with all of the classic neurodevelopmental disorders [ID...DD... ASD...ADHD, and SCZ]. Affected persons display some subset of symptoms from this neurodevelopmental superset, in individually varying phenotypes likely molded by pleiotropy, different types of genetic defects, and epigenetic mechanisms.... [I]n "idiopathic" ASD and SCZ, an underlying genomic continuum has also been uncovered."



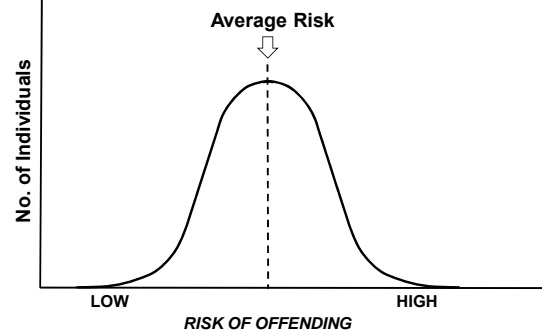
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40:00

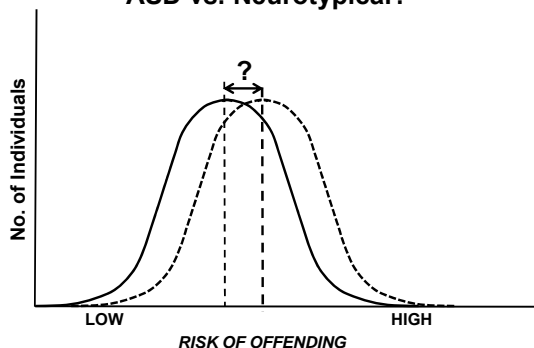
Outline

- 1) Statement of the Problem
- 2) Show me the data
- 3) Does ASD predispose to violent crime?**
- 4) Where do we go from here?

Everyone is at some risk for committing crime



ASD vs. Neurotypical?



Mouridsen, S.E., Current status of research on autism spectrum disorders and offending. *Research in Autism Spectrum Disorders*, 2012. 6(1): p. 79-86

- "There is a complete absence of research which has investigated the prevalence of ASD in general populations of people who had committed crime
- Results published so far provide no basis for addressing the question of whether an association exists between ASD and offending..."

Cohort Studies

Start with **an entire population** and follow all of them: Hard to do:*

ASD?	VIOLENT CRIME?		Risk of violence
	YES	NO	
YES	A	B	$A / (A + B)$
NO	C	D	$C / (C + D)$

Relative Risk (NO DATA)

"ASD-Yes" needs to be big enough to capture some children who commit crime. For example: If crime rate = 1%, we need **at least 100 children with ASD** to be reasonably sure of capturing at least one who commits crime (ignoring sampling error): $A=1$, $B=99$. If we assume a prevalence of ASD of 1 in 48, then $(C+D) = 4,700$ (Total sample size: 4,800)

Mouridsen, S.E., Current status of research on autism spectrum disorders and offending. *Research in Autism Spectrum Disorders*, 2012. 6(1): p. 79-86

- "Some studies have such small, unrepresentative samples that any estimate of prevalence of offending is epidemiologically meaningless
- Even the larger studies are of unrepresentative, clinical populations..."

Mouridsen, S.E., Current status of research on autism spectrum disorders and offending. *Research in Autism Spectrum Disorders*, 2012. 6(1): p. 79-86

"Currently, there is still no body of evidence to suppose that people with ASD are more prone to commit offences than anyone else. However, a small number of serious crimes can be linked to the core features of ASD."

Asperger's syndrome in forensic settings

Murrie DC, Warren JI, and Kristiansson M
Int J Forensic Ment Health 1:59-70, 2002

Case Series of adult males referred for forensic evaluation

Charges:

- Arson: 1 (serial fire-setting x 11 episodes)
- Sexual assault: 4
- Attempted murder: 1

Asperger's syndrome in forensic settings

Murrie DC, Warren JI, and Kristiansson M
Int J Forensic Ment Health 1:59-70, 2002

Common Themes

- **Deficient Empathy:** Each of the four men charged with a sex offense, as well as the man who attempted murder, seemed genuinely unaware of the harm they caused their victims. Likewise, the arsonist appeared untroubled that he destroyed property belonging to strangers, rather than to those against whom he sought revenge
- **Interpersonal Naiveté:** A naïve and often impoverished understanding of human relationships... leaves AS patients vulnerable to mistreatment by others (and) may lead them to seek interpersonal contact in misguided ways

Asperger's syndrome in forensic settings

Murrie DC, Warren JI, and Kristiansson M
Int J Forensic Ment Health 1:59-70, 2002

Common Themes

- **Immediate Confession:** This could reflect a variety of traits ranging from deficient shame, poor judgment, lack of experience, or an impaired appreciation of the social and legal consequences of a confession, to simple forthrightness, rule-abiding behavior or honesty.
- **Sexual Frustration:** social impairments combined with a desire for attachment or sexual experience could lead to illegal behavior...The use of pornography was one socially tolerated ways by which several of the men in our sample pursued an impersonal sexual outlet....

Unlawful Behaviors in Adolescents and Adults with Autism Spectrum Disorders

Woodbury-Smith, Marc

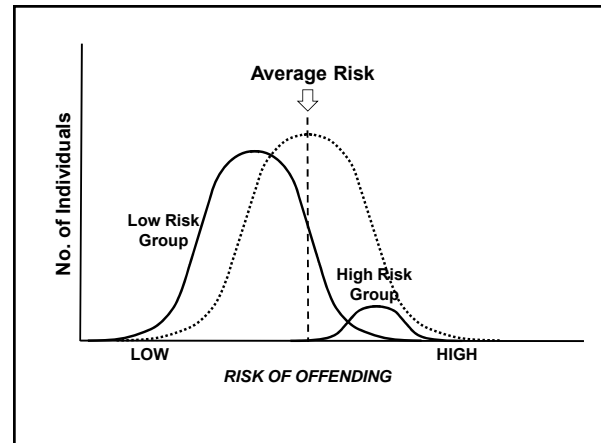
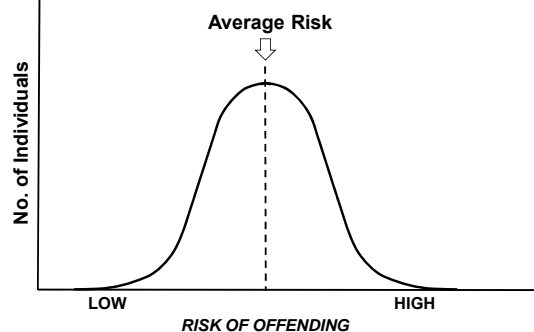
2014, Adolescents and Adults with Autism Spectrum Disorders, 269-281



Woodbury-Smith 2014

- “There are...no epidemiological community studies of unlawful behavior in ASD
- Small sample size and bias in ascertainment...limit the extent to which [the available] data can be... extrapolated to the wider ... ASD population
- Nonetheless, these data do suggest that small numbers of adults with ASD may be predisposed to violent unlawful behavior.”

45:00



Case Control Studies

Start with individuals who have **already committed crime**.

	VIOLENT CRIME?		
ASD?	YES	NO	
YES	A	B	
NO	C	D	
ODDS of having ASD	(A/C)	(b/d)	

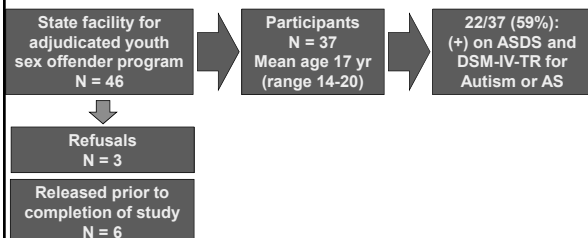
↓
“Cases” “Controls”

Available data:
“Convenience Samples”
• Clinical
• Criminal Justice

(A/C): ODDS that offender has ASD
(b/d): Odds that non-offender has ASD
(A/C) / (b/d) = **ODDS RATIO**: Are the odds of having ASD increased among offenders compared to non-offenders?

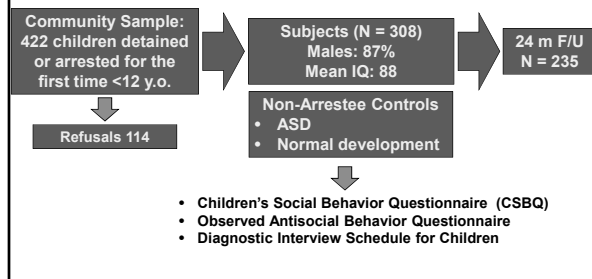
Identifying Individuals with Autism in a State Facility for Adolescents Adjudicated as Sexual Offenders: A Pilot Study

Sutton et. Al. Focus on Autism and Other Developmental Disabilities v 28 (3) 9/2013



**Autistic symptoms in childhood arrestees:
longitudinal association with delinquent behavior**

Journal of Child Psychology and Psychiatry, 2012, 53(2): p. 160-167

**Autistic symptoms in childhood arrestees:
longitudinal association with delinquent behavior**

Journal of Child Psychology and Psychiatry, 2012, 53(2): p. 160-167

• Results:**– Atypicality scores (CBSQ):**

- ASD controls > Arrestees > Normal controls, $p < 0.01$

– For Arrestees:

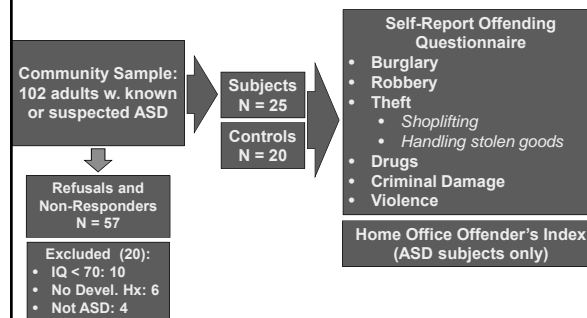
- CBSQ score predicted delinquent behavior at 24 month follow-up ($p < 0.001$), even after adjusting for externalizing behavior

**Autistic symptoms in childhood arrestees:
longitudinal association with delinquent behavior**

Journal of Child Psychology and Psychiatry, 2012, 53(2): p. 160-167

Conclusions:

- “Childhood arrestees...have more autistic symptoms than children from the general population and less than autistic individuals
- Among the arrestees, autistic symptoms were uniquely positively associated with future delinquent behavior
- Although mediated by co-occurring externalizing disorders, autistic symptoms predicted delinquent behavior over and above externalizing disorders”

**High functioning autistic spectrum disorders, offending and
other law-breaking: findings from a community sample**Woodbury-Smith et al; The Journal of Forensic Psychiatry & Psychology
Volume 17, Issue 1, 108-120, 2006**High functioning autistic spectrum disorders, offending and
other law-breaking: findings from a community sample**Woodbury-Smith et al; The Journal of Forensic Psychiatry & Psychology
Volume 17, Issue 1, 108-120, 2006**“The rate of law-breaking...was significantly lower
[in the ASD group]....**

However.... participants with a diagnosis of an ASD were significantly more likely to report activities which could be categorised as ‘criminal damage’. Moreover, they tended to have a greater history of violent behaviours.”

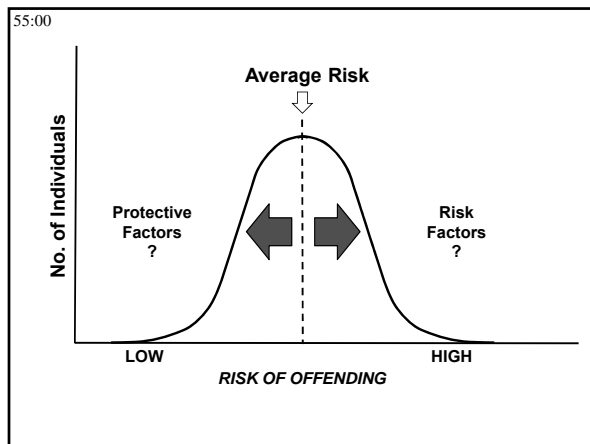
**High functioning autistic spectrum disorders, offending and
other law-breaking: findings from a community sample**Woodbury-Smith et al; The Journal of Forensic Psychiatry & Psychology
Volume 17, Issue 1, 108-120, 2006**Table II. Results of Self-Reported Offending Questionnaire**

Law-breaking (as category of offence)	ASD group: proportion (N) responding 'yes'	Comparison group: proportion (N) responding 'yes'	χ^2
Burglary	4% (1)	0% (0)	0.9
Robbery	0% (0)	0% (0)	0
Theft: handling stolen goods	9% (2)	10% (2)	0.1
Theft: shoplifting	11% (3)	20% (4)	0.7
Theft: other (see text)	0% (0)	0% (0)	0
Drug offences	11% (3)	55% (11)	10.6**
Criminal damage	19% (5)	0% (0)	4.1*
Violence (all offences)	30% (8)	25% (5)	0.1
History of conviction ²	7% (2)	NA	

Notes: * $p < 0.05$; ** $p < 0.01$; ²History of convictions according to the Home Office Offenders' Index (see text). NA = No figures available.

* Plus: Arson: 1; Sexual assault of a minor: 1





Woodbury-Smith 2014

“A small yet significant number of primarily higher functioning people with ASD will engage in unlawful behavior. The etiology of their behavior may be understood as arising from a combination of *generic forensic risk factors* along with *factors more specific to the autism phenotype*. To most appropriately inform rehabilitation,* a comprehensive assessment will consider all of these factors.”

- * and primary prevention! jc

Generic Forensic Risk Factors....



The risk factors for criminal behaviour in high-functioning autism spectrum disorders (HFASDs): A comparison of childhood adversities between individuals with HFASDs who exhibit criminal behaviour and those with HFASD and no criminal histories

Chihiro Kawakami^{a,b}, Masafumi Ohnishi^{c,d,e}, Toshiro Sugiyama^e, Fumio Someki^e, Kazuhiko Nakamura^e, Masatsugu Tsujii^f

Kawakami, 2012

Subjects:

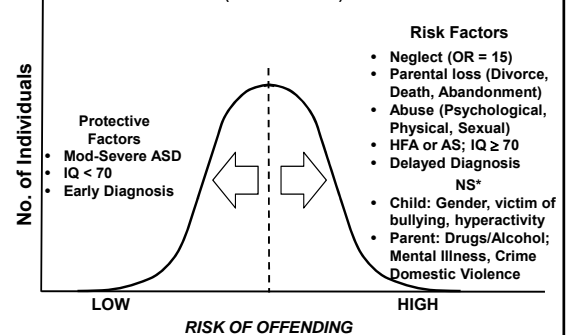
- 175 children & young adults with HFASD (M 147 / F 28)
 - ASD “Criminals”
 - N=36 (M30 / F6)
 - Mean age 16.8 y (range 7–30 y)
 - Theft, voyeurism, juvenile prostitution, violence, running away, arson, blackmail, internet harassment
 - ASD Controls
 - N=139 (M117 / F22)
 - mean age 14.9 y (range 6–28)

Kawakami, 2012

“Childhood adversities” (CAs):

- **Maladaptive family functioning**
 - Parental mental illness, substance use, criminality, family violence, physical or sexual abuse, neglect, loss of parent, divorce
- **Plus:**
 - Gender
 - Victim of bullying
 - HFA or AS vs. classical autism
 - Age at Dx of ASD

Risk factors for criminal behavior in HFASD (Kawakami 2012)



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* Sample too small?
("underpowered")

60:00

Factors specific to autism phenotype....

Lorna Wing
7 October 1928 – 6 June 2014



“Asperger Syndrome” - 1981

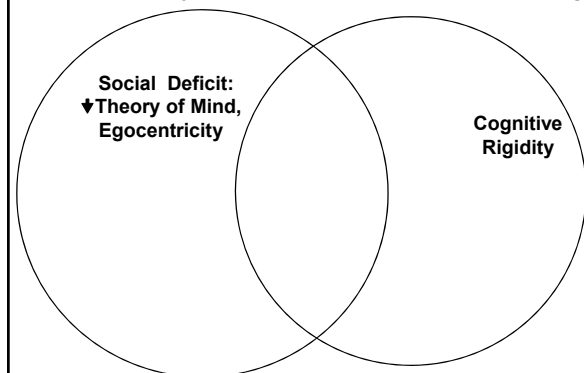
Factors specific to autism phenotype....

Wing 1997

(Wing, L. Asperger's syndrome: Management requires diagnosis.
Journal of Forensic Psychiatry, 8(2), 253-257)

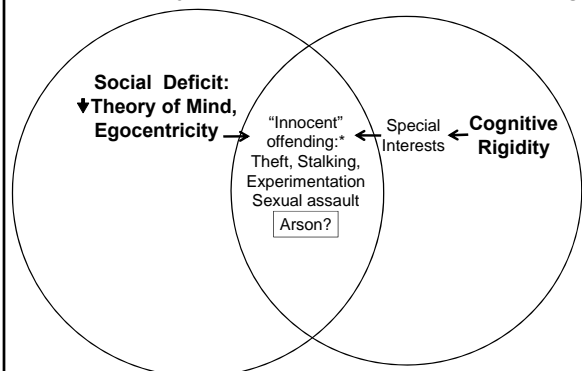
- Assumption that own needs supersede all other considerations
- Lack of awareness of wrongdoing
- Intellectual interest (Asperger: "Autistic acts of malice")
- Pursuit of "special" interests (objects, people)
- Hostility towards family
- Hyperarousal
- Vulnerability
- Cry for help
- Revenge

Proposed Pathways from Core Features of ASD to Offending



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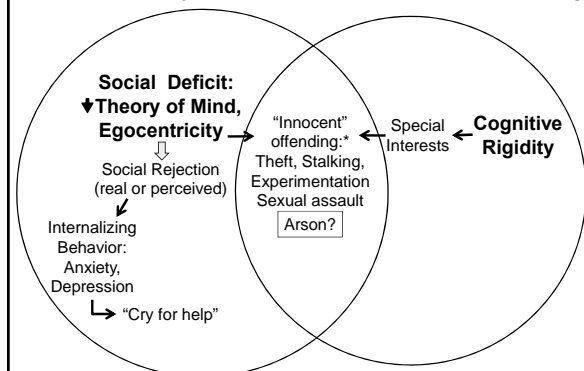
Proposed Pathways from Core Features of ASD to Offending



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*No awareness of, or intent to do harm

Proposed Pathways from Core Features of ASD to Offending



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*No awareness of, or intent to do harm

THE LANCET Psychiatry

Suicidal ideation and suicide plans or attempts in adults with Asperger's syndrome attending a specialist diagnostic clinic: a clinical cohort study 25 June 2014

Dr Sarah Cassidy PhD ¹, Paul Bradley MRCPsych ², Janine Robinson DClinPsy ³, Carrie Allison PhD ⁴, Meghan McHugh BSc ⁵, Prof Simon Baron-Cohen PhD ¹

Subjects

- 374 adults newly diagnosed with Asperger Syndrome
 - Men: 256
 - Women: 118
- Mean age at Dx: 31.5 yr (range 17-67 yr)
- 87 (23%) in full-time education at the time of study

Methods:

- Self-Report Questionnaire, lifetime experience of:
 - Suicidal thoughts
 - Suicidal plans or attempts
 - Depression

[http://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366\(14\)70248-2/fulltext](http://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366(14)70248-2/fulltext)

THE LANCET Psychiatry

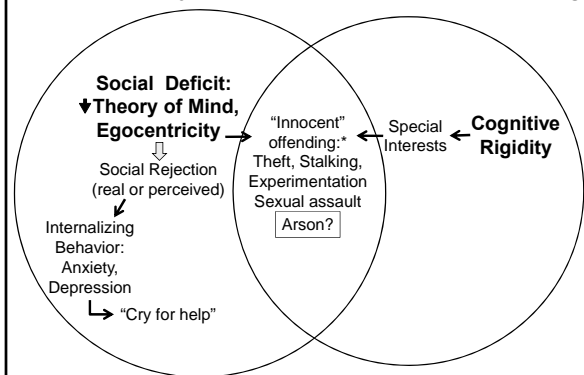
Suicidal ideation and suicide plans or attempts in adults with Asperger's syndrome attending a specialist diagnostic clinic: a clinical cohort study 25 June 2014

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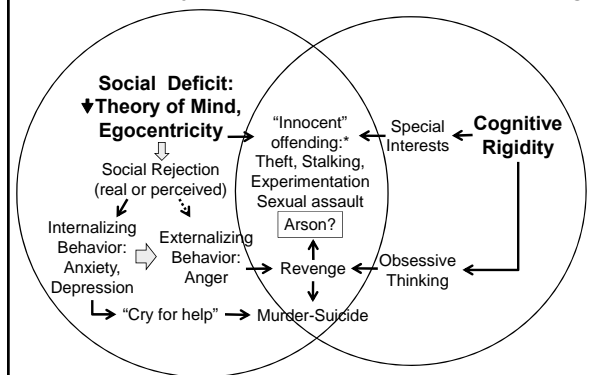
Results (98% response rate):

- Suicidal ideation: 66%
- Plans or attempts at suicide: 35%
- Depression: 31%
- Adults with AS were ~ 10x more likely to report lifetime experience of suicidal ideation than individuals from the general UK population (OR 9.6, $p < 0.0001$), people with 1, 2, or more medical illnesses ($p < 0.0001$), or people with psychotic illness ($p = 0.019$)

[http://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366\(14\)70248-2/fulltext](http://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366(14)70248-2/fulltext)

Proposed Pathways from Core Features of ASD to Offending

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Proposed Pathways from Core Features of ASD to Offending

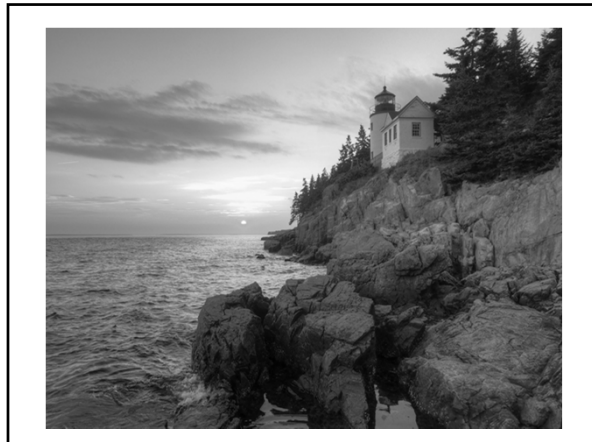
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Crime in ASD: The Bottom Line (as of 2014)

- Overall rate of offending in ASD: *Unknown*
 - Likely composed of low-risk and high-risk subgroups
 - Intrinsic risk factors
 - HFA / AS, IQ ≥ 70
 - Hyperarousal / Hyperactivity / Mental Illness?
 - Male gender?
 - Extrinsic risk factors
 - Delayed Dx
 - Neglect, Divorce, Abuse
 - Parental mental illness, drugs, crime?

Crime in ASD: The Bottom Line (as of 2014)

- What's Needed:
 - Large-scale community-based studies
 - Relative risk of offending (ASD vs. Non-ASD)
 - Case-control studies in criminal populations
 - Odds of having ASD (Offenders : Non-offenders)
 - Identification of intrinsic and extrinsic risk factors
 - Implementation of targeted preventive strategies
 - Early Diagnosis
 - Family Mental Health
 - Other?



65:00

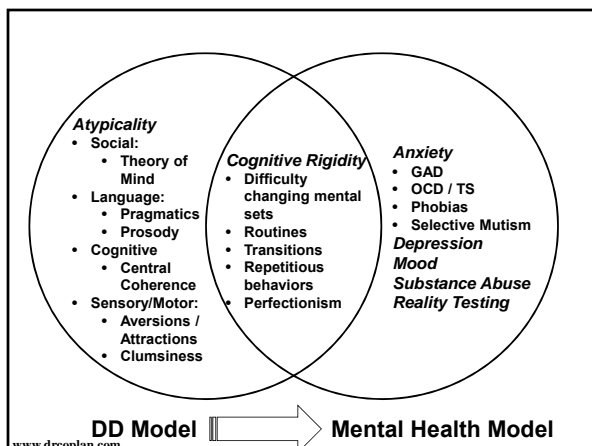
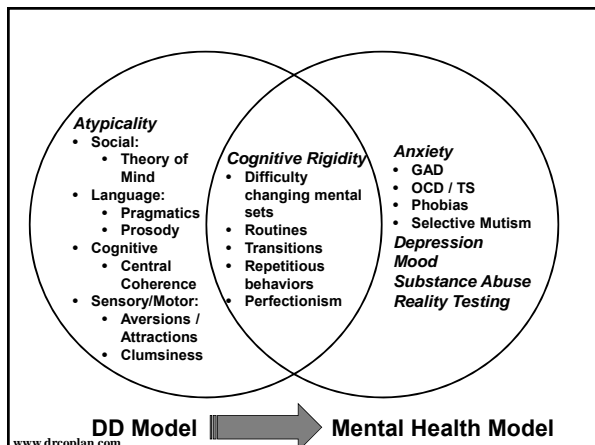
Outline

- 1) Statement of the Problem
- 2) Show me the data
- 3) Does ASD predispose to violent crime?
- 4) Where do we go from here?
 - 1) Individual & Family care
 - 2) System change

Individual Care

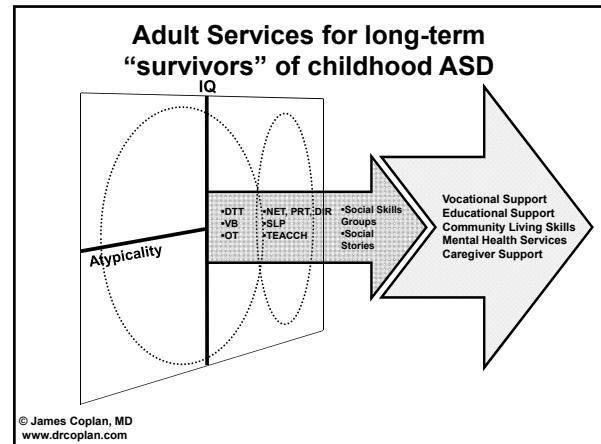
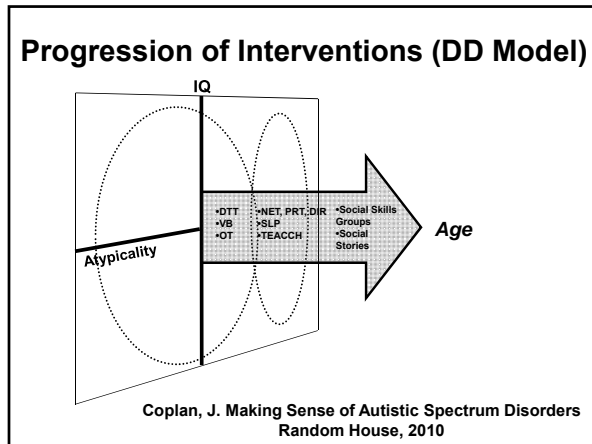
- Not “Co-Morbidity,” but Continuum and Metamorphosis
- “Losing the diagnosis” does not = “cure”
- Shift from Developmental Disability model to Mental Health model
- Need for adult services

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School-Based MH Services

- Proactively monitor student mental health
 - Don’t wait for academic failure or disruptive behavior
 - Positive Behavior Support for Internalizing Behavior
 - Embed MH services within schools?



Family Care

- Recognize that ascertaining a child with ASD means strong possibility that one or both parents have Mental Health issues and/or family dysfunction that need to be addressed
 - *This may be the single biggest element of the problem available for intervention*
 - *Addressing this issue will take a lot of people out of their comfort zone*

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Systems Change

- ASD community needs to make common cause with Mental Health community in advocating for child and adult MH services
 - Distinction between ASD and “psychiatric disorder” not scientifically tenable
 - Not financially viable
 - Not in the best interests of persons with ASD
- Barriers
 - Hard to shift mental sets
 - Fear, Stigma
 - Institutional inertia / turf



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Making Sense of Autistic Spectrum Disorders

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Thank you