When is Behavior not “Behavioral”?
James Coplan, MD

August 3, 2015

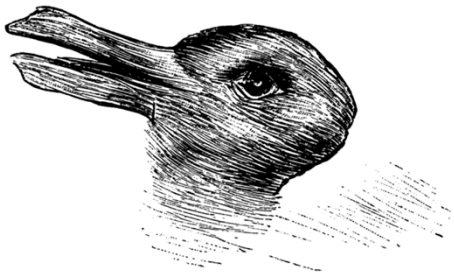
Disclosures

- **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**

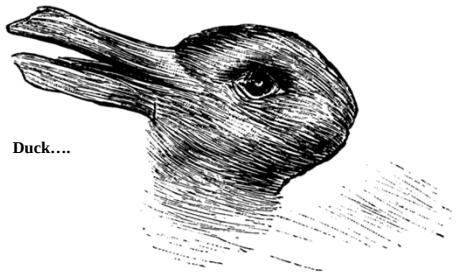
www.drcoplan.com

What do you see?



https://en.wikipedia.org/wiki/Rabbit%E2%80%93duck_illusion

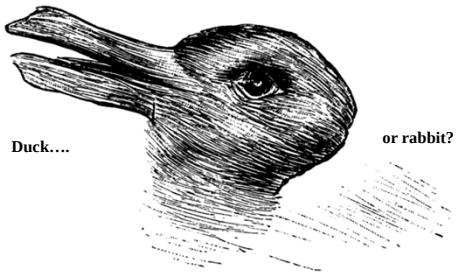
What do you see?



Duck….

https://en.wikipedia.org/wiki/Rabbit%E2%80%93duck_illusion

What do you see?



Duck…. **or rabbit?**

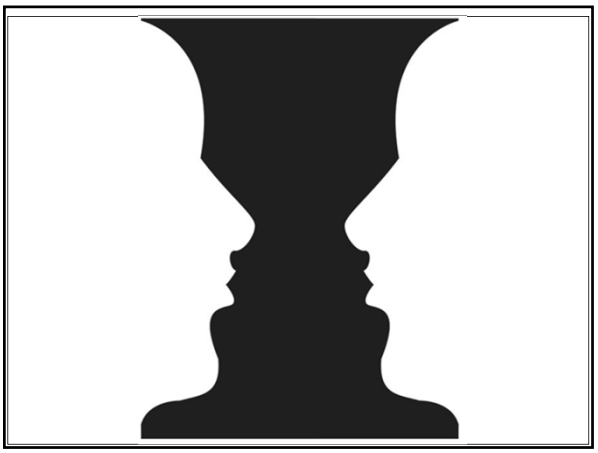
https://en.wikipedia.org/wiki/Rabbit%E2%80%93duck_illusion

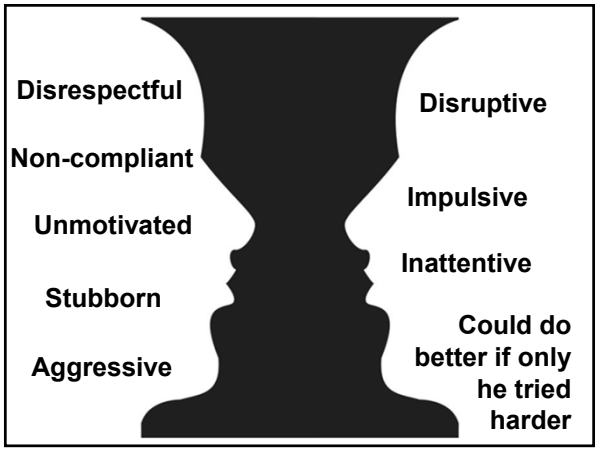
Basic premises

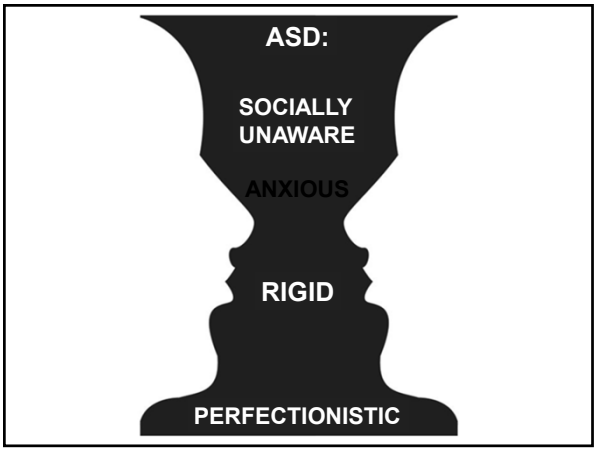
- **Many things can be seen in more than one way**

Basic premises

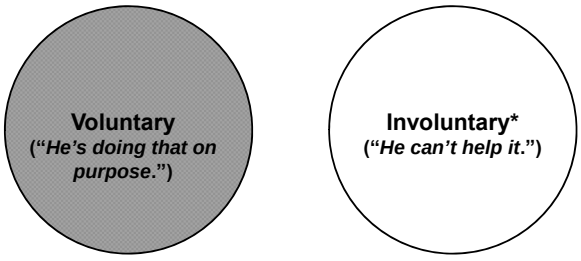
- How we “see” a behavior conditions how we respond







We are prone to dichotomizing….



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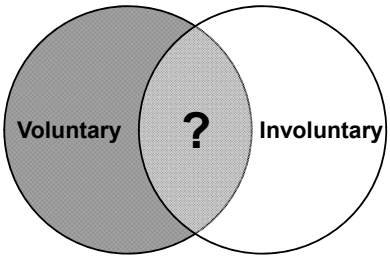
But life is more complex than that



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Basic premises

- "Behavior" is what organisms do to stay alive and pass on their DNA
  - Forage, eat, sleep, mate, prey / avoid danger, etc.

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- "Normal behaviors" (including "problem behaviors") always *serve a function*
  - Access, Attention, Escape, etc.

Basic premises

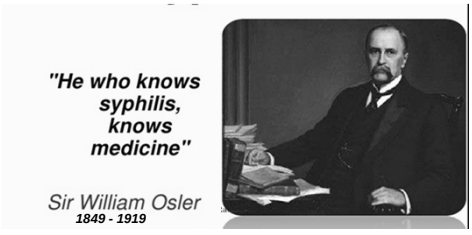
- "Behavior" is what organisms do to stay alive and pass on their DNA
  - Forage, eat, sleep, mate, prey / avoid danger, etc.
- "Normal behaviors" (including "problem behaviors") always *serve a function*
  - Access, Attention, Escape, etc.
- "Abnormal behaviors" serve no function
  - Biological systems are "broken" and energy is not being spent / conserved appropriately; comes out as "purposeless behavior" (ex: tics, compulsions, seizures)
  - "Non-behavioral behaviors" (Not "on purpose")

Basic premises

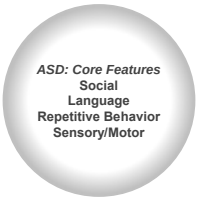
- There are predictable ways in which any given organ in the body can fail
  - Heart → Chest pain, heart attack, heart failure
  - Lung → Wheeze, cough, shortness of breath
  - Pancreas → Diabetes
- Brain
  - Movement → Involuntary movement, paralysis, etc.
  - Sensation → loss of sensation / hyperesthesia, etc.
  - Cognition → IQ, Attention, Memory, Reality Testing, etc.
  - Mood → Lability (mania / depression)
  - And more…

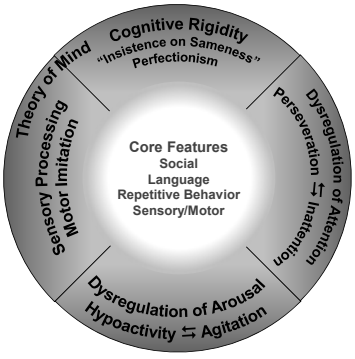
Outline

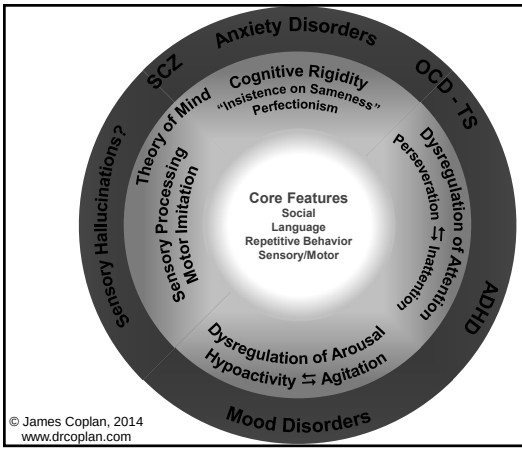
- ➢ ASD: A multi-faceted, biologically based derangement of behavior
- Other "non-behavioral" behaviors:
  - Tics / Tourette Syndrome
  - Seizures

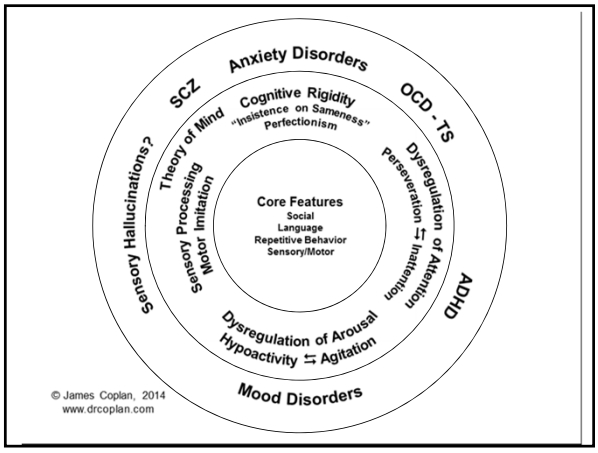


He (or she) who knows autism spectrum disorder knows biologically driven behavior.









Psychiatric Symptom Impairment in Children with Autism Spectrum Disorders

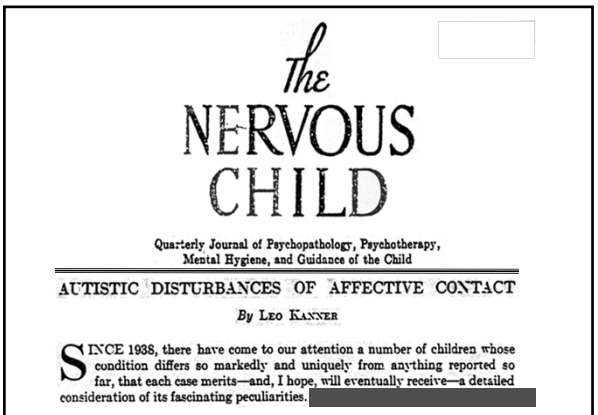
Kaat, A.J., et al. Journal of Abnormal Child Psychology, 2013

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”**

Outline

- **ASD: A multi-faceted, biologically based derangement of behavior**
- **Other "non-behavioral" behaviors:**
  - **Tics / Tourette Syndrome**
  - **Seizures**



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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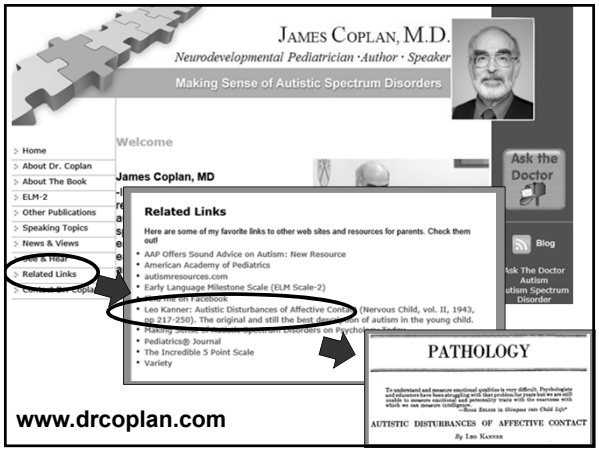

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Kanner, 1943

- **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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Idiosyncratic Language

- **Echolalia**
- **Delayed Echolalia**
- **Pronoun Reversal**
- **Odd inflection**

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Repetitious Behaviors

- Rigid Routines
- Stereotypies
- Lining up / spinning objects

www.drcoplan.com

Unusual sensory responses

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

www.drcoplan.com

Kanner, 1938 → 1943

- Gradual improvement in early childhood
  - ↑Social skills
  - ↑Language
  - ↓Cognitive rigidity
  - ↓Sensory Aversions

www.drcoplan.com

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": the ability to see the big picture

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

www.drcoplan.com

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

www.drcoplan.com

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 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."

Kanner, 1943

"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…."

Kanner, 1943

"The child's aloneness from the beginning of life makes it difficult to attribute the whole picture exclusively to the type of early parental relations with our patient. 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 constitutional components of emotional reactivity. For here we seem to have pure-culture examples of *inborn autistic disturbances of affective contact*." [italics in the original]

Follow-up Study of Eleven Autistic Children Originally Reported in 1943

LEO KANNER[1]
John Hopkins University School of Medicine

- **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**

Kanner's contributions

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

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Archiv für Psychiatrie und Nervenkrankheiten
3. Juni 1944, Volume 117, Issue 1, pp 76-136

Die „Autistischen Psychopathen" im Kindesalter

Doz. Dr. Hans Asperger

- lack of empathy
- little ability to form friendships
- one-sided conversations
- special interests
- "little professors"
- clumsy movements

http://autismus-kultur.de/wp-content/uploads/2006/06/asperger-syndrom.jpg
http://en.wikipedia.org/wiki/Hans_Asperger
http://www.icn.ucl.ac.uk/dev_group/ufrith/documents/Ch%201,%20Asperger%20and%20his%20syndrome%20copy.pdf

Lorna Wing

7 October 1928 – 6 June 2014

"Asperger Syndrome" - 1981

Lorna Wing: "Asperger syndrome: a clinical account" (1981)

http://www.mugsy.org/wing2.htm

- **Articulate yet strangely ineloquent**
- **Active but odd**
- **Specialists in unusual fields**
- **Speech is pedantic and often consisting of lengthy disquisitions on favourite subjects**

Uta Frith: "Asperger and his syndrome"

http://www.icn.ucl.ac.uk/dev_group/ufrith/documents/Ch%201,%20Asperger%20and%20his%20syndrome%20copy.pdf

"….clever-sounding language, invented words and spoke more like grown-ups than children… There was something not quite right in the way they used language…

….socially inept but often socially interested…."

http://www.icn.ucl.ac.uk/dev_group/ufrith/documents/Ch%201,%20Asperger%20and%20his%20syndrome%20copy.pdf

Kanner & Asperger

- **Similarities**
  - Impaired socialization
  - Impaired pragmatics
  - Impaired prosody & nonverbal cues
  - Repetitive behavior and mentation
  - Clumsiness, sensory issues
  - Often a positive Fam Hx for odd or obsessive behavior
- **Differences**
  - Hypoverbal (Kanner) vs. Hyperverbal & pedantic (AS)
  - “Aloof & withdrawn” (Kanner) vs. “Active but odd” (AS)

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. Tsai[1]

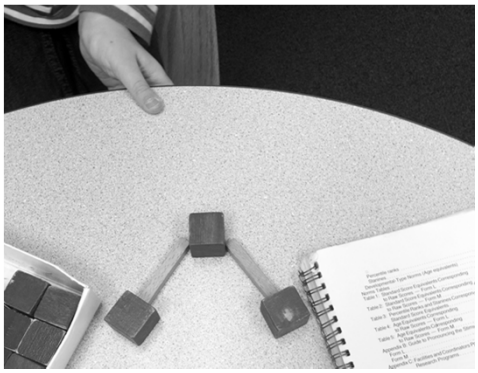
128 publications were identified through an extensive search of major electronic databases and journals. Based on more than 90 clinical variables, 94 publications concluded that there were statistically significant or near significant differences between Asperger’s Disorder (AspD) and Autistic Disorder / 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.

“My child doesn’t understand the unwritten rules of the playground.”

Parent of child with AS

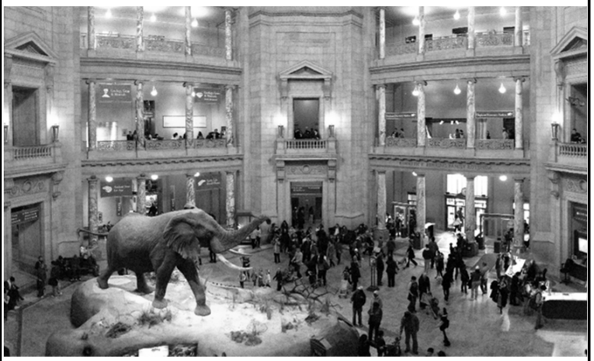
Jim Croce

You don't tug on superman's cape
You don't spit into the wind
You don't pull the mask off that old Lone Ranger
And you don't mess around with Jim



“I made water”

MRN 13-0829



National Museum of Natural History

Natural History: "The temporal course a disease from onset to resolution"
Center for Disease Control & Prevention

ASD has a *Natural History*

www.drcoplan.com

1 - Social Interaction

"Our child is *among* us, but not *with* us."
Parent of a 4 year old with ASD

www.drcoplan.com

Clinical Domain ⇓	Decreasing Atypicality / Increasing Age ⇒		
	Severe / Youngest	Moderate / Older	Mild / Older
1. Social Interaction	•No eye contact •No physical affection •Cannot be engaged in imitative tasks	•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	•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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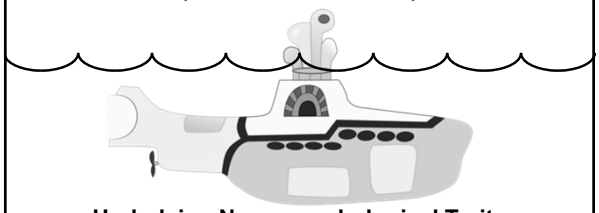
Visible features
(DSM, IDEA, ICD, etc.)



Underlying Neuropsychological Traits
- ↓ Theory of Mind

Theory of Mind (ToM)

- 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 (ToM)

How does the boy feel?
Why?

www.drcoplan.com

Theory of Mind (ToM)

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

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Theory of Mind (ToM)

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?

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Theory of Mind (ToM)

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!

www.drcoplan.com

Theory of Mind (ToM)

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: I don’t know. We haven’t come to that part of the story yet.

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2 - Language

“My child talks, but he doesn’t communicate.”
Mother of a 3 year old with autism

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Clinical Domain ⇓	Decreasing Atypicality / Increasing Age ⇒		
	Severe / Youngest	Moderate / Older	Mild / Older
2. Language •Pragmatics •Prosody	•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	•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)	•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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www.drcoplan.com

Language Deficits in ASD: Literal Thinking

- **5 ½ year old boy with ASD and Superior IQ (Verbal Comprehension Index: 146)**

Q: “Which is bigger, 9 or 6?”

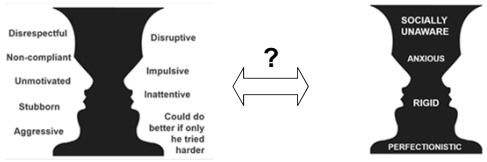
A: “They are both the same size, but 9 has a loop at the top, and 6 has a loop at the bottom.”

MRN 10-0681

www.drcoplan.com

Literal

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



3 - Repetitious Behavior with Insistence on Sameness

"Our son experiences extreme anxiety when what he anticipates isn't what happens…When we know a change is coming we can prepare him, but those we can't anticipate are still very upsetting for *him…The switch flips in his mind, and it's out of his control*."

6 y.o. boy with ASD, anxiety, and normal nonverbal IQ

MRN 12-0782

Cognitive Rigidity →Anxiety → Disruptive Behavior

"If he's not doing what he wants at the time he wants, then all bets are off"

Father of 9 y.o. boy with Fragile-X, ASD, anxiety, & disruptive behavior

JF
MRN 06-0344

Cognitive Rigidity:

Changes in Routine / Unmet Expectations

www.drcoplan.com *Rainman*, 1988

Clinical Domain ⇓	Decreasing Atypicality / Increasing Age ⇒ Severe / Youngest	Moderate / Older	Mild / Older
3. Repetitious Behaviors *Cognitive*	•Extreme distress if *routines* are changed or when required to *transition* from one task to another •Fascination with odd objects (tags, wheels, fans, etc.)	• 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)	• 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
Motoric	•Frequent, intense stereotypical movements (flapping, spinning, toe-walking, finger twiddling)	• Motor stereotypies occasional; may re-emerge when excited	• Motor stereotypies rare or absent

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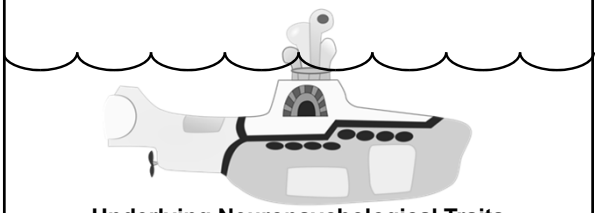
Visible features
(DSM, IDEA, ICD, etc.)



Underlying Neuropsychological Traits

- ↓ Theory of Mind
- ↓ Central Coherence

Persons with ASD:
Great at seeing details…

Persons with ASD:
Great at seeing details…

"?"

Persons with ASD:
Great at seeing details…

"Where are 8, 9, and 10?"

Not so good at seeing the big picture

What’s happening in this picture?

“The man is drowning.”

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

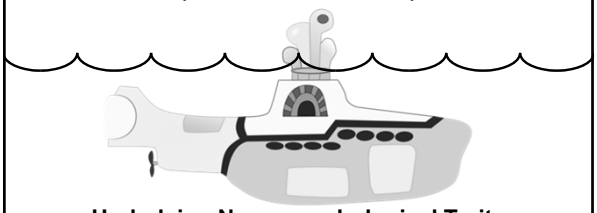
A: ***The man took off his clothes and jumped in the water.***
Q: Why did he do that?
A: ***Because the car was about to crash?***

Q: What’s happening in this picture?

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

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

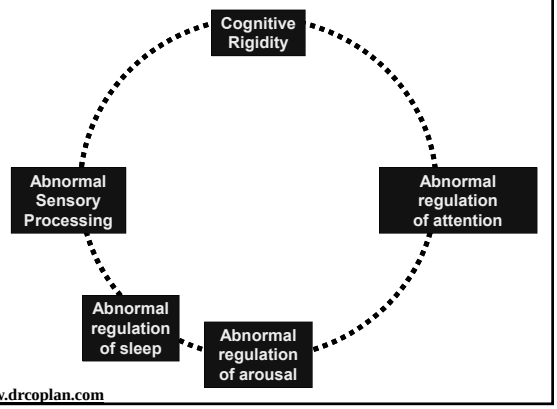
Visible features
(DSM, IDEA, ICD, etc.)



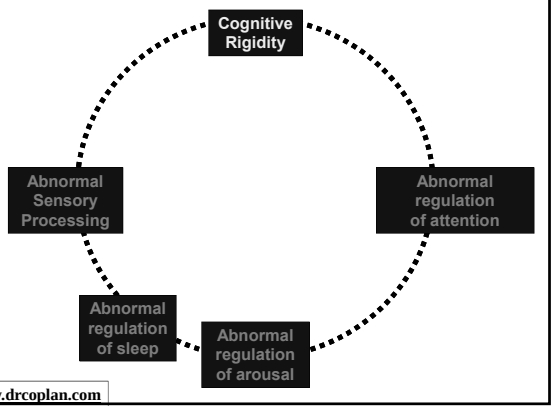
Underlying Neuropsychological Traits

- ↓ Theory of Mind
- ↓ Central Coherence
- ↓ Cognitive Rigidity

Neuropsychological Traits in persons with ASD



www.drcoplan.com

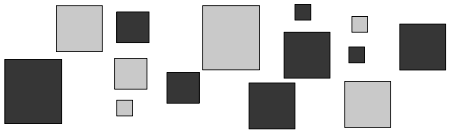


www.drcoplan.com

Cognitive Rigidity (Difficulty shifting mental sets)

Task:

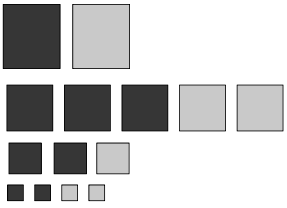
1. **Group by size, then by color**



Cognitive Rigidity (Difficulty shifting mental sets)

Task:

1. **Group by size, then by color**



Cognitive Rigidity (Difficulty shifting mental sets)

Task:

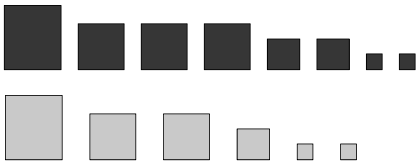
2. Now group by color, then by size!

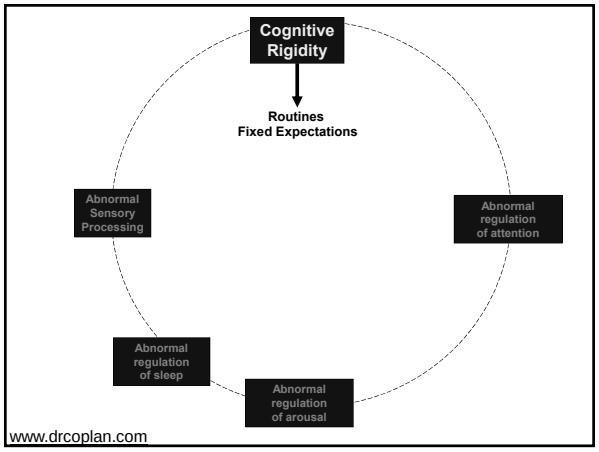
?

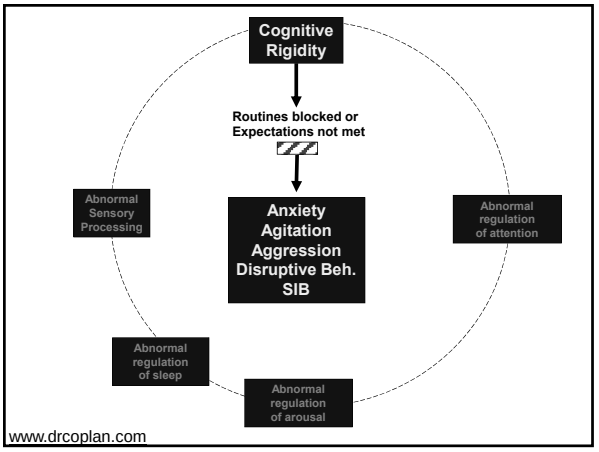
Cognitive Rigidity (Difficulty shifting mental sets)

Task:

2. Now group by color, then by size!







Cognitive Rigidity: Task-Related behaviors

- **Need to get it *exactly right***
  - ***Agitation if cannot***
  - ***Pre-emptive fear of not being able to achieve perfection → "Task avoidance"***
- **Need for *task completion* before moving on**

Anxiety & Perfectionism

10 y.o. boy with ASD.
Bender-Gestalt: SS 116
Hyperlexia
Verbal Comprehension: Moderate delay

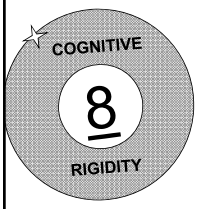
Teacher report: "E. is a very sweet boy… Tries hard to please… *Constantly seeks reassurance..* He follows directions, but *you have to let him complete what he is doing. He cannot leave things unfinished!*"

EK. MRN 06-0299

- Without a doubt
- Reply hazy, try again
- Signs point to NO
- Better not tell you now…

Cognitive Rigidity

(Difficulty shifting mental sets)



"Externalizing Behaviors"

- ***Insistently*** **repetitious behavior**
- **Difficulty with unmet expectations**
- **Perfectionism**
- **Compulsions**
- **(Aggression, SIB)**

- **Perfectionism**
- **Obsessions**
- **(Anxiety / Depression)**

"Internalizing Behaviors"

Internalizing Behavior

12 y.o. girl with HFA & Anxiety

Parents: "We feel like she has *an internal war going on*.. She's internalizing everything, and suffering alone"

JG. MRN 07-0477
10 y.o. girl with HFA & Anxiety

Unaddressed internalizing behavior often comes out as externalizing behavior

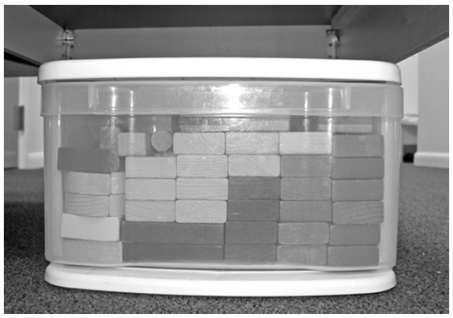
Internalizing Behavior
- Anxiety
- Depression
- Perseveration
- Perfectionism
- etc

Externalizing Behavior
- Tantrums
- Aggression
- SIB
- etc

www.drcoplan.com

Perfectionism

Perfectionism



Perfectionism

Tony

7 y.o. boy with HFA, Anxiety, and Perfectionism

Teacher's Report: "Tony tries to exclude himself from any 'competition' types of games or activities, as he really dislikes being 'wrong,' 'out,' or to lose. On the times he has had tantrums after being 'out' or when his team has lost, the other children have been very empathetic towards him and he has not lashed out at them. *His frustration appears to be with himself.*"

TQ. 8 yr old boy with AS
MRN: 14-0916

Tony

7 y.o. boy with HFA, Anxiety, and Perfectionism

Office Visit

Examiner: "Sometimes you just need to do your best, and then move on," we stated in an encouraging tone of voice, then asked him "What do you think of that?"

Pt: "Not much," he replied bluntly.

TQ
MRN 14-0916

Sean

MRN 14-0933

- **10 y.o. boy w. prior Dx of ADHD**
- **History:**
  - **Inconsistent eye contact**
  - **"No social filters"**
  - **"Precocious interests"**
  - **Sensory aversions**
  - **Behavioral deterioration on stimulants**

Sean

MRN 14-0933

- **Exam**
  - **Friendly & cooperative**
  - **"My brain makes me worry about stupid stuff, like 'Did I touch something?'"**
  - **Pedantic tone: Referring to his sister Alli: "I believe her real name is *Allison*"**
  - **Private monologues: "Pluto is the equality of Hades in Greek mythology…. Ares is the Greek god of war…. Cupid is the son of Aphrodite and Zeus…."**

Sean

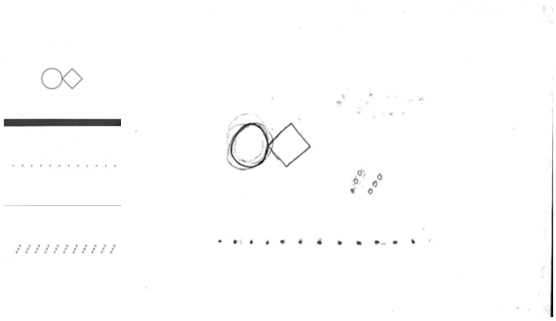
MRN 14-0933

Exam: Perfectionism

S. earnestly attempted the Bender-Gestalt figures, but became overwhelmed, repeatedly erasing and re-erasing. He went so far as to measure the distance between the dots on one of the stimulus cards with his finger, trying to replicate the spacing exactly. *"If I can't get something right I get angry with myself… Sometimes I take it out on other people,"* he confided. After he had labored mightily over the first few cards, he sighed *"This is torture…"* After he had manfully struggled over a single card for several minutes, we opted to move on to another task.

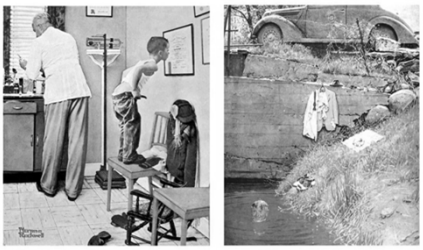
“This is torture”

MRN 14-0933



Sean

MRN 14-0933



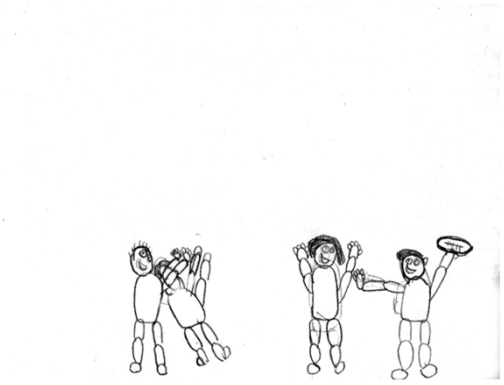
Sean readily concluded that the boy on the left was “at the doctor’s and about to get a shot.” He interpreted the picture on the right as “A boy was walking home from school and took off his clothes and went for a swim.” Even after we pointed out the car, Sean never figured out that the picture shows a man who had been driving the car who stopped to take a swim (not a boy walking home from school).

Sean

MRN 14-0933

The final task was a family drawing (“Draw a picture of your family, with everybody in the picture doing something”). The open-ended nature of the task threw him, and for a few moments he was unable to get started. Once he did get started, he worked very slowly, and made repeated erasures.

Sean
MRN 14-0933



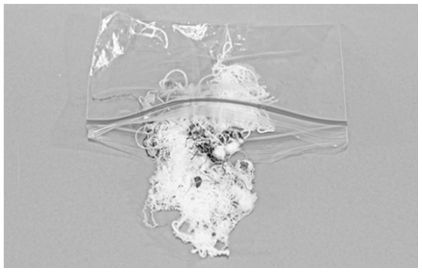
Sean

MRN 14-0933

Revised Dx

- **Asperger Syndrome**
- **Anxiety Disorder**
  - ***OCD***

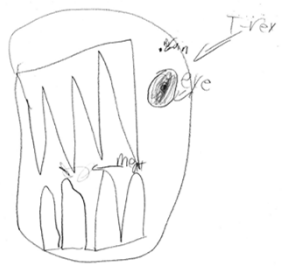
Compulsions



JF: 15 y.o. boy Asperger Syndrome

MRN: 05-0096

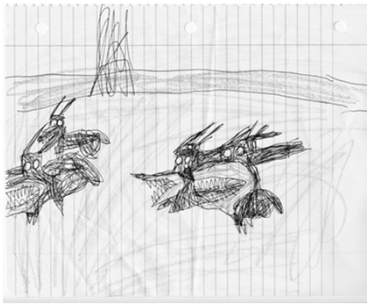
Anxiety



RM: 9 y.o. boy: ASD, normal IQ, anxiety d/o, disruptive behavior.
Mother: Anxiety D/O; PGM hoarding & OCD

www.drcoplan.com MRN: 10-0642

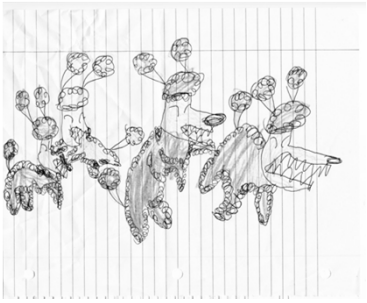
Anxiety



RD. 7 y.o. F, nl IQ, PDD-NOS & Anxiety. Father: GAD

www.drcoplan.com MRN: 07-0427

Anxiety



RD. 7 y.o. F, nl IQ, PDD-NOS & Anxiety. Father: GAD

www.drcoplan.com MRN: 07-0427

Anxiety

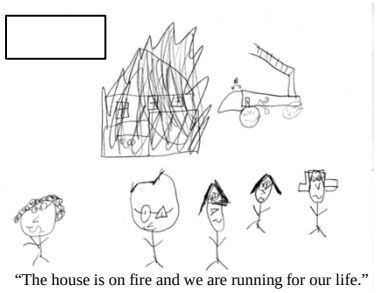
RD. 7 y.o. F, nl IQ, PDD-NOS and Anxiety. Fa: GAD
R.D. MRN 07-0427

Anxiety

RD. 7 y.o. F, nl IQ, PDD-NOS & Anxiety. Father: GAD

www.drcoplan.com MRN: 07-0427

Anxiety



“The house is on fire and we are running for our life.”

A.W.: 9 year old boy with PDD-NOS and normal IQ (MRN 11-07710

Anxiety

“Standing in the Atlantic Ocean. The ocean has a very high surface, up to their mouth, so they can’t breathe.” Six year old boy with ASD and Anxiety. BK;MRN 09-0605

Anxiety, Perfectionism, and Disruptive Behavior

BL: 10 y.o. boy w. ASD, normal NVIQ, and disruptive behavior at school

During… testing… B was cooperative and motivated to do well for the majority of the time… He was quiet, mild-mannered, and polite when offered encouragement and praise…and even commented that he liked some of the tasks…

He became increasingly frustrated as the testing progressed… He became quite distressed when asked questions about his own emotional life and behavior. This resulted in a cycle where he repetitively vocalized his need to compete the task and then became angry and frustrated by the questions that he was being asked….

Private psychologist’s note B L

Anxiety, Perfectionism, and Disruptive Behavior

BL: 10 y.o. boy w. ASD, normal NVIQ, and disruptive behavior at school

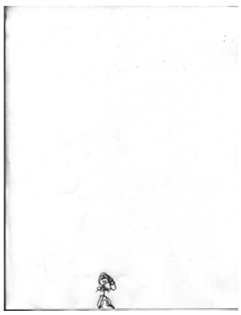
Given his otherwise kind and mild-mannered nature, it does not appear to this examiner that any of B’s behavior is primarily oppositional or simply a tool to gain attention or escape a difficult task. When faced with tasks that he perceives are difficult or if he fears that he will make a mistake, B’s internal response is so extreme that he appears to lose all ability to regulate the external expression of this emotion”

Private psychologist’s note B L

Depression

www.drcoplan.com CZ

Depression



www.drcoplan.com KO; 10 yr old female, PDD-NOS, normal IQ

Depression

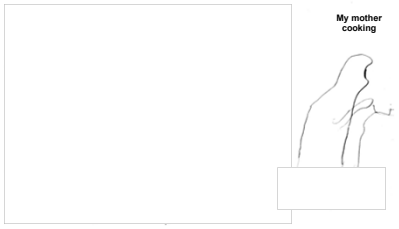
“Draw a picture of your family, with everybody in the picture doing something.”

IB; 12 yr old male, Mild ASD, Superior IQ

I. B. MRN 06-0256

Depression

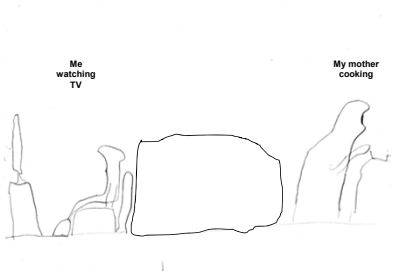
“Draw a picture of your family, with everybody in the picture doing something.”



IB; 12 yr old male, Mild ASD, Superior IQ

I. B. MRN 06-0256

Depression

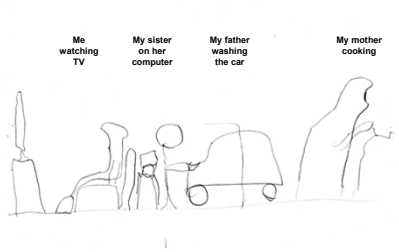


IB; 12 yr old male, Mild ASD, Superior IQ

I. B. MRN 06-0256

Depression

“Draw a picture of your family, with everybody in the picture doing something.”

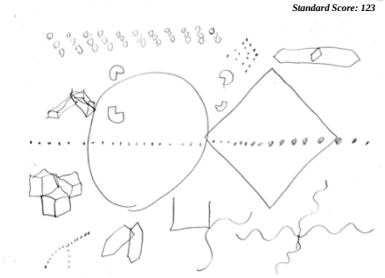


IB; 12 yr old male, Mild ASD, normal IQ

I. B. MRN 06-0256

Depression (& Perseveration)

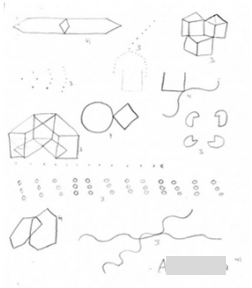
Standard Score: 123



IB; 12 yr old male, Mild ASD, normal IQ

I. B. MRN 06-0256

Anxiety, Perfectionism, and Self-Injurious Behavior



Standard Score: 138

A.D. : 9 y.o. girl with ASD (my MRN: 06-0227)

Throughout the session, “Alice” delivered a steady stream of self-deprecating comments, calling herself “stupid,” or perseveratively asking if she was “fat.” During the Bender, she anxiously and angrily twisted the eraser off the tip of the pencil, while declaring “Why do I keep making stupid mistakes?” As her stress level rose, she escalated to slapping herself, and then punching herself in the face.

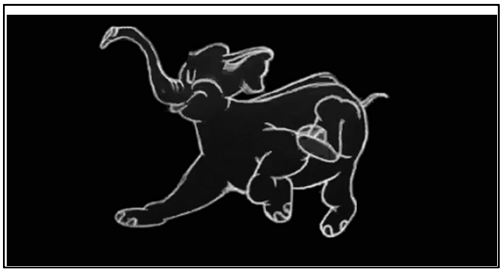
Reclaiming IDEA:
Positive Behavior Support for Internalizing Behavior

www.drcoplan.com

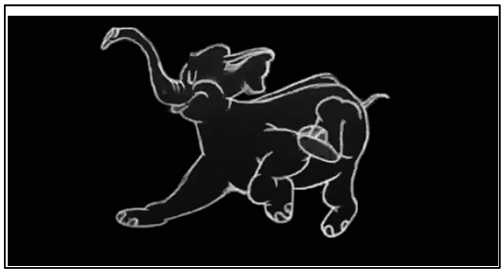
Cognitive and Emotional Traits in ASD

- **The problem**
  - Neglect of Internalizing Behavior (and mental health)
- **The Solution**
  - Positive Behavior Support Plan for Internalizing Behavior
  - Proactive mental health assessment
  - SSRI’s
  - Parent- and/or Family-centered intervention (Often)

How do you kill a blue elephant?

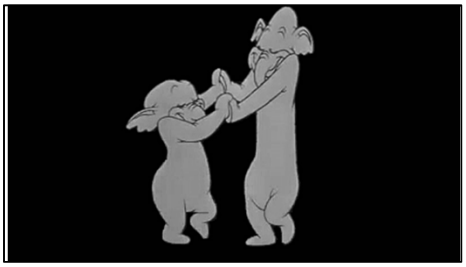


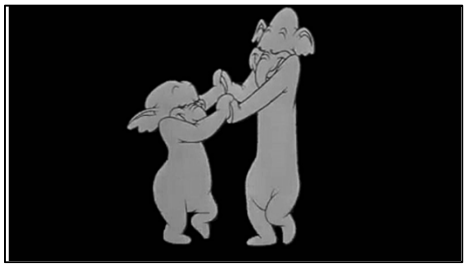
How do you kill a blue elephant?



Shoot it with a blue elephant gun.

How do you kill a pink elephant?





Hold it by the trunk until it turns blue, then *shoot it with a blue elephant gun*.

IDEA, Section 614(d)(2)(B)

http://idea.ed.gov/explore/view/p/,root,statute,I,B,614,d

(B) Consideration of special factors.--The IEP Team shall--

(i) in the case of a child whose behavior impedes the child's learning or that of others, consider the use of positive behavioral interventions and supports, and other strategies, to address that behavior.

ED.gov U. S. Department of Education
Promoting educational excellence for all Americans

This site was created to provide a "one-stop shop" for resources related to IDEA and its implementing regulations…

- **Comment: A few commenters recommended that Sec. 300.324(a)(2)(i) refer specifically to children with *internalizing and externalizing behaviors*.**
- **Discussion: We do not believe it is necessary to make the recommended change because Sec. 300.324(a)(2)(i) is written broadly enough to *include children with internalizing and externalizing behaviors*.**
- **Changes: None.**

http://idea.ed.gov/explore/view/p/,root,regs,preamble2,prepart2,D,2766

IDEA

- **As a practical matter, however:**
  - **"Behavior" is tacitly interpreted to mean *externalizing behavior***
  - **"Impedes Learning" is equated with *academic failure***

WD

- **9 y.o. boy adopted from Russia @ 10 mo. of Age**
  - **Reactive Attachment D/O**
  - **Anxiety D/O**
  - **Mood D/O**
  - **Mild atypicality**
- **Behavior is intermittently infantile, agitated, or disruptive**

MRN: 12-0783

WD

IEP:

- **"W. has wonderful background knowledge… great fluency and decoding skills… shows strength with math facts"**
- **"Behavioral concerns exist, but are not significantly impeding educational performance at this time."**

MRN: 12-0783

CV

- **13 y.o. boy**
- **Superior IQ**
- **Asperger Syndrome**
  - **Disabling perfectionism**
- **Generalized Anxiety D/O**
- **Major Depressive D/O**
  - **Suicidal Gestures x 2**
- **Task refusal & SIB when faced w. open-ended tasks – e.g. language composition**

MRN 05-0194

CV: Office Visit

C. sat down, but faced 90 degrees away from the examiner. He engaged in a variety of extraneous activities, such as fiddling with the paper on exam table behind him, looking at a book he had brought with him, or rapping with his knuckles on the exam table, as we were trying to engage him in conversation.

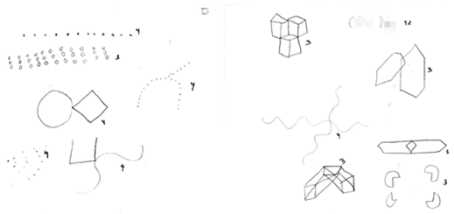
MRN 05-0194

CV: Office Visit

Eventually we brought out the Bender-Gestalt cards and instructed him to face toward us, which he did. We had no difficulty engaging him with the cards, although his first comment was *"I won't be able to do them perfectly."* We assured him that this was fine. He completed the cards in a meticulous fashion, and attained a scaled score of 131.

MRN 05-0194

CV: Office Visit



MRN 05-0194

CV

From that we moved on to asking him to "draw a picture of your family, with everybody doing something." At this, C's face flushed, he bowed his head, and began softly hyperventilating. We sat quietly and said nothing.* Five minutes elapsed, during which time C. sat with his head bowed, staring at the paper.

* In behaviorist terms, "putting refusal on extinction"

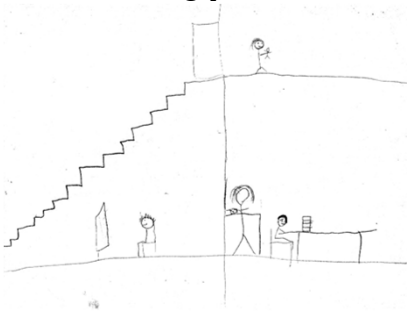
MRN 05-0194

CV

Eventually, he picked up the pencil and slowly began to draw: First his sister playing with her doll, then himself and his mother in the kitchen, and finally his father in another room watching TV. This process took an additional 5 or 10 minutes, with frequent pauses, deep sighing, and facial flushing on C's part. We remained completely silent until he had finished, at which point we declared "Good work!" He immediately responded "Can I go and see my mother now?" and dashed out.

MRN 05-0194

CV



C's family drawing. The impoverishment of detail stands in stark contrast to the skill with which he executed the Bender.

MRN 05-0194

CV

Positive Behavior Support Plan

Student Name: C[redacted] V[redacted] Date of Plan: 10/24/2013

ASSESSMENT SUMMARY:

Antecedents to the behavior of concern	Behavior of concern	Consequences maintaining the behavior of concern	Perceived function of the behavior of concern
* When given an un-preferred writing activity or assessment	* Crying * Raising his voice in frustration/anger * Heavy breathing * Voicing his refusal to complete the assignment * Self injury	* Loss of points on progress report * Notes/phone call home * Conferencing with Special Education teacher	* To avoid completing the un-preferred activity

When (antecedents to the behavior of concern) **given an un-preferred writing activity or assessment**
the student (behavior of concern) *cry, raise his voice, breathe heavily, self injure, and/or refuse to complete the assignment*
in order to (perceived function of the behavior of concern) **avoid the task**
Identify educational (skill) deficit(s) related to the **behavior of concern:**
Academic skill deficits, communication and/or social skill deficits, sensory processing skill deficits.

MRN 05-0194

CV

Positive Behavior Support Plan

Student Name: C[redacted] V[redacted] Date of Plan: 10/24/2013

ASSESSMENT SUMMARY:

Antecedents to the behavior of concern	Behavior of concern	Consequences maintaining the behavior of concern	Perceived function of the behavior of concern
* When given an un-preferred writing activity or assessment	* Crying * Raising his voice in frustration/anger * Heavy breathing * Voicing his refusal to complete the assignment * Self injury	* Loss of points on progress report * Notes/phone call home * Conferencing with Special Education teacher	* To avoid completing the un-preferred activity **Yes, but why?**

When (antecedents to the behavior of concern) given an un-preferred writing activity or assessment
the student (behavior of concern) *cry, raise his voice, breathe heavily, self injure, and/or refuse to complete the assignment*
in order to (perceived function of the behavior of concern) avoid the task
Identify educational (skill) deficit(s) related to the behavior of concern:
Academic skill deficits, communication and/or social skill deficits, sensory processing skill deficits.

MRN 05-0194

CV

"Christopher continues to express symptoms of Asperger Syndrome, Generalized Anxiety Disorder, and Depression. He continues to need intensive mental health services, which he has been receiving from Dr. B., and psychopharmacologic measures (fluoxetine)…."

MRN 05-0194

CV

"At school Christopher needs a *Positive Behavior Support Plan for Internalizing Behavior* . His current FBA is not quite right: He does not engage in crying, hyperventilation, and self-injury "to avoid completing the unpreferred activity" *per se*. Rather, he engages in crying, hyperventilation and self-injury because he has anxiety and perfectionism, and he is pre-emptively *afraid that he won't be able to complete the task perfectly*. What he needs is a behavior plan that promotes *self-tolerance* and *cognitive flexibility.* This is very different from the type of plan drawn up for children who are simply averse to doing work…"

MRN 05-0194

The Story of Billy's Box - 1

(or, why it's important to ID internalizing behavior)

- **8 y.o. boy with ASD and normal Nonverbal IQ**
- **Severe tantrums at school**
- **Antecedents:**
  - **TRANSITIONS**
- **Function?**
  - **Not attention, escape, access**
  - **"Biological" (i.e. "just part of his ASD")?**

The Story of Billy's Box - 2

(or, why it's important to ID internalizing behavior)

Q: "Billy – You're always getting in trouble at school. What's going on?"

A: "I'm afraid that if I hand in my work, I'll never get a chance to go back and make it perfect."

The Story of Billy's Box - 3

(or, why it's important to ID internalizing behavior)

"Put your papers in the box, and we promise you will be able to go back later and work on them some more, if you want to."

Cognitive and Emotional Traits in ASD

- The problem
  - Neglect of Internalizing Behavior (and mental health)
- ➢ The Solution
  - Positive Behavior Support Plan for Internalizing Behavior
  - Proactive mental health assessment
  - SSRI's
  - Parent- and/or Family-centered intervention (Often)

Positive Behavior Support Plan for Internalizing Behavior

- ➢ Staff Awareness ("Seeing the vase")
- FBA for internalizing behavior
- Visual Schedules
  - What am I supposed to be doing do *now*?
  - What am I supposed to do *next*?
- Relaxation Techniques
  - Mental Imagery
  - Isometrics / Deep Breathing
  - "Break" cards
- Cognitive Behavioral Therapy (CBT)
- SSRIs

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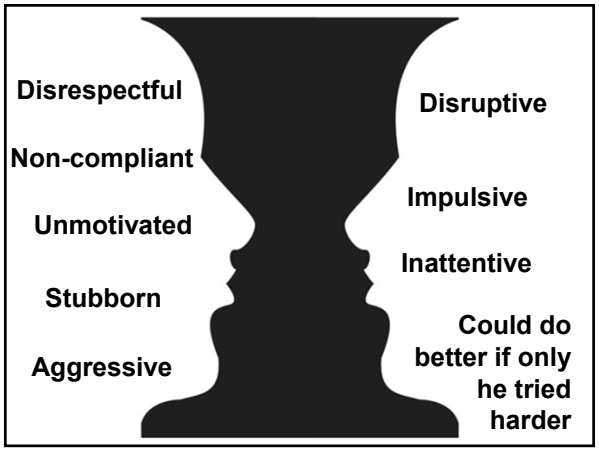

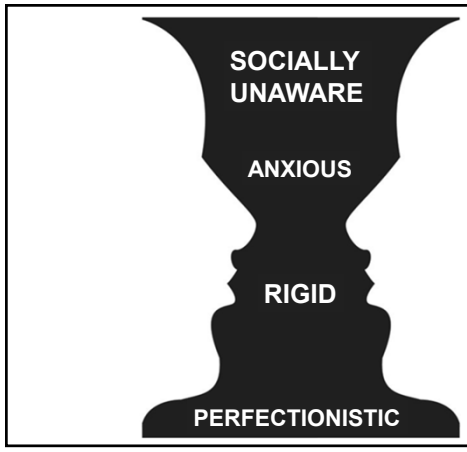

Not seeing the vase

Daniel C: 11 y.o. boy with AS

"It is so disappointing to see Daniel choose to act the way he does… He has been inconsiderate of his science group, and his teachers... He just doesn't want to focus ….His attitude makes me sad."

– Teacher report

MRN: 13-0863

Not seeing the vase

Daniel C: 11 y.o. boy with AS

"Daniel makes choices that affect his relationships with peers… Makes choices not to comply with directions or expectations… Can be sweet yet also very stubborn or refuses to comply with directions… Difficulty with transitions… Difficulty perceiving situations accurately."

– Teacher report

MRN: 13-0863

Not seeing the vase
(ignoring internalizing behavior)

Ryan continues to wrestle with the impact of anxiety, cognitive rigidity, and probable depression. His episodic task avoidance at school probably serves the function of anxiety reduction (by avoiding tasks that he perceives as too difficult). His need for constant reassurance and his self-deprecating comments are additional evidence of the burden of his anxiety. Likewise, his episodic outbursts can be traced to his cognitive rigidity, and reflect his perception that "rules have been broken" (as when he attacked another child for misstating the facts)…

RH; MRN: 11-0717; 8 y.o. male; Anxiety D/O & Mild Atypicality

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Not seeing the vase
(ignoring internalizing behavior)

"We caution against the use of the word "stubborn" to characterize Ryan's classroom behavior. Ryan's task avoidance and non-adherence to teacher instruction reflect ***cognitive rigidity and anxiety***, ***rather than "stubborn" behavior***. Re-framing his actions will lead to more appropriate intervention, placing the focus on ***anxiety management and cognitive flexibility***, rather than ***"compliance."***

RH; MRN: 11-0717; 7 y.o. male; Anxiety D/O & Mild Atypicality

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Not seeing the vase
(ignoring internalizing behavior)

We also caution against the use of quasi-punitive measures such as suspension from school. These methods do not address Ryan's underlying issues (cognitive rigidity, and difficulty reading social cues), nor will they do anything to reduce the recurrence risk for verbal aggression in the future. On the contrary, sending him home from school will actually reinforce maladaptive behavior for the future, because it gives Ryan the message "Verbally aggressive behavior 'works' as a way of escaping from stress and being sent home." …Rather than being sent home, he should be meeting with the school psychologist or counselor to address stress management ("de-escalating strategies") and social skills.

RH; MRN: 11-0717; 7 y 8 mo. male; Anxiety D/O & Mild Atypicality

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Not seeing the vase
(ignoring internalizing behavior)

…Ryan's FBA of 10/11/2013, Section II, "Physiological and Medical Factors" Question 1 "Could the behavior be the result of medical or psychiatric condition or any form of physical discomfort?" is marked "NO" by the behavior analyst who completed the form. This is incorrect. Anxiety Disorder is a "psychiatric condition," and underpins many of Ryan's maladaptive behaviors in the classroom. For children who are anxious and self-critical (as Ryan is), ***task avoidance serves the function of anxiety reduction***. The focus of behavioral intervention needs to be on cognitive flexibility and anxiety reduction, rather than "compliance."

RH; MRN: 11-0717; 8 y.o. male; Anxiety D/O & Mild Atypicality

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Positive Behavior Support Plan for Internalizing Behavior

- **Staff Awareness ("Seeing the vase")**
- ➢ **FBA for internalizing behavior**
- **Visual Schedules**
  - **What am I supposed to be doing do *now*?**
  - **What am I supposed to do *next*?**
- **Relaxation Techniques**
  - **Mental Imagery**
  - **Isometrics / Deep Breathing**
  - **"Break" cards**
- **Cognitive Behavioral Therapy (CBT)**
- **SSRIs**

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Not seeing the vase
(ignoring internalizing behavior)

ASSESSMENT SUMMARY:

Antecedents to the behavior of concern	Behavior of concern	Consequences maintaining the behavior of concern	Perceived function of the behavior of concern
Denied Access Transitioning Task Demand (individual) Social Situations (competitive)	Tantrum (4 levels) Level of Tantrums: 1. Isolation tantrum: eloping from adults or from the classroom/assigned area, not responding or refusing staff prompting 2. Low frustration tantrum: clenching fists, stomping feet, grunting, whining, crumpling/bending objects, or crying. 3. Physical tantrum: aggression is defined	anxiousness entering into regular education classroom increased academic standards difficulty maintaining focus on instructor and tasks limited time frames for task completion increased expectations for written work	*To gain* Attention *To avoid, escape, or postpone* Academic tasks/expectations

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MW; MRN 06-0211

Seeing the vase

(recognizing internalizing behavior)

ASSESSMENT SUMMARY:

Antecedents to the behavior of concern	Behavior of concern	Consequences maintaining the behavior of concern	Perceived function of the behavior of concern
Denied Access Transitioning Task demand (individual) Social situations (competitive)	Tantrum (4 levels) Level of Tantrums: 1. Isolation tantrum: eloping from adults or from the classroom/assigned area, not responding or refusing staff prompting 2. Low frustration tantrum: clenching fists, stomping feet, grunting, whining, crumpling/bending objects, or crying. 3. Physical tantrum: aggression is defined	anxiousness entering into regular education classroom increased academic standards difficulty maintaining focus on instructor and tasks limited time frames for task completion increased expectations for written work	*To gain* Attention *To avoid, escape, or postpone* Academic tasks/expectations

Antecedents	Behaviors	Consequences	Perceived Function
Anxiousness Perfectionism Fear of Failure	Tantrums Eloping Task Refusal	Temporary *reduction* in anxiety via task avoidance	Avoidance of self-blame for not completing the task perfectly

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MW; MRN 06-0211

Social Skills Deficit + Cognitive Rigidity

"With his teachers, L. is defiant, argumentative and refuses to complete tasks. He manipulates all situations and has much difficulty with the teacher/pupil hierarchy. He is very comfortable telling adults what to do and why… *He has great difficulty seeing the consequences of his actions and views punishment or consequences as personal attacks….* "

LC: 9 y.o. boy with superior IQ & AS
MRN 10-0660

Social Skills Deficit + Cognitive Rigidity

"L's IEP includes a Positive Behavior Support Plan, with goals that focus on *compliance*, and *awareness of the feelings of others*.

Specific target behaviors include "Refusal to comply with task," "Time off task," and "Making noises." The "Perceived Functions" of these behaviors are listed as "Escape from work, self-stimulation, sensory, and attention-seeking."

LC: 9 y.o. boy with superior IQ & AS
MRN 10-0660

★

Social Skills Deficit + Cognitive Rigidity

"We are pleased to see that L. has a Positive Behavior Support Plan, but we are dismayed that it does not consider *perfectionism* as an antecedent, in which case L's refusals may not be for the purpose of escape from task *per se*, but *to avoid self-criticism for not being able to do a task perfectly*.

Liam's Behavior Plan calls for him to recognize the feelings of others, which is fair. By the same token, his Behavior Plan should also require the adults to make an effort to figure out what *Liam* may be feeling – not just react to the surface topography of the behavior."

LC: 9 y.o. boy with superior IQ & AS
MRN 10-0660

Seeing the vase

(Recognizing *internalizing* behavior as the driver of *externalizing* behavior)

Antecedent (what happens before behavior of concern)	Behavior of Concern (what is the problem behavior or behaviors?)	Consequences to Maintaining Behavior of Concern (What happens as a result of the behavior?)	Perceived Function of the Behavior of Concern
Given a non-preferred task or a highly stimulating task demand situation	Michael will: 1. Show a decreased ability to focus and persist to tasks 2. Refuse to follow directions 3. Get angry and verbally disruptive when redirected 4. Become physically aggressive	1. Michael will be verbally redirected and encouraged to refocus and persist on task. 2. Michael will be asked if he needs a movement break. 3. Michael will be physically prevented from hurting others.	1. Maladaptive attempt to reduce stimulation 2. Maladaptive attempt to regulate frustration and anxiety. 3. Task avoidance

Functional Behavioral Assessment Summary Statement:

When Michael is presented with a non-preferred task or a highly stimulating task demand environment , Michael will demonstrate a decreased ability to focus and persist to task, he may become physically aggressive in order to attempt to reduce stimulation, manage his frustration, anger and/or anxiety and /or avoid the task or situation.

ML. MRN 13-0839
5 y.o. boy with AS and superior IQ

Positive Behavior Support Plan for Internalizing Behavior

- **Staff Awareness**
- **FBA for internalizing behavio**
- ➢ **Visual Schedules**
  - **What am I supposed to be doing do *now*?**
  - **What am I supposed to do *next*?**
- **Relaxation Techniques**
  - **Mental Imagery**
  - **Isometrics / Deep Breathing**
  - **"Break" cards**
- **Cognitive Behavioral Therapy (CBT)**
- **SSRIs**

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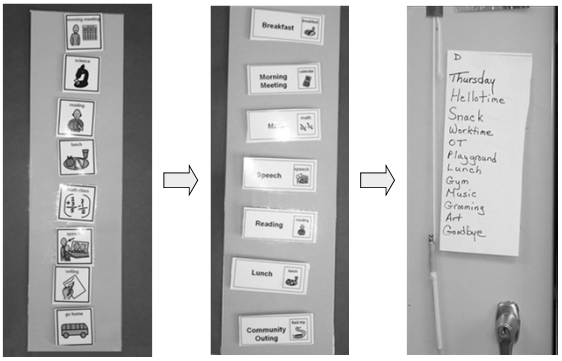
Visual Schedules



Positive Behavior Support Plan for Internalizing Behavior

- **Staff Awareness**
- **FBA for internalizing behavior**
- **Visual Schedules**
  - **What am I supposed to be doing do *now*?**
  - **What am I supposed to do *next*?**
- **Relaxation Techniques**
  - **Mental Imagery**
  - **Isometrics / Deep Breathing**
  - **"Brea/ k" cards**
  - **Self-awareness / self-esteem**
- **Cognitive Behavioral Therapy**
- **SSRIs**

"Abolishing Operations"

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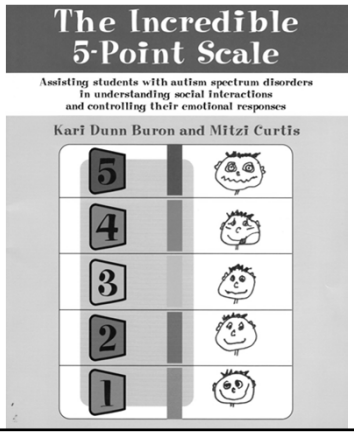
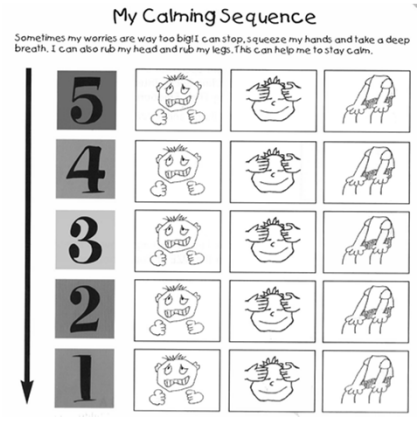
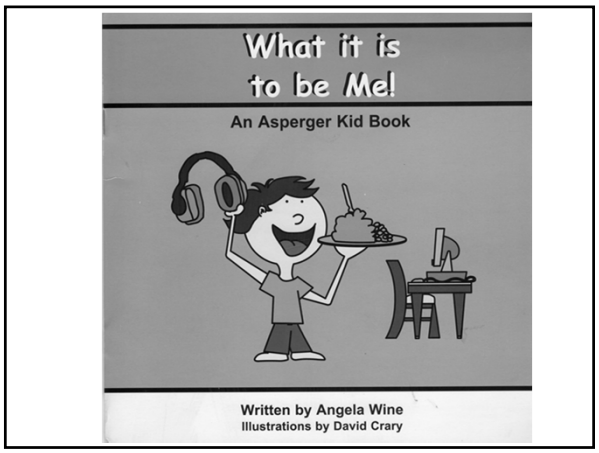
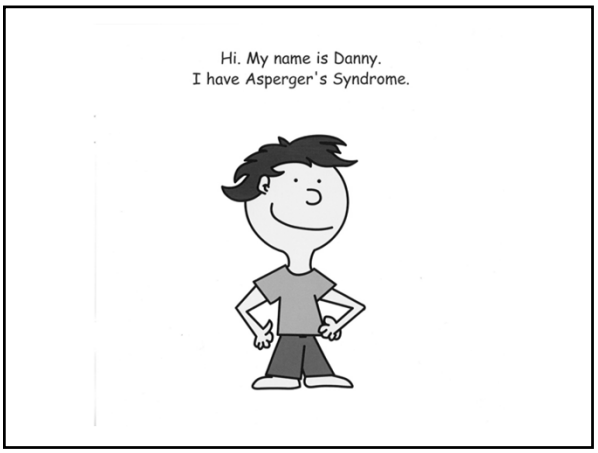
The Incredible 5-Point Scale



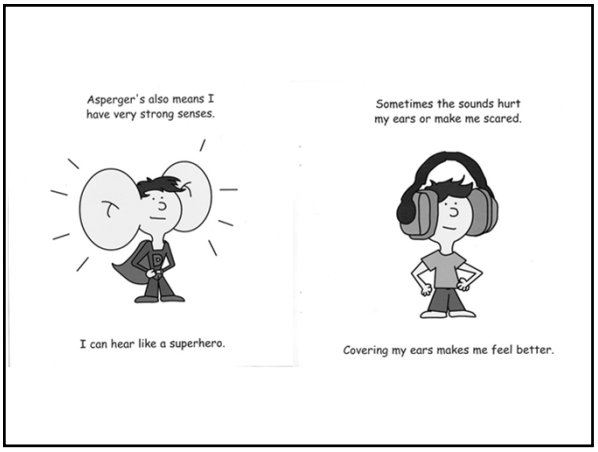


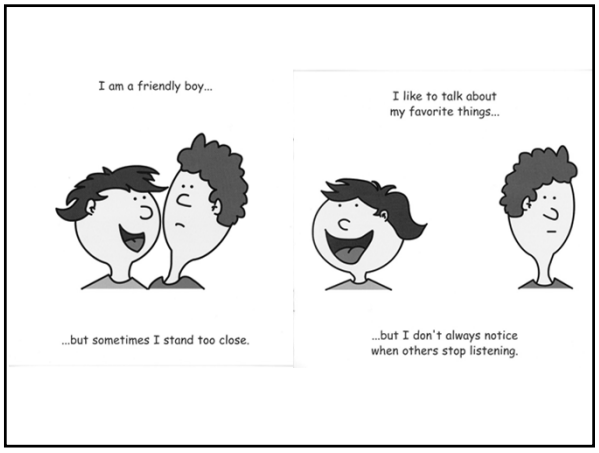
- **Knowledge is Power**
  Sir Francis Bacon
- **Self-esteem, self-esteem, self-esteem**
  Jim Coplan

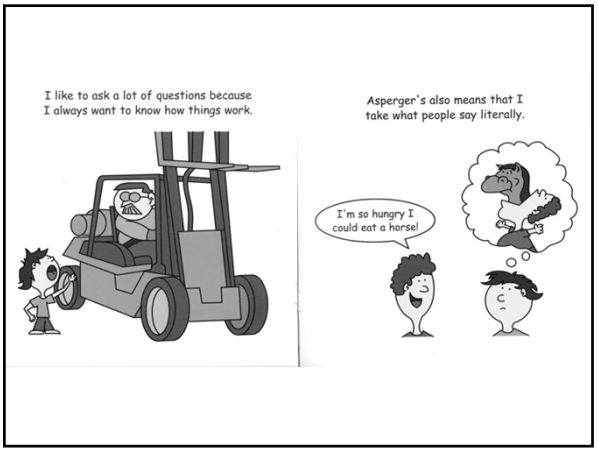

What it is to be Me!
An Asperger Kid Book
Written by Angela Wine
Illustrations by David Crary

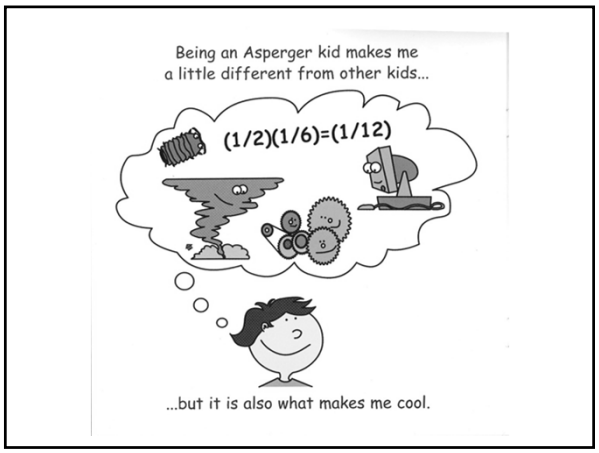

Hi. My name is Danny.
I have Asperger's Syndrome.

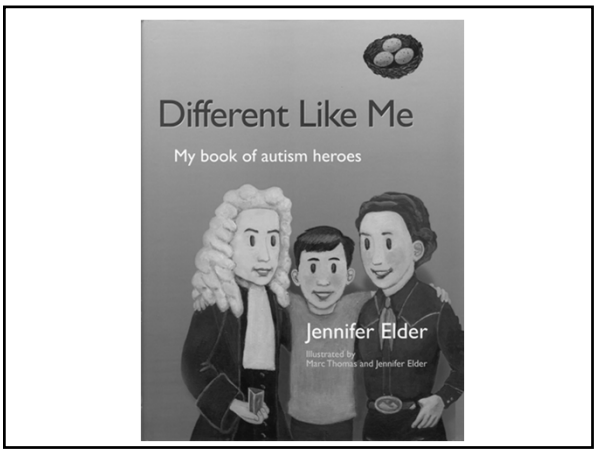

Asperger's Syndrome means there are some things I am very good at.
I am great at computers!
There are also some things that I'm not very good at.
Writing is hard for me.


Asperger's also means I have very strong senses.
I can hear like a superhero.
Sometimes the sounds hurt my ears or make me scared.
Covering my ears makes me feel better.

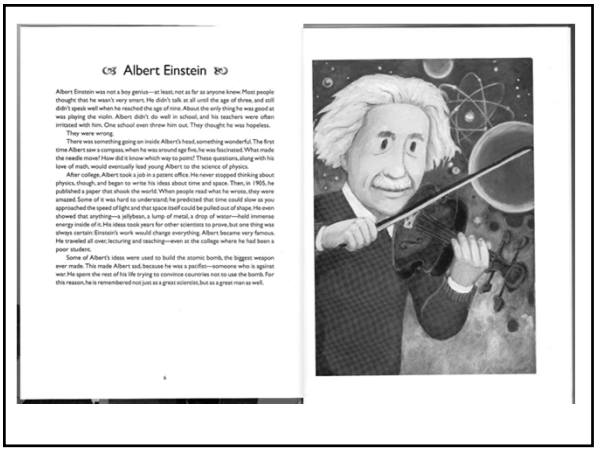

I am a friendly boy...
...but sometimes I stand too close.
I like to talk about my favorite things...
...but I don't always notice when others stop listening.

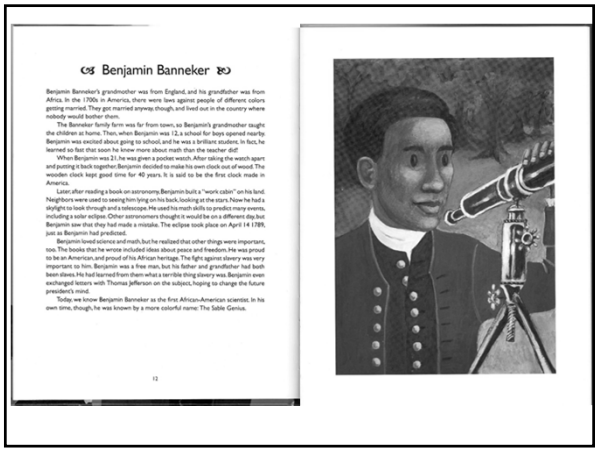

I like to ask a lot of questions because I always want to know how things work.
Asperger's also means that I take what people say literally.
I'm so hungry I could eat a horse!

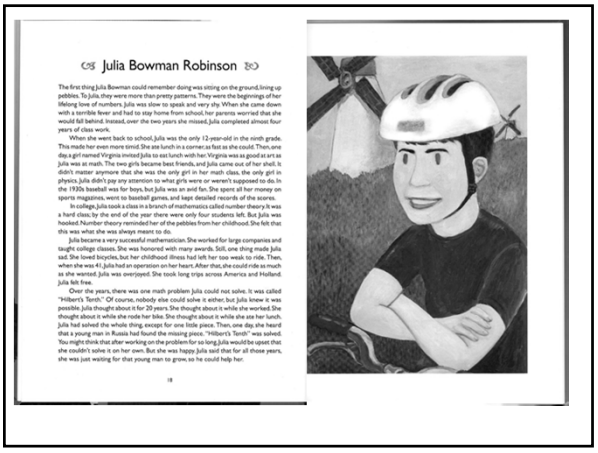

Being an Asperger kid makes me
a little different from other kids...
(1/2)(1/6)=(1/12)
...but it is also what makes me cool.


Different Like Me
My book of autism heroes
Jennifer Elder
Illustrated by
Marc Thomas and Jennifer Elder

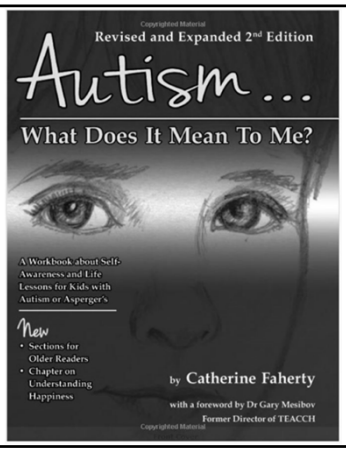

About Me
Hello! My name is Quinn. I'm eight and three-quarters years old. My favorite things are baseball, dolphins, and ancient Egypt. Oh yeah, and I'm autistic. Sometimes I don't understand people, and sometimes they don't understand me. Little things get on my nerves, like too many people talking at once. It can be hard to fit in. But when the other kids see how good I am at drawing, they are interested. This is how I make my place in the world. I just concentrate on what I do best.

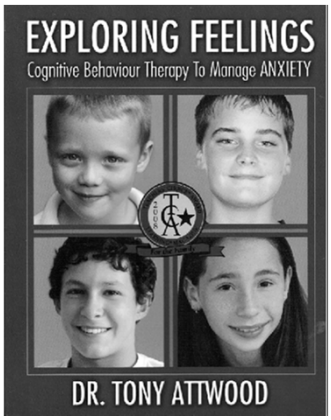

Albert Einstein
Albert Einstein was not a boy genius—at least, not as far as anyone knew. Most people thought that he wasn't very smart. He didn't talk at all until the age of three, and still didn't speak well when he reached the age of nine. About the only thing he was good at was playing the violin. Albert didn't do well in school, and his teachers were often irritated with him. One school even threw him out. They thought he was hopeless.
They were wrong.
There was something going on inside Albert's head, something wonderful. The first time Albert saw a compass, when he was around age five, he was fascinated. What made the needle move? How did it know which way to point? These questions, along with his love of math, would eventually lead young Albert to the science of physics.
After college, Albert took a job in a patent office. He never stopped thinking about physics, though, and began to write his ideas about time and space. Then, in 1905, he published a paper that shook the world. When people read what he wrote, they were amazed. Some of it was hard to understand; he predicted that time could slow as you approached the speed of light and that space itself could be pulled out of shape. He even showed that anything—a jellybean, a lump of metal, a drop of water—held immense energy inside of it. His ideas took years for other scientists to prove, but one thing was always certain: Einstein's work would change everything. Albert became very famous. He traveled all over, lecturing and teaching—even at the college where he had been a poor student.
Some of Albert's ideas were used to build the atomic bomb, the biggest weapon ever made. This made Albert sad, because he was a pacifist—someone who is against war. He spent the rest of his life trying to convince countries not to use the bomb. For this reason, he is remembered not just as a great scientist, but as a great man as well.


Benjamin Banneker
Benjamin Banneker's grandmother was from England, and his grandfather was from Africa. In the 1700s in America, there were laws against people of different colors getting married. They got married anyway, though, and lived out in the country where nobody would bother them.
The Banneker family farm was far from town, so Benjamin's grandmother taught the children at home. Then, when Benjamin was 12, a school for boys opened nearby. Benjamin was excited about going to school, and he was a brilliant student. In fact, he learned so fast that soon he knew more about math than the teacher did!
When Benjamin was 21, he was given a pocket watch. After taking the watch apart and putting it back together, Benjamin decided to make his own clock out of wood. The wooden clock kept good time for 40 years. It is said to be the first clock made in America.
Later, after reading a book on astronomy, Benjamin built a "work cabin" on his land. Neighbors were used to seeing him lying on his back, looking at the stars. Now he had a skylight to look through and a telescope. He used his math skills to predict many events, including a solar eclipse. Other astronomers thought it would be on a different day, but Benjamin saw that they had made a mistake. The eclipse took place on April 14 1789, just as Benjamin had predicted.
Benjamin loved science and math, but he realized that other things were important, too. The books that he wrote included ideas about peace and freedom. He was proud to be an American, and proud of his African heritage. The fight against slavery was very important to him. Benjamin was a free man, but his father and grandfather had both been slaves. He had learned from them what a terrible thing slavery was. Benjamin even exchanged letters with Thomas Jefferson on the subject, hoping to change the future president's mind.
Today, we know Benjamin Banneker as the first African-American scientist. In his own time, though, he was known by a more colorful name: The Sable Genius.
12

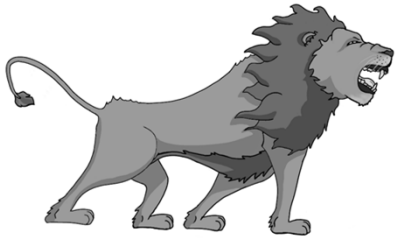

Julia Bowman Robinson
The first thing Julia Bowman could remember doing was sitting on the ground, lining up pebbles. To Julia, they were more than pretty patterns. They were the beginnings of her lifelong love of numbers. Julia was slow to speak and very shy. When she came down with a terrible fever and had to stay home from school, her parents worried that she would fall behind. Instead, over the two years she missed, Julia completed almost four years of class work.
When she went back to school, Julia was the only 12-year-old in the ninth grade. This made her even more timid. She ate lunch in a corner, as fast as she could. Then, one day, a girl named Virginia invited Julia to eat lunch with her. Virginia was as good at art as Julia was at math. The two girls became best friends, and Julia came out of her shell. It didn't matter anymore that she was the only girl in her math class, the only girl in physics. Julia didn't pay any attention to what girls were or weren't supposed to do. In the 1930s baseball was for boys, but Julia was an avid fan. She spent all her money on sports magazines, went to baseball games, and kept detailed records of the scores.
In college, Julia took a class in a branch of mathematics called number theory. It was a hard class; by the end of the year there were only four students left. But Julia was hooked. Number theory reminded her of the pebbles from her childhood. She felt that this was what she was always meant to do.
Julia became a very successful mathematician. She worked for large companies and taught college classes. She was honored with many awards. Still, one thing made Julia sad. She loved bicycles, but her childhood illness had left her too weak to ride. Then, when she was 41, Julia had an operation on her heart. After that, she could ride as much as she wanted. Julia was overjoyed. She took long trips across America and Holland. Julia felt free.
Over the years, there was one math problem Julia could not solve. It was called "Hilbert's Tenth." Of course, nobody else could solve it either, but Julia knew it was possible. Julia thought about it for 20 years. She thought about it while she worked. She thought about it while she rode her bike. She thought about it while she ate her lunch. Julia had solved the whole thing, except for one little piece. Then, one day, she heard that a young man in Russia had found the missing piece. "Hilbert's Tenth" was solved. You might think that after working on the problem for so long, Julia would be upset that she couldn't solve it on her own. But she was happy. Julia said that for all those years, she was just waiting for that young man to grow, so he could help her.
18

Wow, those people did a lot of great things! And they didn't let anybody else make them feel bad for not fitting in. They just turned what they did best into great art, or great inventions, or important new ideas. I still haven't decided what to do with my life—there's plenty of time for that! But whatever it is, I'm going to do it my own way, just like all the great people before me…only different.





"I don't want to die by animals!"
(10 year old boy with ASD and Normal IQ upon learning that his parents are planning a vacation in Africa)



CBT

	What is the worst thing that might happen? _____	What is a bad thing that might happen, but not the worst? _____	What is a neutral thing that might happen (not bad or good)? _____	What is a better thing that might happen (but not the best)? _____	What is the very best thing that might happen? _____
What might happen? →					
What is the chance that each of these things might happen (must add up to 100%) →	___%	___%	___%	___%	___%
What really happened? Mark the boxes that come closest to your prediction →					

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Motivating Operations

Motivating Operations (MO)

http://en.wikipedia.org/wiki/Motivating_operation

- **"Motivating operations affect whether a person wants or does not want a stimulus at a given moment, which helps explain [the person's] behavior at that point in time."**

Motivating Operations (MO)

http://en.wikipedia.org/wiki/Motivating_operation

- **MOs that ↑ the reinforcing or punishing qualities of a stimulus are termed *Establishing Operations (EO)***
- **MOs that ↓ the reinforcing or punishing qualities of a stimulus are termed *Abolishing operations (AO)***

Stimulus | Desired Response

Establishing Operation | Stimulus | Response

Abolishing Operation | Stimulus | Response

Abolishing Operations

- **To decrease the aversive affect of task failure, thereby preventing task avoidance and/or self-inflicted punishment following failure to complete a task perfectly**
  - ***Mistakes are OK***
  - ***I made a mistake – I will not die***
  - ***I can try again***
  - ***Mistakes are how I learn new things***
    - **Michaelangelo**

Angel with Candlestick, 1494-95

I saw the angel in the marble and carved until I set him free. Michelangelo

Typical FBA

Antecedent (task demand)

⇩

Behavior: Tantrums & Eloping
Presumed Fn: *Escape from Task*

"I can't do it perfectly!" → Agitation / SIB / "task avoidance" / inability to let go

⇩

Consequences

- Put refusal on extinction
- Overcorrection
- Token economy for task completion & avoidance
- Aversives (Loss of screen time or other privileges)

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FBA for Internalizing Behavior

Antecedent (task demand)

⇩

Behavior: Tantrums & Eloping
Presumed Function: *Escape self-punishment*

"I can't do it perfectly!" → Agitation / SIB / "task avoidance" / inability to let go

⇩

?

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FBA for Internalizing Behavior

Antecedent (task demand)

⇩

Behavior: Tantrums & Eloping
Presumed Function: *Escape self-punishment*

Abolishing Operations
"Mistakes are OK."
"I will not die."
"I can try again next time."
etc.

⇩

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FBA for Internalizing Behavior

Antecedent (task demand)

⇩

Behavior: Tantrums & Eloping
Presumed Function: *Escape self-punishment*

A.O.
"Mistakes are OK"
"I will not die"
"I can come back later"
etc.

⇩

Consequences

- ~~Put task refusal on extinction~~
- ~~Overcorrection~~
- ~~Token economy~~
- ~~Aversives~~
- "Chunk" work
- "Contracting"
- First / Then ("Premack")

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Positive Behavior Support Plan for Internalizing Behavior

- Staff Awareness
- FBA for internalizing behavior
- Visual Schedules
  - What am I supposed to be doing do *now*?
  - What am I supposed to do *next*?
- Relaxation Techniques
  - Mental Imagery
  - Isometrics / Deep Breathing
  - "Break" cards
- Cognitive Behavioral Therapy (CBT)
- SSRIs

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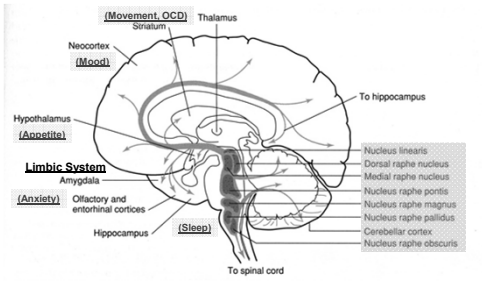
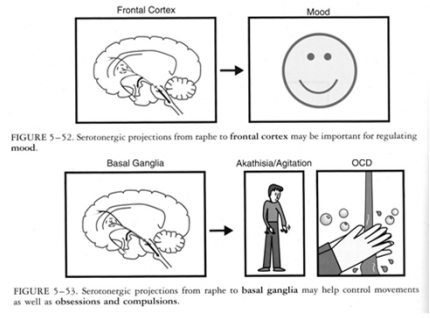
Serotonin (5 HT)



Nestler, *Molecular Neuropharmacology*, Fig 9.3

Serotonin (5 HT) Pathways



Stahl, *Essential Psychopharmacology*, fig 5.52-3

Selective Serotonin Reuptake Inhibitors (SSRIs)

- Primary targets
  - Cognitive Rigidity
    - Anxiety
    - Obsessions (thoughts)
    - Compulsions (behavior)
    - Perfectionism
  - Depression
  - Stereotypies: Probably not
- "Downstream" benefit:
  - ↓ Disruptive Behavior
  - ↑ Quality of Life

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SSRIs in ASDs

- Side Effects
  - Activation
    - Hyperactivity
    - Irritability
    - Insomnia
    - Agitation
  - Uncommon or irrelevant
    - GI dysfunciton
    - Sexual dysfunction
    - "Black Box" warning (suicidal mentation)

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Anxiety

- Daniel C: ASD, Anxiety D/O
- 6 wk after increasing fluoxetine from 10 to 20 mg/d:
  "His anxiety doesn't paralyze him any more."

DC, MRN 07-0452

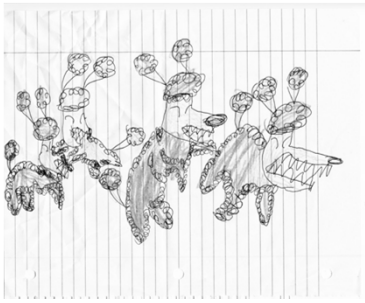
Cognitive Rigidity

"I haven't been 'fired' or told that I was 'the worst mom ever' in a month! … Our son has been more adaptable. He has not had a meltdown in a month. (He has come close – but we managed or problem-solved, to come back from the cliff.)"

Mother of an 8 y.o. with ASD and normal IQ, 4 wk after starting SSRI

MRN 10-0701

Anxiety



RD. 7 y.o. F, nl IQ, PDD-NOS & Anxiety. Father: GAD

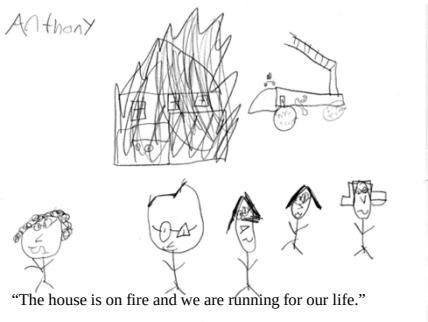
www.drcoplan.com RD; MRN: 07-0427

Anxiety after Rx with CBT & Escitalopram

RD. 9 y.o. F, nl IQ, PDD-NOS & Anxiety. Father: GAD

www.drcoplan.com RD; MRN: 07-0427

Anxiety



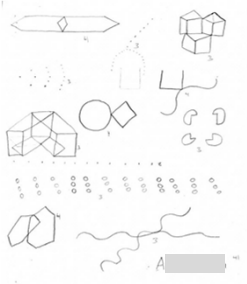
"The house is on fire and we are running for our life."

A.W.: 9 year old boy with PDD-NOS and normal IQ (MRN 11-07710

Fluoxetine 10 mg/d

A.W.: 9 year old boy with PDD-NOS and normal IQ (MRN 11-07710

Anxiety, Perfectionism, and Self-Injurious Behavior



Standard Score: 138

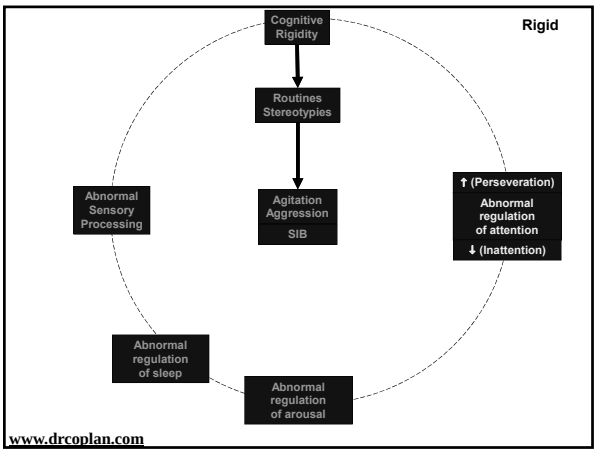
A.D. : 9 y.o. girl with ASD (my MRN: 06-0227)

Throughout the session, "Alice" delivered a steady stream of self-deprecating comments, calling herself "stupid," or perseveratively asking if she was "fat." During the Bender, she anxiously and angrily twisted the eraser off the tip of the pencil, while declaring "Why do I keep making stupid mistakes?" As her stress level rose, she escalated to slapping herself, and then punching herself in the face.

After one week on Sertraline

Sent: Thursday, May 31, 2012
To: James Coplan
Subject: amazing shift in A.D.
Importance: High

Dr. Coplan,
I "know" that it takes several weeks for SSRI's to "kick in" but the child I saw in my office today is simply a different child and the improvements are being noted across settings by mutiple adults. There was NO self abuse, NO negative self statements, an availability for interventions, just a complete transformation. We "fixed" mistakes, "re-did" errors, told jokes, and played together. The "core" Autistic symptoms are obviously still there - perseveration on bras, drawing, etc - but mood-wise there is no question that A. is already benefitting from the Sertraline... Impossible perhaps but really visibly clear... Thank you very much.
S.S. Ph.D.



Regulation of Attention

Let go & Shift

Attend to stimulus #1 ⟷ Attend to stimulus #2

www.drcoplan.com

Abnormal Regulation of Attention - 1

- **Perseveration**
  - **Inability to “Let go and shift”**
  - **Gets “stuck”**
  - ***“Overattention Deficit Disorder”***
- **Compounds the effects of cognitive rigidity**

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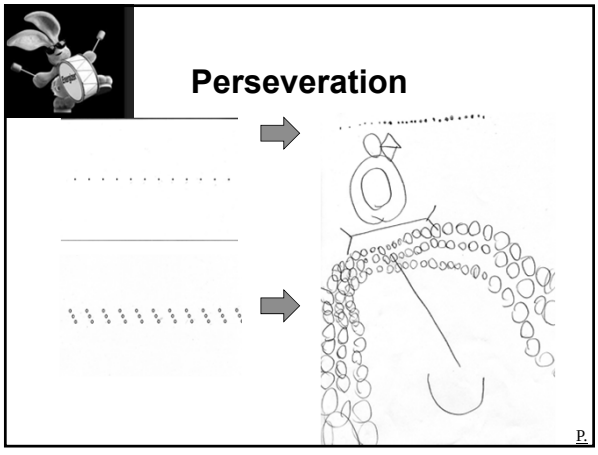
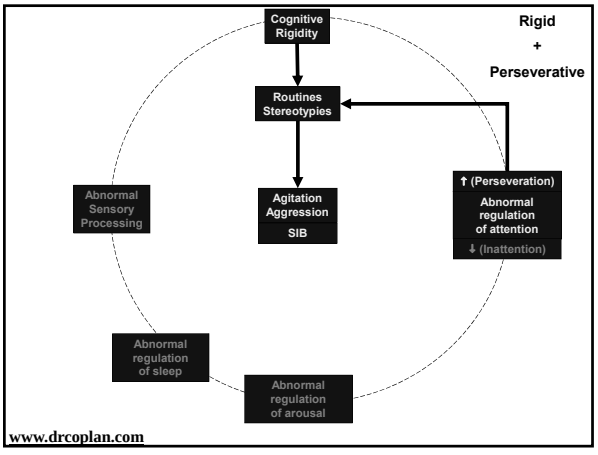
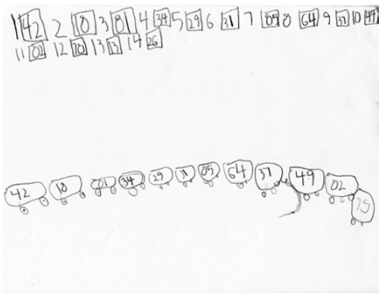


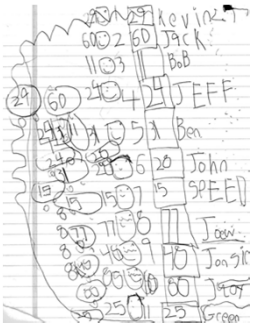


Perseveration



BL; 8 yr old male, normal IQ; PPD-NOS

Perseveration



BL; 8 yr old male, normal IQ; PPD-NOS

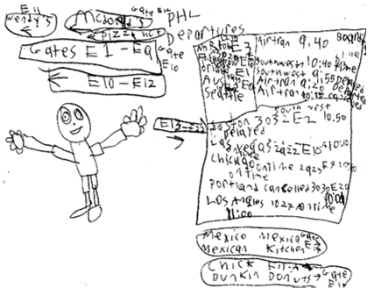
Perseveration

“Draw a picture of your family, with everybody doing something”

“We are going into the Grand Hyatt”

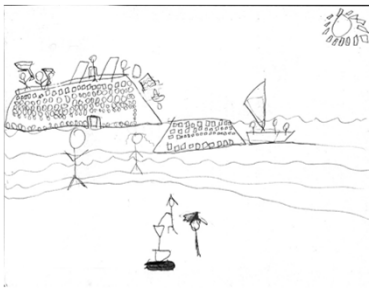
Wm W; 10 y.o. male; ASD & Anxiety; MRN 12-0827

Obsessive Interests & Perseveration



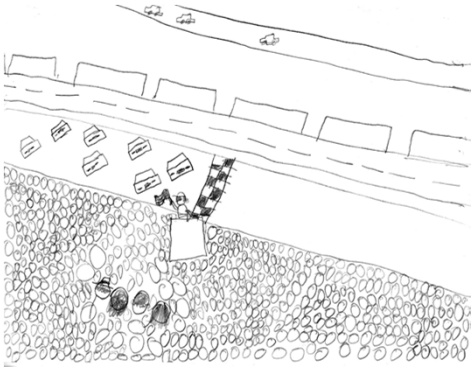
“We are at the Philadelphia airport waiting for our flight. Can I draw just me? My family already went ahead to the gate.” WW. 11 y.o. boy w. AS MRN: 12-0827

Obsessive Interests & Perseveration



“We went to the Jersey Shore.”

WW. 12 y.o. boy w. AS
MRN: 12-0827



“Me and my parents and my sister at Dover Speedway”

14 y.o. male with AS RT; MRN 08-0545

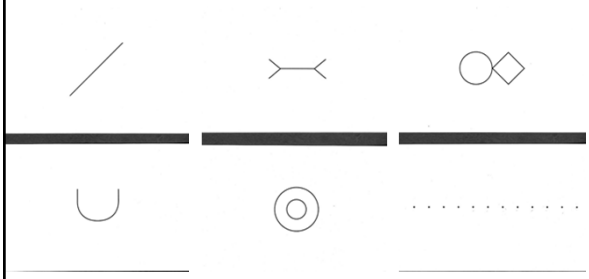
Perseveration

“Draw a picture of your family, with everybody doing something”

7 y.o. boy with “subthreshold ASD” and perfectionism

JL; MRN 14-0895

Bender-Gestalt II sample cards



Perseveration / Over-stimulation

6 yr. 11 mo. boy with ASD and normal nonverbal IQ

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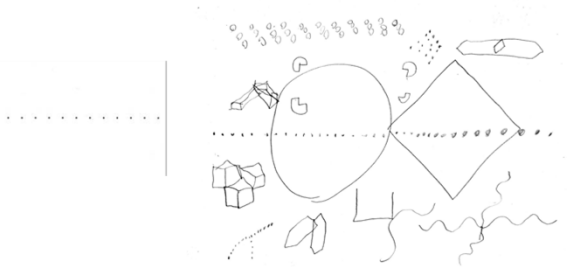
ML, MRN 13-0839

Perseveration / Depression



IB; 12 yr old male, Mild ASD, normal IQ

I. B. MRN 06-0256

Abnormal Regulation of Attention (Perseveration)

- **Interventions**
  - **Verbal preparation for transitions**
  - **Visual Schedules**
  - **SSRIs (OCD: Proven; ASD: likely)**

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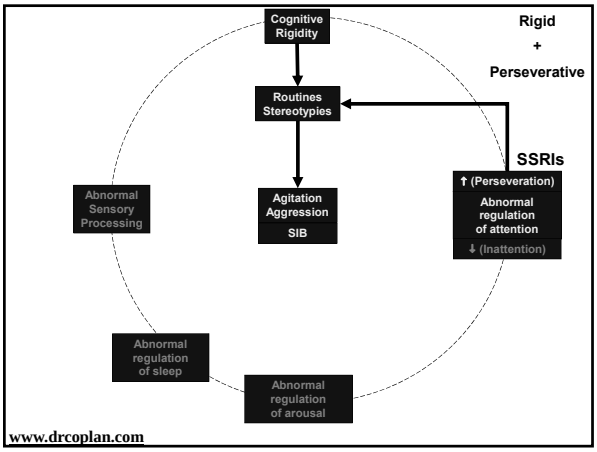

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Abnormal Regulation of Attention - 2

- **Inattention**
  - Inability to focus
  - Impulsive
  - Distractible

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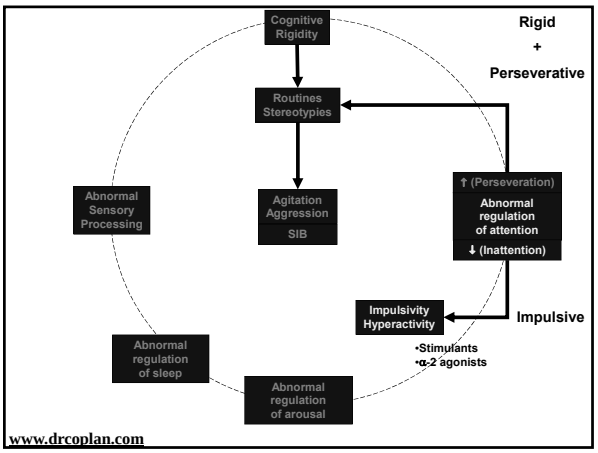

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Inattention

- **Interventions**
  - Limited stimuli
  - Short work periods
  - Medication
    - Stimulants (may ↑ anxiety / rigidity / agitation)
    - alpha-2 agonists

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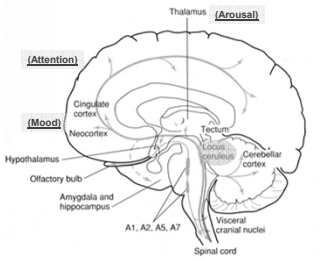
Noradrenergic pathways

(Norepinephrine)



Locus Ceruleus ("blue spot"): Principal noradrenergic source in brain.

Nestler, *Molecular Neuropharmacology*, Fig 8.5

Noradrenergic pathways

(Norepinephrine)

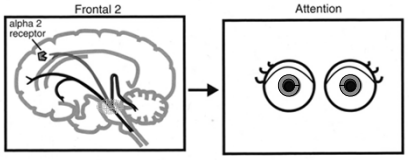
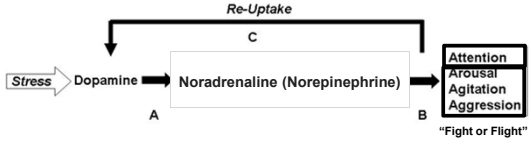


FIGURE 5–25. Other noradrenergic projections from the locus coeruleus to **frontal cortex** are thought to mediate the effects of norepinephrine on **attention**, concentration, and other **cognitive functions**, such as working memory and the speed of information processing. **Alpha 2** postsynaptic receptors may be important in transducing postsynaptic signals regulating attention in postsynaptic target neurons.

Stahl, *Essential Psychopharmacology*, fig 5.25

Stimulants

(Dopaminergic; Noradrenergic; Sympathomimetic)



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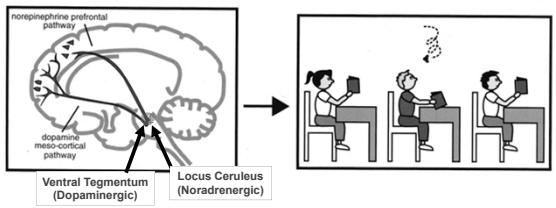
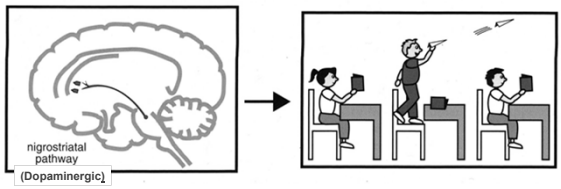
Inattention



Insufficient activation of frontal cortex ➔➔➔ Inattention

Stahl, *Essential Psychopharmacology*, fig 12.1

Hyperactivity

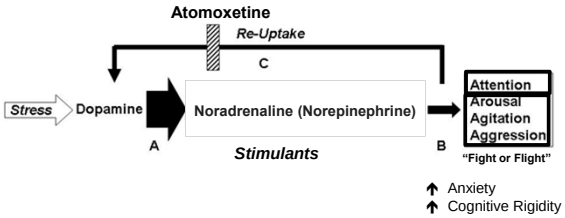


Stimulants in children with ADHD ➔ "Paradoxical" calming

Stahl, *Essential Psychopharmacology*, fig 12.1

Stimulants

(Dopaminergic; Noradrenergic; Sympathomimetic)



↑ Anxiety
↑ Cognitive Rigidity

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Stimulants

Benefits

- ↑ Attention Span
- ↑ Self-regulation

Side Effects

- Perseveration
- ↑ Cognitive Rigidity and Arousal level
  - Anxiety
  - Agitation
  - Disruptive behavior
- ↓Appetite, growth
- ↓ Sleep

Stimulants, NRI's

Generic Name(s)	Brand Name(s)	Comment
Amphetamine		FDA Schedule II
Dextroamphetamine	Dexedrine, Dextrostat	FDA Schedule II
Dextroamphetamine + amphetamine	Adderall	FDA Schedule II
Methylphenidate	Concerta, Ritalin, Metadate	FDA Schedule II
Dexmethylphenidate	Focalin	FDA Schedule II
Atomoxetine, Attentin	Strattera	Norepinephrine reuptake Inhibitor (NRI), not FDA Schedule II

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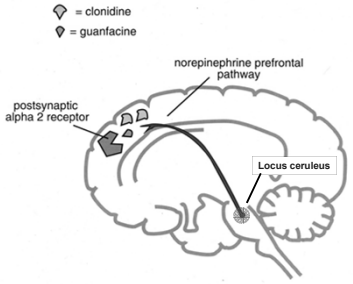
Alpha-2 agonists

(clonidine, guanfacine)



Stahl, *Essential Psychopharmacology*, fig 12.6

Alpha-2 Agonists

Benefits
- ↓ Agitation
- ↓ Hyperactivity
- ↑ Attention Span
- No exacerbation of anxiety / rigidity

Side Effects
- Sleepiness: Common
- Emotional Lability (crying) - occasional
- Hypotension (low BP) - rare

Alpha-2 Agonists

"It's buying him the split second before he reacts."

Parents of a child with ASD, agitation, anxiety, and cognitive rigidity after starting guanfacine.

(ML; MRN 13-0839)

Alpha-2 Agonists

Generic Name	Brand Name(s)	Comment
Clonidine	Catapres	More sedating than guanfacine
Guanfacine	Tenex, Intuniv	

- Frontal cortex / Locus Ceruleus: post-synaptic alpha-2 receptors
- Sympathetic outflow (autonomic nervous system): Pre-synaptic autoreceptors →↓BP

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Clinical Pearl

- **Beware of Cognitive Rigidity masquerading as ADHD**
  - Perseveration on inner stimuli: "Inattentive"
  - Perfectionism:
    - "Problems w. task completion"
    - (Or: Task avoidance!)
  - Anxiety:
    - "Rushes through work"
    - "Out of seat behavior"

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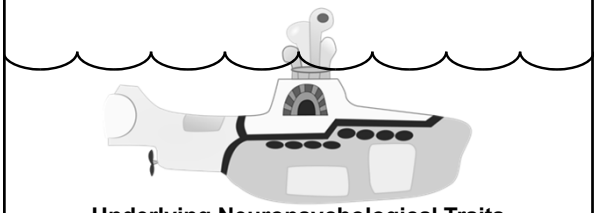
Pearl

- **"His anxiety shows itself as impulsivity"**
  - Teacher of 10 y.o. boy w. AS (DC, MRN 13-0863)

Visible features
(DSM, IDEA, ICD, etc.)



Underlying Neuropsychological Traits
- ↓ Central Coherence
- ↓ Theory of Mind
- Cognitive Rigidity
- ➢ Impaired regulation of arousal & mood

Regulation of Arousal

Hypoarousal
- Lethargic

⇄ **Calm & Relaxed** ⇄ **Fight or Flight Response**

"Red Alert"
- ⬆Adrenaline
- ⬆Heart Rate
- ⬆Resp. Rate
- Combative

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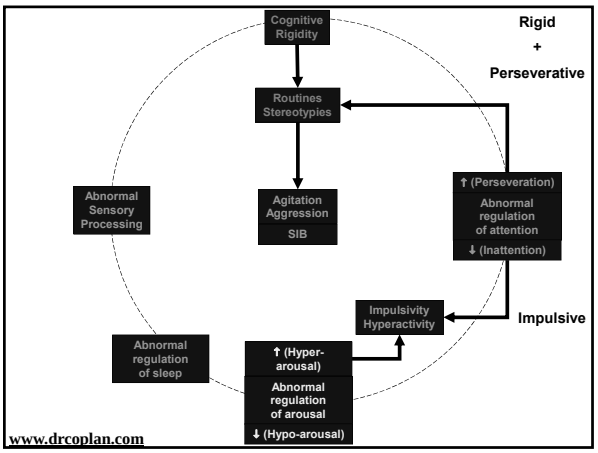


Dysregulation of Arousal & Mood

- "If he gets up on the wrong side of the bed we know it's going to be a bad day."

"He is so hard to calm down when he gets upset….His emotional thermostat doesn't work"

Parent of an 8 year old with ASD

F. O. MRN 06-0208

Arousal & Mood

"A. seems to be struggling with his emotions… can vary from pleasant interaction that can quickly turn to… aggression. Always wants to act his own way & tries to intimidate staff and peers. Level of agitation is unpredictable… aggression, mood swings…"

AF: 10 yr old boy with mild ASD and cognitive skills ranging from average to mild ID. MRN 07-0472

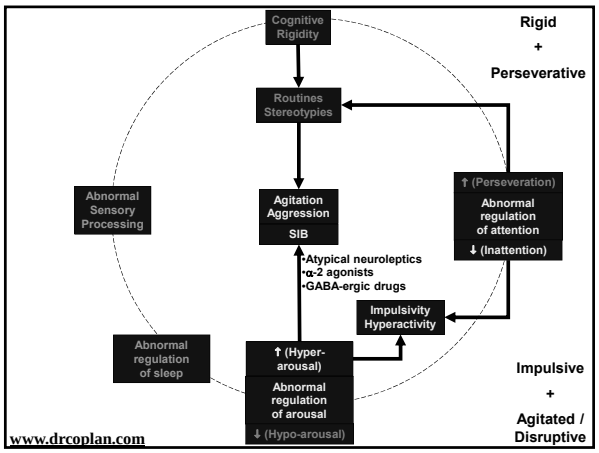
Cognitive Rigidity →Anxiety → Disruptive Behavior

"There's *no ease yet*. I want him to be able to relax…..

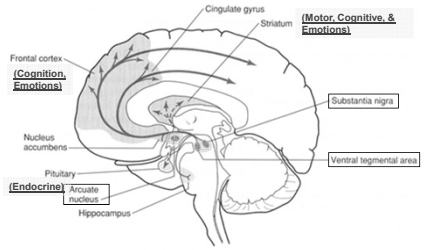
He goes from 0 to 100 with no regulation of emtion… just flips… we're walking on eggshells"

5 y.o. boy with ASD, anxiety, and normal nonverbal IQ

Michael H
MRN 10-0703



Dopamine

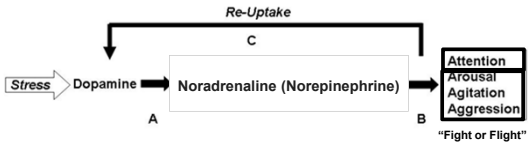


Substantia Nigra ("black stuff"), Ventral tegmentum, arcuate nucleus

Nestler, *Molecular Neuropharmacology*, Fig 8.6

Dopamine

(Dopaminergic; Noradrenergic; Sympathomimetic)



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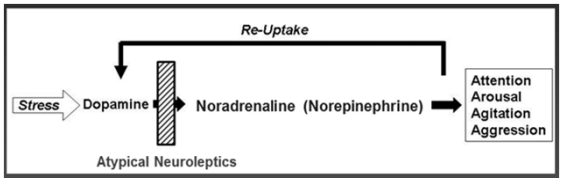
Atypical Neuroleptics

(Dopamine Blockers)



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Atypical Neuroleptics

Benefits
- ↓ Arousal Level
- ↑ Self-regulation

Side Effects
- Sedation
- ↑ Appetite / Wt Gain
- Insulin resistance / Diabetes
- Abnormal movements (reversible)
- Tardive Dyskinesia (irreversible)
- ↑ Prolactin

Atypical Neuroleptics

Generic Name	Brand Name	Comment
Aripiprazole	Abilify	• Relatively less risk of weight gain • FDA approved for Rx of ASD
Clozapine	Clozaril	• Bone marrow suppression
Olanzapine	Zyprexa	• Greater risk of weight gain
Quetiapine	Seroquel	• Greater sedation
Risperidone	Risperdal	• Greater risk of weight gain • FDA approved for Rx of ASD
Ziprazidone	Geodon	Relatively less risk of weight gain

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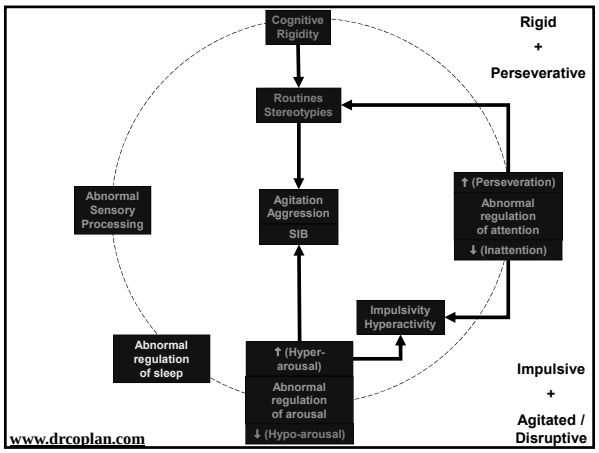

Regulation of Sleep - 1

- **Melatonin**
  - Brain hormone
  - ↓ Metabolic rate (Heart, Temp)
  - "You're sleepy now"
- **Suppressed by light**
  - 24 hr cycle
  - Seasonal cycle

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Regulation of Sleep - 2

- **Abnormal melatonin cycling**
  - Primary disorders of sleep
  - Blindness
  - ASD
- **Symptoms**
  - Delayed onset of sleep
  - Shortened duration / frequent wakening

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Regulation of Sleep - 3

- **Shared genetic control**
  - Regulation of sleep
  - Regulation of arousal
- **Family history of sleep disorder**

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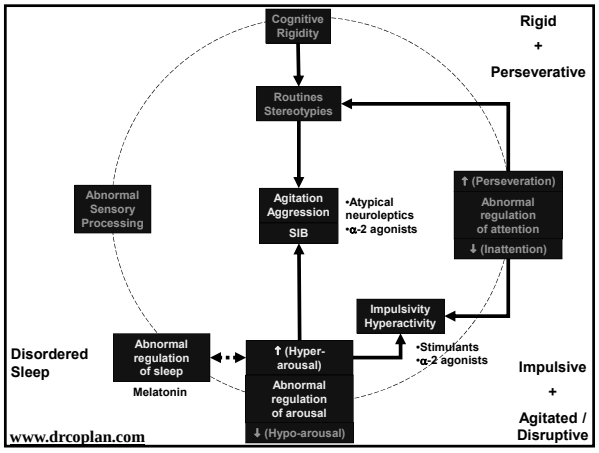

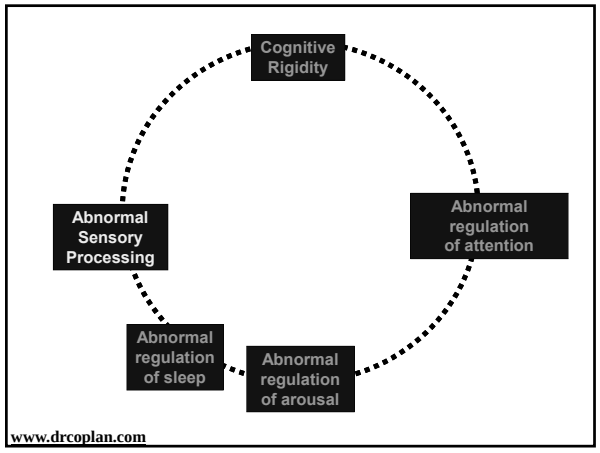

Sensory Processing

- **Subjective Properties**
  - Familiar / Unfamiliar
  - Pleasant / Unpleasant
  - Strong / Weak
  - Internal / External
- **Sensory Input ➔ Self-awareness**
- **Mirror Neurons ➔ Empathy**

Mostofsky, S. and J. Ewen, *Altered Connectivity and Action Model Formation in Autism Is Autism*. Neuroscientist, 4/15/2011

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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*	•*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

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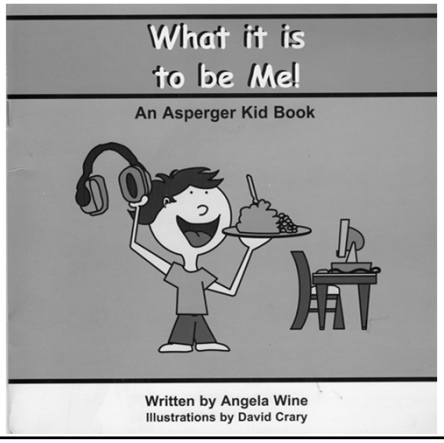
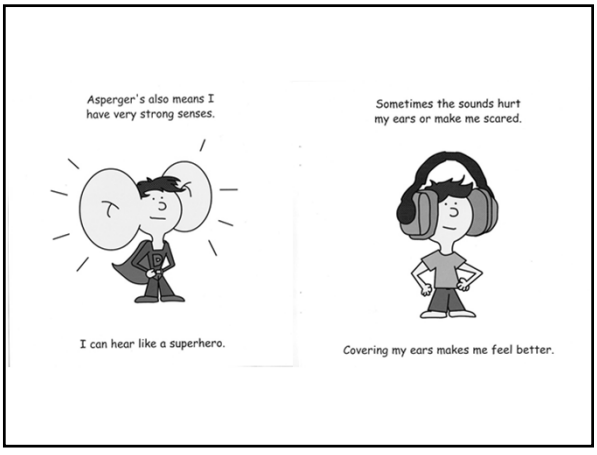
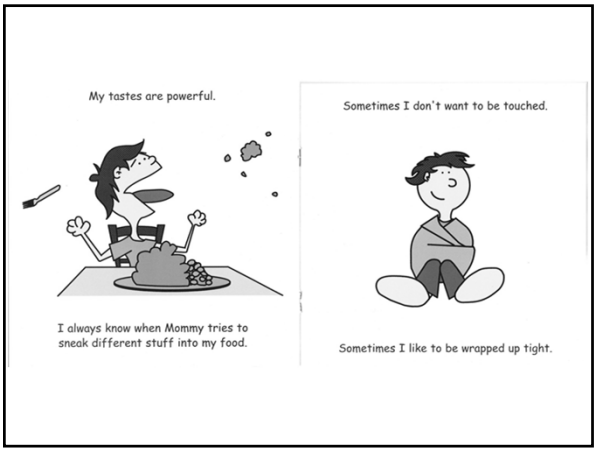
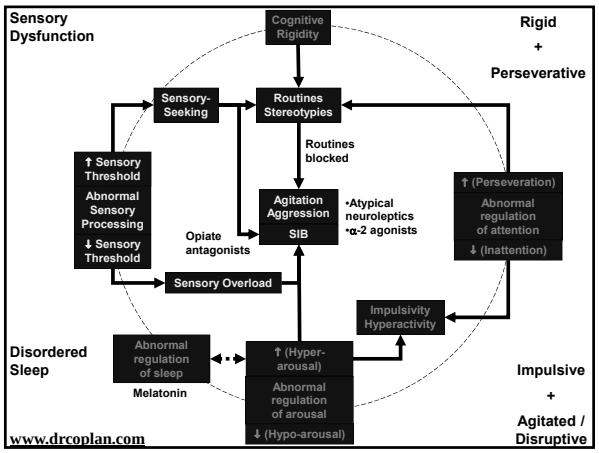
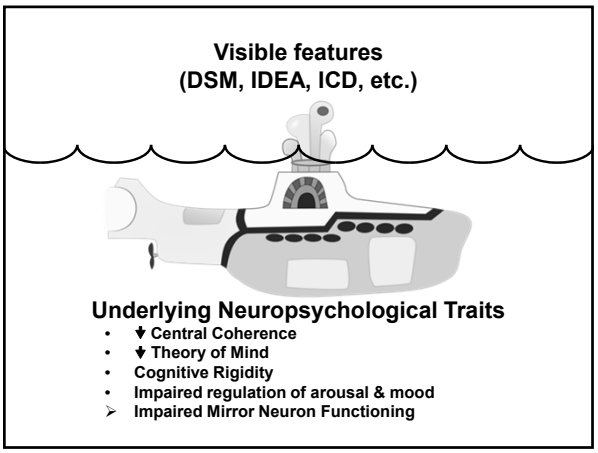
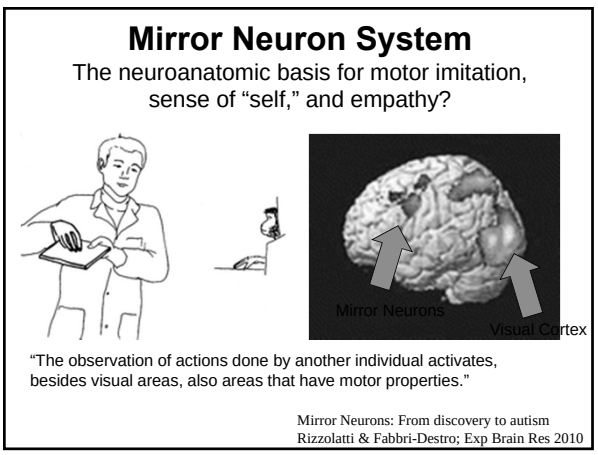







Sensory Dysfunction
Cognitive Rigidity
Rigid
+
Perseverative
Sensory-Seeking
Routines Stereotypies
Routines blocked
↑ Sensory Threshold
Abnormal Sensory Processing
↓ Sensory Threshold
Agitation Aggression
SIB
•Atypical neuroleptics
•α-2 agonists
Opiate antagonists
↑ (Perseveration)
Abnormal regulation of attention
↓ (Inattention)
Sensory Overload
Impulsivity Hyperactivity
Disordered Sleep
Abnormal regulation of sleep
Melatonin
↑ (Hyper-arousal)
Abnormal regulation of arousal
↓ (Hypo-arousal)
Impulsive
+
Agitated / Disruptive
www.drcoplan.com


Visible features
(DSM, IDEA, ICD, etc.)
Underlying Neuropsychological Traits
• ↓ Central Coherence
• ↓ Theory of Mind
• Cognitive Rigidity
• Impaired regulation of arousal & mood
➢ Impaired Mirror Neuron Functioning


Mirror Neuron System
The neuroanatomic basis for motor imitation, sense of "self," and empathy?
Mirror Neurons
Visual Cortex
"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

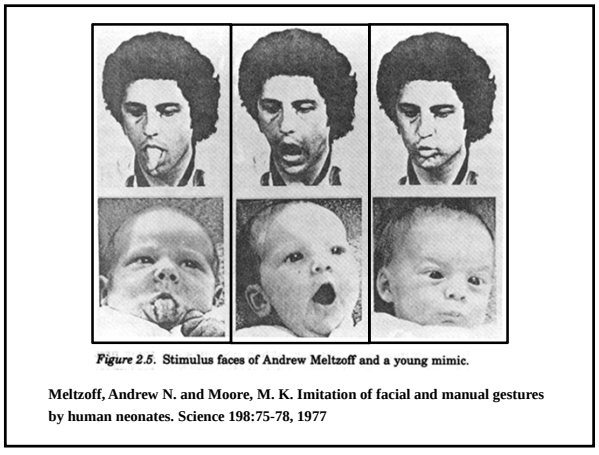
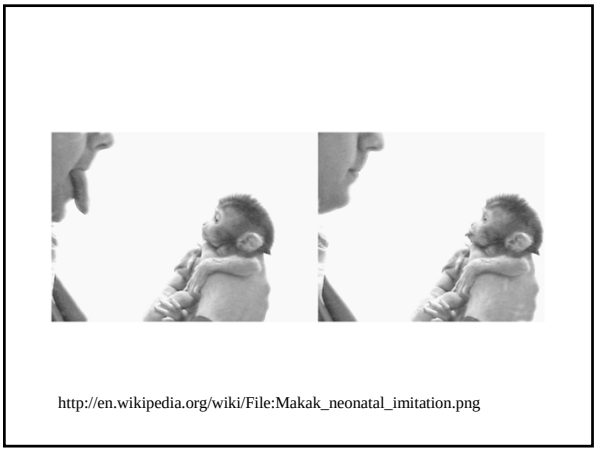


Figure 2.5. Stimulus faces of Andrew Meltzoff and a young mimic.
Meltzoff, Andrew N. and Moore, M. K. Imitation of facial and manual gestures by human neonates. Science 198:75-78, 1977


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

Altered Connectivity and Action Model Formation in Autism Is Autism

The Neuroscientist
17(4) 437–448

DOI: 10.1177/1073858410392381
http://nro.sagepub.com
SAGE

Stewart H. Mostofsky[1] and Joshua B. Ewen[2]

Mirror Neuron System (MNS)

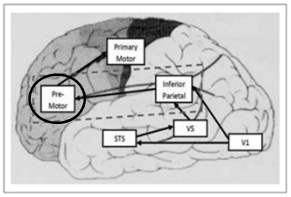
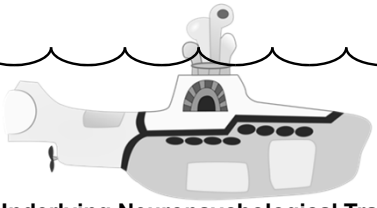


Figure 1. Brain regions associated with praxis and imitative function

“Children with autism place a greater than normal reliance during motor learning on their own proprioception while discounting visual consequences in the extrinsic world”

Visible features (DSM, IDEA, ICD, etc.)



Underlying Neuropsychological Traits

- ↓ Central Coherence
- ↓ Theory of Mind

⇨ **Psychosis / SCZ ?**

- Cognitive Rigidity
- Impaired regulation of arousal & mood
- Impaired mirror neuron function

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."

"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…**

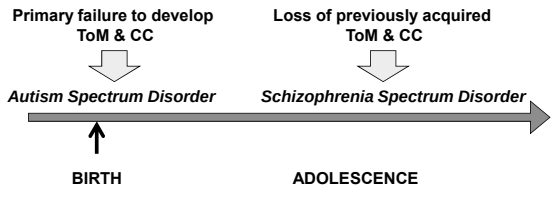
"Is Schizophrenia on the Autism Spectrum?"

King & Lord, 2011

- **"Given the degree of overlap [of symptoms], one might reasonably ask if paranoid thinking could be a logical downstream consequence of a common underlying difficulty in the perception of social communication"**

Possible Relationship Between ASD and SCZ

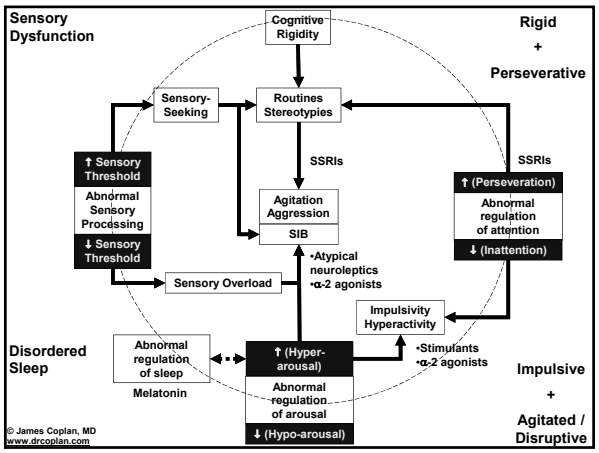
How would your behavior change, if you suddenly lost Theory of Mind and Central Coherence?

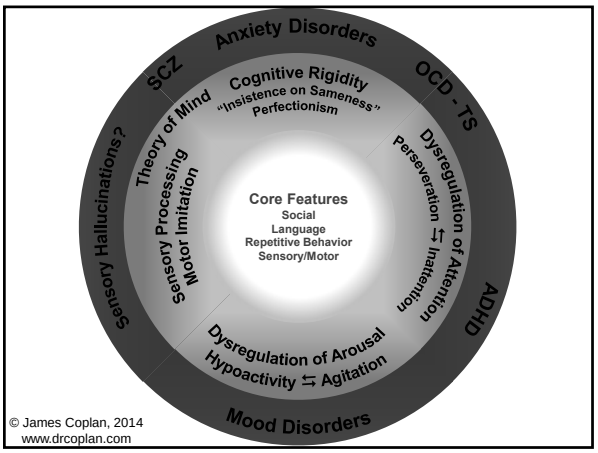


The whole is greater than the sum of its parts

Max Wertheimer

www.drcoplan.com



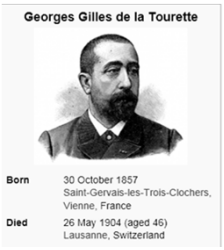


Outline

- **ASD: A multi-faceted, biologically based derangement of behavior**
- **Other "non-behavioral" behaviors:**
  - **Tics / Tourette Syndrome**
  - **Seizures**

Tics / Tourette Syndrome

Gilles de la Tourette



1884: Maladie des tics

TS – Operational Definition

http://en.wikipedia.org/wiki/Tourette_syndrome
http://www.tsa-usa.org/index.html

- **Multiple physical (motor) tics and at least one vocal (phonic) tic, with a duration of at least 12 months**
- **Tics characteristically wax and wane, can be *suppressed temporarily*, and are preceded by a *premonitory urge***

TS – Operational Definition

http://en.wikipedia.org/wiki/Tourette_syndrome
http://www.tsa-usa.org/index.html

- **TS is one end of a spectrum of tic disorders, which includes provisional, transient and persistent (chronic) tics.**
- **Prevalence of TS:**
  - **Estimated at 0.1 to 3% (differences attributed to study methodology and diagnostic criteria)**
  - **Higher in samples with DD or MH d/o**

Tic Rating Scale
(Adapted from the Yale Global Tic Severity Scale)
© James Coplan, MD www.drcoplan.com

Child's Name:	**Rater's Name:**
Date:	**Relationship to child:**

Motor Tics: The following are examples of motor tics:
1) Involuntary movements
   a) Eyes / Face / Mouth (eye blinking, grimacing, puffing out cheeks, head-rolling)
   b) Arms / Trunk / Legs (jerking or twisting movements)
2) Touching / Tapping / Picking (touching adults or peers, tapping fingers on desk, skin-picking)
3) Other sudden, stereotyped movements or behaviors (Describe:_____)

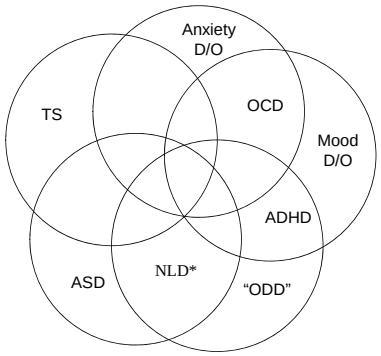
Vocal Tics: The following are examples of vocal tics:
1) Sounds (grunting, sniffing, coughing, barking)
2) Syllables (uh, um, er, etc.)
3) Words and phrases (self-generated utterances, or repetition of others [echolalia])

- Tics may occur singly, or in simultaneous or sequential patterns (ex: Eye blink → Head roll → Trunk movement)
- Single tics and mild tics can be disguised by the child to resemble normal voluntary movements. *Be alert to behaviors that appear to be voluntary, but in fact represent camouflaged involuntary behavior* (touching classmates is a good example). Complex clusters of tics, and intense tics, cannot be disguised.

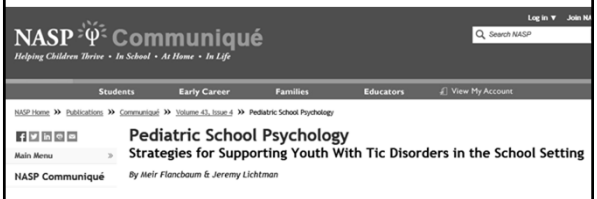
Severity →	0	1	2	3	4	5
Number of different motor or vocal tic patterns	**None**	**1 motor or vocal tic Describe:**	**2-5 motor or vocal tics Describe:**	**>5 motor or vocal tics Describe:**	**As least one pattern of multiple simultaneous or sequential tics:**	**2 or more patterns of multiple simultaneous or sequential tics:**
Frequency of tics	**None**	**Rarely**	**Occasionally**	**Frequently**	**Almost always**	**Always**
Intensity	**None**	**Minimal** (Not externally visible)	**Mild** (Visible, but not more forceful than typical voluntary actions)	**Moderate** (More forceful than typical voluntary actions, but not outside the range of normal.)	**Marked** (More forceful than typical voluntary actions; has an "exaggerated" character)	**Severe** (Extremely forceful and exaggerated. Risk of injury because of their forceful expression.)
Complexity	**None** If present, tics are "simple" - sudden, brief, and *purposeless* in character.	**Borderline** Some tics are not clearly "simple" in character, but *may be readily camouflaged.*	**Mild** Some tics are "complex" (purposeful in appearance); may mimic automatic behaviors, such as grooming, syllables, or brief meaningful utterances ("uh huh," "hi"). *May be readily camouflaged.*	**Moderate** (More purposeful and sustained in appearance. Difficult to camouflage but may be rationalized or "explained" as normal behavior (picking, tapping, saying "you bet," brief echolalia).	**Marked** Difficult to camouflage; not be easily rationalized as normal behavior or speech (intense bodily movements, gestures, sustained echolalia)	**Severe** Extremely unusual, inappropriate, bizarre or obscene
Interference	**None**	**Minimal** (Tics do not interrupt flow of behavior and speech)	**Mild** (Tics occasionally interrupt flow of behavior and speech)	**Moderate** (Tics frequently interrupt flow of behavior and speech, but do not disrupt intended action or communication)	**Marked** (Tics frequently interrupt flow of behavior and speech, *and* occasionally disrupt intended action or communication)	**Severe** Tics frequently disrupt intended action or communication

Your Role

- **Recognition**
  - **Typical delay between onset & Dx: 5 yr**
- **Disentangle from comorbidities**
  - **ADD, ASD, Anxiety D/O, OCD, "ODD"**
- **Education, Reassurance**
  - **Parents, child, staff, classmates**
- **Collaboration**
  - **MD (meds), Psych: CBT**



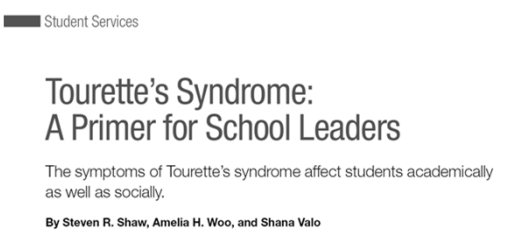
* NLD: Nonverbal LD
~ Social-Pragmatic Lang. D/O



http://www.nasponline.org/publications/cq/43/4/pediatric-school-psychology.aspx

Tourette Syndrome

http://www.nasponline.org/resources/principals/tourettesprimer.pdf



TS – Family Centered Approach

- TS is *strongly* genetic
- TS is strongly associated with:
  - Anxiety Disorder (incl. OCD)
  - ADHD
- If you have a pupil with TS:
  - What about mom & dad?
  - What about siblings?

http://www.tsa-usa.org/

Outline

- ASD: A multi-faceted, biologically based derangement of behavior
- Other "non-behavioral" behaviors:
  - Tics / Tourette Syndrome
  - ➢Seizures

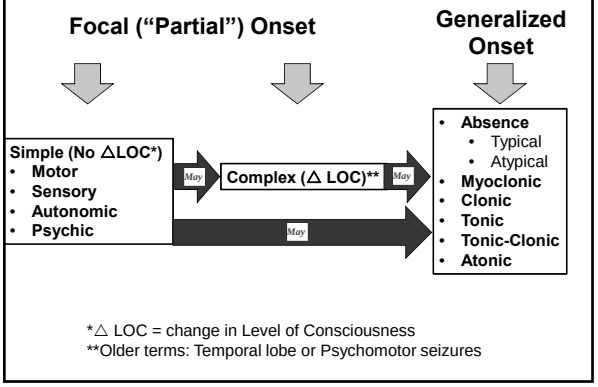
Definitions

- Seizure: Sudden change in level of consciousness *and / or* motor & sensory phenomena, due to electrical discharge in brain
- Epilepsy: Recurrent unprovoked seizures

International classification of seizure types
http://en.wikipedia.org/wiki/Seizure_types

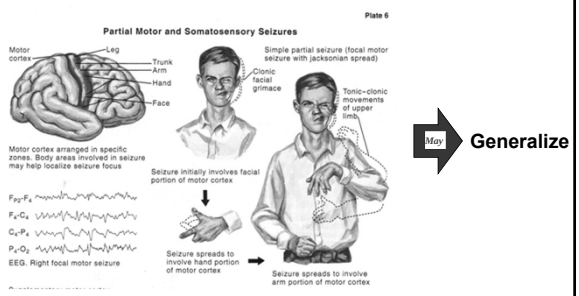
I. Focal seizures (Older term: partial seizures)
- **Motor, sensory, autonomic &/or psychic phenomena**
- ***May* include *change* in Level of Consciousness (△LOC)**
- ***May* progress to generalized seizures**

II. Generalized Seizures
- **Always include *loss* of consciousness**
- **Usually includes motor component**

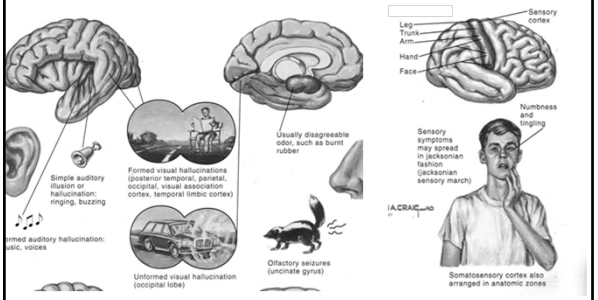


*△ LOC = change in Level of Consciousness
**Older terms: Temporal lobe or Psychomotor seizures

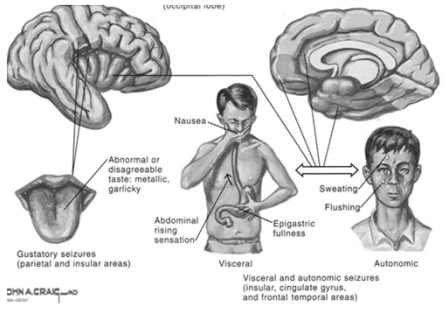
Focal ("Partial") Sz: Motor



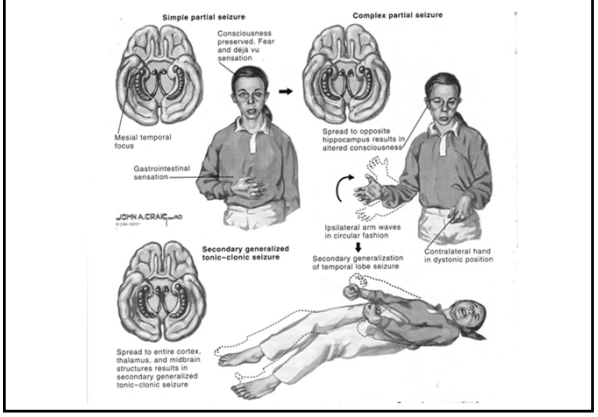
Focal ("Partial") Sz: Sensory / Somatosensory



Focal ("Partial") Sz: Autonomic

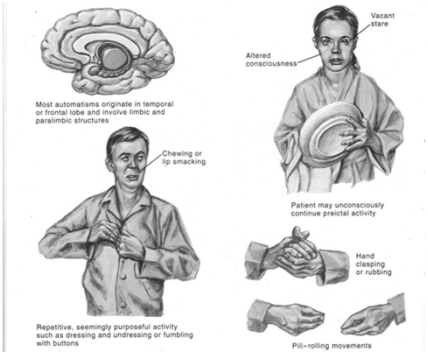


"Simple"➔"Complex" Partial ➔Generalized Sz

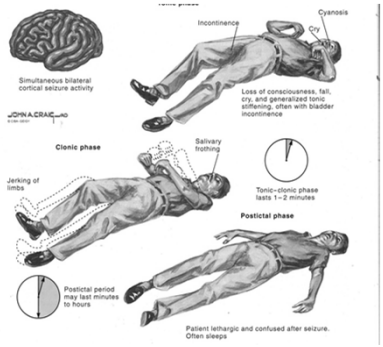


Automatisms

(Nonpurposeful, stereotyped, repetitive behaviors)

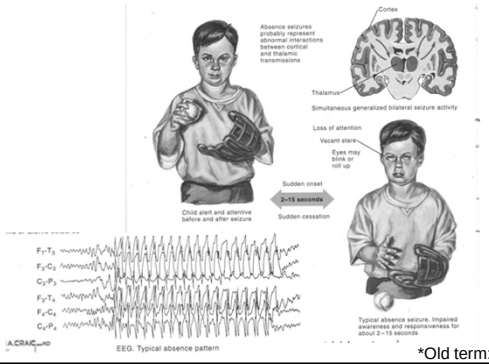


Generalized: Tonic-Clonic



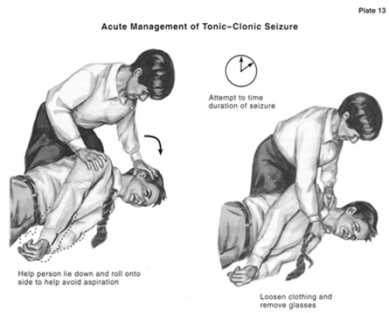
*Old term: Grand Mal

Generalized: Absence Sz*

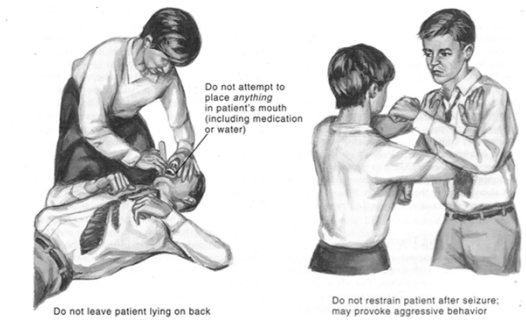


*Old term: Petit Mal

DO



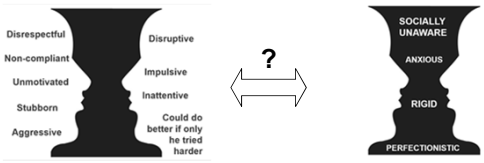
DONT



Distinguishing Sz from ASD

- **Motor movements**
  - **Rhythmic; slower than stereotypies?**
  - **Semi-purposeful (at times)**
- **△LOC? (at times)**
- **Clear onset & “offset” (at times)**
  - **Premonitory “aura”? (at times)**
  - **Post-event lethargy? (at times)**

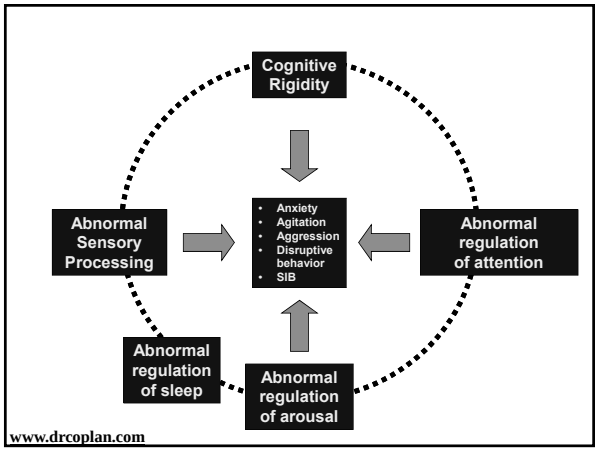
Summary: Seeing the Vase

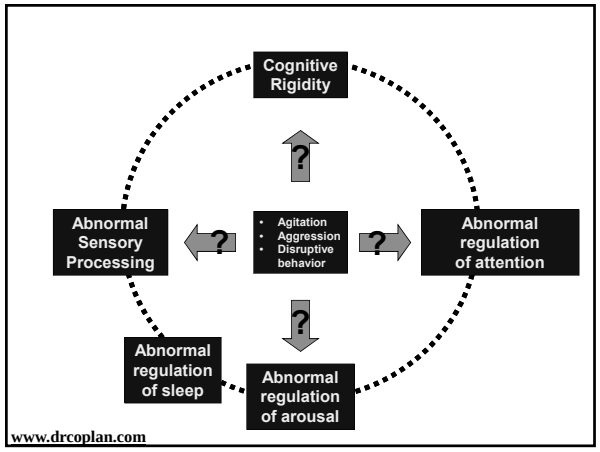


Many behaviors can be seen more than one way

Summary: Biological Drivers of Behavior

- Cognitive Rigidity
  - Anxiety, Perfectionism
- Dysregulation of Attention
  - Perseveration ↔ Inattention
- Dysregulation of arousal & mood
  - Hypervigilance / Irritability / "hyperactivity" / (grandiosity) ↔ Lethargy / depression
- Dysregulation of sensory perception
  - Sensory avoidance ↔ Sensory-seeking
- Tics
- Compulsions
- Seizures (usually with ↓ LOC)





Summary: Biological drivers of behavior

- **Most are strongly genetic**
  - Parent(s) often have issues
    - **Atypicality / ASD**
    - **Anxiety D/O**
    - **ADHD**
    - **Depression**
    - **Mood D/O**
  - Family Dysfunction
  - Siblings

Summary

- **Assessment**
  - FBA, *plus*……
  - Psych Testing including measures of emotional function & atypicality (BASC, Achenbach, etc.)
  - Family function (Social Worker, Counselor)
- **Intervention**
  - Address internalizing behaviors
  - "Impedes progress" > "Academic Failure"
  - Family-centered intervention
  - Medication
  - Monitor progress/ Interdisciplinary Team

Thank you!