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.
Basic premises

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

Disrespectful
Non-compliant
Unmotivated
Stubborn
Aggressive

Disruptive
Impulsive
Inattentive
Could do better if only he tried harder

ASD:
- SOCIAL\_UNAWARE
- ANXIOUS
- RIGID
- PERFECTIONISTIC

We are prone to dichotomizing....

Voluntary
("He’s doing that on purpose.")

Involuntary*
("He can’t help it.")

But life is more complex than that

Voluntary

Involuntary

www.drcoplan.com

www.drcoplan.com
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

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

• 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.
When is behavior not “behavioral”?

© James Coplan, MD

Outline

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

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

Impaired Socialization

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- “Withdrawn”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

Idiosyncratic Language

- Echolalia
- Delayed Echolalia
- Pronoun Reversal
- Odd inflection
Repititious Behaviors
- Rigid Routines
- Stereotypies
- Lining up / spinning objects

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

Kanner, 1938 → 1943
- Gradual improvement in early childhood
  - Social skills
  - Language
  - Cognitive rigidity
  - Sensory Aversions

“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....”

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

www.drcoplan.com

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

www.drcoplan.com

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]
When is behavior not “behavioral”?
© James Coplan, MD

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

Leo Kanner

Jules Hopkins: University School of Medicine
Copyright © 1971 by Scripta Publishing Corporation.

• 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)

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://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

Lorna Wing

7 October 1928 – 6 June 2014

“Asperger Syndrome” - 1981

Image © Tina Norris, www.tinanorris.co.uk

Uta Frith: “Asperger and his syndrome”

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

“….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…. “
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
  – Hypoveral (Kanner) vs. Hyperverbal & pedantic (AS)
  – “Aloof & withdrawn” (Kanner) vs. “Active but odd” (AS)

Asperger’s Disorder will be Back[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

“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

Jim Croce

“I made water”
When is behavior not “behavioral”?
© James Coplan, MD

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

1 - Social Interaction
“Our child is among us, but not with us.”
Parent of a 4 year old with ASD

www.drcoplan.com

<table>
<thead>
<tr>
<th>Clinical Domain ↓</th>
<th>Decreasing Atypicality / Increasing Age ⇒</th>
<th>Severe / Youngest</th>
<th>Moderate / Older</th>
<th>Mild / Older</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Social Interaction</td>
<td></td>
<td>No eye contact</td>
<td>Intermittent eye contact</td>
<td>Good eye contact</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No physical affection</td>
<td>Seeks affection “on his own terms”</td>
<td>Shows interest in others, but often does not know how to join in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cannot be engaged in imitative tasks</td>
<td>May invade personal space of others (not true affection)</td>
<td>Easily engaged in imitative activities</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Engageable in imitative tasks, although with difficulty</td>
<td>Rigid; has difficulty if perceives that rules have been broken</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Difficulty with “Theory of Mind” tasks</td>
</tr>
</tbody>
</table>

www.drcoplan.com
When is behavior not “behavioral”?

© James Coplan, MD

Texas ESC Region 8
August 3, 2015

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

How does the boy feel?
Why?

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?

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
When is behavior not “behavioral”?
© James Coplan, MD

2 - Language

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

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.

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.”

www.drcoplan.com
info@drcoplan.com
When is behavior not “behavioral”?

© James Coplan, MD

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

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

Cognitive Rigidity: Changes in Routine / Unmet Expectations

Rainman, 1988

When is behavior not “behavioral”?
© James Coplan, MD

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

Underlying Neuropsychological Traits
- ♦ Theory of Mind
- ♦ Central Coherence

Persons with ASD: Great at seeing details...

“Where are 8, 9, and 10?”

When is behavior not “behavioral”?
© James Coplan, MD

What's happening in this picture?

Not so good at seeing the big 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?

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

- Cognitive Rigidity
- Abnormal regulation of attention
- Abnormal regulation of sleep
- Abnormal sensory processing

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!

Abnormal regulation of arousal
Abnormal regulation of attention
Abnormal regulation of sleep
Abnormal Sensory Processing
Routines Fixed Expectations

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
When is behavior not “behavioral”?

© James Coplan, MD

Texas ESC Region 8
August 3, 2015

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

www.drcoplan.com
info@drcoplan.com

Cognitive Rigidity
(Difficulty shifting mental sets)

“Externalizing Behaviors”
- Insistently repetitious behavior
- Difficulty with unmet expectations
- Perfectionism
- Compulsions
- (Aggression, SIB)

“Internalizing Behaviors”
- Perfectionism
- Obsessions
- (Anxiety / Depression)

Unaddressed internalizing behavior often comes out as externalizing behavior

www.drcoplan.com

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.”

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.

Sean
10 y.o. boy w. prior Dx of ADHD

• History:
  – Inconsistent eye contact
  – “No social filters”
  – “Precocious interests”
  – Sensory aversions
  – Behavioral deterioration on stimulants

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

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

Revised Dx
• Asperger Syndrome
• Anxiety Disorder
  – OCD

Compulsions
JF: 15 y.o. boy Asperger Syndrome
When is behavior not “behavioral”?

© James Coplan, MD

Texas ESC Region 8
August 3, 2015

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

Anxiety

MRN: 10-0042

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

Anxiety

MRN: 07-0427

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

R.D. MRN 07-0427

Anxiety

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

Anxiety

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

“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, 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

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

Depression
KO; 10 yr old female, PDD-NOS, normal IQ

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

www.drcoplan.com

www.drcoplan.com

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

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

www.drcoplan.com

When is behavior not “behavioral”?

© James Coplan, MD

Texas ESC Region 8
August 3, 2015

I. B. MRN 06-0256

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

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

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

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

IB: 9 y.o. girl with ASD (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

info@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?**

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.
When is behavior not “behavioral”? © James Coplan, MD

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

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/pi.root.regs.preamble2.assemble2.p.2766

This site was created to provide a “one-stop shop” for resources related to IDEA and its implementing regulations...

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

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

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.
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
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

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

MRN 05-0194
"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)...."

"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...."

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
  - SSRIs
  - 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

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

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
When is behavior not “behavioral”?

© James Coplan, MD

Texas ESC Region 8

August 3, 2015

www.drcoplan.com

info@drcoplan.com

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)...

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.”

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.

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.”

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
### Seeing the vase
(Recognizing internalizing behavior as the driver of externalizing behavior)

<table>
<thead>
<tr>
<th>Antecedents (what happens before behavior or concern)</th>
<th>Consequences to Maintaining Behavior of Concern (What happens as a result of the behavior?)</th>
<th>Perceived Function of the Behavior of Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiousness, Perfectionism, Fear of Failure</td>
<td>Temporary reduction in anxiety via task avoidance</td>
<td>Avoidance of self-blame for not completing the task perfectly</td>
</tr>
</tbody>
</table>

### 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

### 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**

www.drcoplan.com
Visual Schedules

Positive Behavior Support Plan for Internalizing Behavior
- Staff Awareness
- FBA for internalizing behavior
- Visual Schedules
  - What am I supposed to be doing now?
  - What am I supposed to do next?
- Relaxation Techniques
  - Mental Imagery
  - Isometrics / Deep Breathing
  - “Break k” cards
  - Self-awareness / self-esteem
- Cognitive Behavioral Therapy
- SSRIs

Abolishing Operations

The Incredible 5-Point Scale

Knowledge is Power
Sir Francis Bacon

Self-esteem, self-esteem, self-esteem
Jim Coplan
When is behavior not “behavioral”? © James Coplan, MD

What it is to be Me!
An Asperger Kid Book

Written by Angela wine
Illustrations by David Cray

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 good 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.
Sometimes the sounds hurt my ears and make me scared.

I can hear like a superhero.
Covering my ears makes me feel better.

I am a friendly boy...

I like to talk about my favorite things...

...but sometimes I stand too close.
...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!
When is behavior not “behavioral”?
© James Coplan, MD

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.

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.
When is behavior not “behavioral”?

© James Coplan, MD

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

<table>
<thead>
<tr>
<th>Question</th>
<th>% of Chance</th>
<th>% of Risk</th>
<th>% of Reward</th>
<th>% of Fear</th>
<th>% of Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the very best thing that might happen?</td>
<td>___________</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>What is the worst thing that might happen?</td>
<td>___________</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>What is a bad thing that might happen but not the worst?</td>
<td>___________</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>What is a good thing that might happen (not best or worst)?</td>
<td>___________</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>What is a better thing than the least?</td>
<td>___________</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
</tbody>
</table>

© James Coplan, 2014

Motivating Operations
Motivating Operations (MO) https://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) https://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)
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

Typical FBA

**Antecedent (task demand)**

**Behavior:** Tantrums & Eloping

**Presumed Fn:** Escape from Task

**Consequences**

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

FBA for Internalizing Behavior

**Antecedent (task demand)**

**Behavior:** Tantrums & Eloping

**Presumed Function:** Escape self-punishment

**Consequences**

- “I can’t do it perfectly!”
- Agitation
- SIB / “task avoidance” / inability to let go

**Abolishing Operations**

- *Mistakes are OK*
- *I will not die*
- *I can try again next time.*

FBA for Internalizing Behavior

**Antecedent (task demand)**

**Behavior:** Tantrums & Eloping

**Presumed Function:** Escape self-punishment

**Consequences**

- Put task refusal on extinction
- Overcorrection
- Token economy
- Aversives
- “Contracting”
- First / Then (“Premack”)
Positive Behavior Support Plan for Internalizing Behavior

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

Positive Behavior Support Plan for Internalizing Behavior

Serotonin (5 HT)

- Hypothalamus
- Thalamus
- Limbic System
- Amygdala
- Cerebellum
- Thalamus
- Frontal Cortex

Serotonin (5 HT) Pathways

- Stahl, Essential Psychopharmacology, fig 5-2-3

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

SSRIs in ASDs

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

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.”
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

Anxiety

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

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

Anxiety after Rx with CBT & Escitalopram

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

Anxiety

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

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.
When is behavior not “behavioral”?

© James Coplan, MD

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 SSRIs 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 multiple 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

Abnormal Regulation of Attention - 1

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

Perseveration
Perseveration

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

Perseveration

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

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

Obsessive Interests & Perseveration

“We are going into the Grand Hyatt!”

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

Obsessive Interests & Perseveration

“We went to the Jersey Shore.”

WW; 12 y.o. boy w. AS
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

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

14 y.o. male with AS
MRN 06.0345
Perseveration

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

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

Bender-Gestalt II sample cards

Perseveration / Over-stimulation

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

Perseveration / Depression

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

Abnormal Regulation of Attention (Perseveration)

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

Abnormal regulation of attention
  Rigid + Perseverative

SSRIs

Agitation
  Abnormal regulation of sleep

Abnormal Sensory Processing
  Abnormal regulation of arousal

Cognitive Rigidity
  Related Stereotypies

www.drcoplan.com

www.drcoplan.com
Abnormal Regulation of Attention - 2

- Inattention
  - Inability to focus
  - Impulsive
  - Distractible

Inattention

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

Noradrenergic pathways

Noradrenergic pathways
(Norepinephrine)

Stahl, Essential Psychopharmacology, fig 5.25

Stahl, Essential Psychopharmacology, fig 5.25
When is behavior not “behavioral”?

© James Coplan, MD

Stahl, Essential Psychopharmacology, fig 12.1

Stimulants
(Dopaminergic; Noradrenergic; Sympathomimetic)

Stimulants

Benefits
- Attention Span
- Self-regulation

Side Effects
- Perseveration
- Cognitive Rigidity
- Agitation
- Disruptive behavior
- Appetite, growth
- Sleep

Stimulants, NRI’s

Alpha-2 agonists
(clonidine, guanfacine)

Locus ceruleus

www.drcoplan.com
When is behavior not “behavioral”? © James Coplan, MD

**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**

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Brand Name(s)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clonidine</td>
<td>Catapres</td>
<td></td>
</tr>
<tr>
<td>Guanfacine</td>
<td>Tenex, Intuniv</td>
<td>More sedating than guanfacine</td>
</tr>
</tbody>
</table>

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

**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”

**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 & Relaxed
  - “Red Alert”
  - Adrenaline
  - Heart Rate
  - Resp. Rate
  - Combative

- Calm: Fight or Flight Response
- “Red Alert”

**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.”

**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 emotion... just flips... we’re walking on eggshells”

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

Michael H
MRN 10-0703
When is behavior not “behavioral”?

© James Coplan, MD

Abnormal regulation of arousal
- Perseveration
- Inattention

Cognitive Rigidity

Abnormal regulation of attention
- (Perseveration)
- (Inattention)

Abnormal regulation of sleep
- Hypo-arousal
- Hyper-arousal

Routines
- Stereotypies
- Agitation
- Aggression
- SIB
- Impulsivity
- Hyperactivity

Atypical neuroleptics
- \(\alpha\)-2 agonists
- GABA-ergic drugs

Rigid + Perseverative
Impulsive + Agitated / Disruptive

Dopamine

(Dopaminergic; Noradrenergic; Sympathomimetic)

Atypical Neuroleptics

Benefits
- \(\uparrow\) Arousal Level
- \(\uparrow\) Self-regulation

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

Comment
- Relatively less risk of weight gain
- FDA approved for Rx of ASD
- Bone marrow suppression
- Greater risk of weight gain
- Greater sedation
- Greater risk of weight gain
- FDA approved for Rx of ASD
- Relatively less risk of weight gain

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

Nestler, Molecular Neuropharmacology, Fig 8.6

www.drcoplan.com

Atypical Neuroleptics

Generic Name
- Aripiprazole
- Clozapine
- Olanzapine
- Quetiapine
- Risperidone
- Ziprazidone

Brand Name
- Abilify
- Clozaril
- Zyprexa
- Seroquel
- Risperdal
- Geodon

Comment
- Relatively less risk of weight gain
- Relatively less risk of weight gain
- FDA approved for Rx of ASD
- Bone marrow suppression
- Greater risk of weight gain
- Relatively less risk of weight gain

www.drcoplan.com
Regulation of Sleep - 1

- Melatonin
  - Brain hormone
  - Metabolic rate (Heart, Temp)
  - “You’re sleepy now”
- Suppressed by light
  - 24 hr cycle
  - Seasonal cycle

Regulation of Sleep - 2

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

Regulation of Sleep - 3

- Shared genetic control
  - Regulation of sleep
  - Regulation of arousal
- Family history of sleep disorder
Sensory Processing

- Subjective Properties
  - Familiar / Unfamiliar
  - Pleasant / Unpleasant
  - Strong / Weak
  - Internal / External

- Sensory Input ➔ Self-awareness
- Mirror Neurons ➔ Empathy


Quantifying severity of ASD - 4

<table>
<thead>
<tr>
<th>Clinical Domain</th>
<th>Decreasing Atypicality / Increasing Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensory Input</td>
<td>Severe / Youngest</td>
</tr>
<tr>
<td>Sensory Motor</td>
<td>Moderate / Older</td>
</tr>
<tr>
<td>Sensory Motor</td>
<td>Mild / Older</td>
</tr>
</tbody>
</table>

- Auditory: Hyperacusis, covers ears, acts deaf
- Visual: Self-stimulation (lights/patterns); looks at objects from odd angles
- Tactile: rubbing, licking, stroking, deep pressure; aversive to light touch
- Olfactory: Sniffing
- Extreme food selectivity:
  - #Pain threshold
  - Fears: Heightened / blunted

Same, but diminishing intensity

When is behavior not “behavioral”?
© James Coplan, MD

Abnormal regulation of arousal

Abnormal regulation of attention

- (Perseveration)
- (Inattention)

Cognitive Rigidity

Abnormal regulation of sleep

Abnormal Sensory Processing

- Sensory Threshold
- Sensory Overload

Sensory Dysfunction

Disordered Sleep

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?

“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


Visible features

Underlying Neuropsychological Traits

Figure 2.2: Stimulus faced of Andrew Meltzoff and a young macaque.

www.drcoplan.com
info@drcoplan.com

Page 49
"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
- Cognitive Rigidity
- Impaired regulation of arousal & mood
- Impaired mirror neuron function

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

---

- “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?*

- Primary failure to develop ToM & CC
- Loss of previously acquired ToM & CC

- Autism Spectrum Disorder
- Schizophrenia Spectrum Disorder

- BIRTH
- ADOLESCENCE

---

The whole is greater than the sum of its parts

*Max Wertheimer*
Outline

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

Gilles de la Tourette

Georges Gilles de la Tourette

Born: 5 October 1857
Saint-Étienne-du-Temple, France

Died: 25 May 1904 (aged 46)
Levens, Bordeaux

1884: Maladie des tics
When is behavior not “behavioral”?
© James Coplan, MD

Texas ESC Region 8
August 3, 2015

TS – Operational Definition

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://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

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
When is behavior not “behavioral”?


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

Tourette’s Syndrome: A Primer for School Leaders
The symptoms of Tourette’s syndrome affect students academically as well as socially.
By Steven P. Shaw, Amelia H. Woo, and Sharita Valo

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?

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

http://www.tsa-usa.org/
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 (ΔLOC)
   • May progress to generalized seizures

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

Focal (“Partial”) Onset
   • Motor
   • Sensory
   • Autonomic
   • Psychic

Generalized Onset
   • Absence
   • Typical
   • Atypical
   • Myoclonic
   • Tonic
   • Tonic-Clonic
   • Atonic

*Δ LOC = change in Level of Consciousness
**Older terms: Temporal lobe or Psychomotor seizures
When is behavior not “behavioral”?  

© James Coplan, MD

www.drcoplan.com  
info@drcoplan.com

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!