

Cognitive Rigidity and Atypicality: When it's more than ADHD

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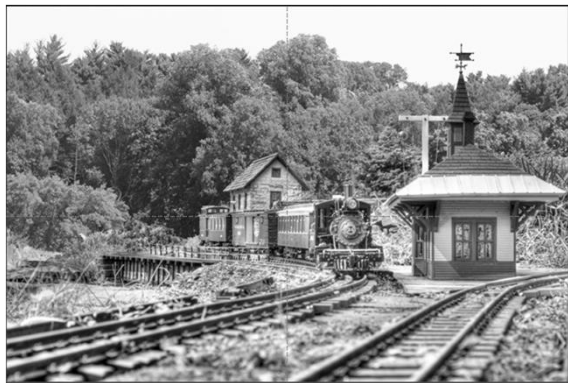
CHADD
November 12, 2011

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 treatments



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Case 1

CR is a four year old boy who presents to his primary care physician with parental concerns regarding "hyperactivity and tantrums." The parents indicate that CR has always been a "high energy" child. He has been in pre-K for about 3 months; his teachers report "impulsivity and difficulty maintaining focus," problems with task completion, and frequent temper tantrums.

Case 1

History: CR was conceived to a 29 y.o. G0 mother. Born at 35 weeks by vertex, vaginal delivery after PROM, BW 5 lb, discharged at 3 days of age. No postnatal issues. He is functioning at age level for language, self-care, gross- and fine-motor, and academic skills. His parents and a 2 year old sister are in good health. Family history is negative. **Social history:** Parents have been married for 6 years; both are employed.

Case 1

Examination
An alert, extremely active preschool child, with normal growth parameters, and PE. No dysmorphic features or focal neurological abnormalities. He speaks in full sentences, and seems to be of normal general intelligence.

Case 1

Medical Decision-Making

CR's primary care physician makes a diagnosis of ADHD, based on the history of impulsivity and normal general intelligence and academic abilities, and prescribes amphetamine / dextroamphetamine tablets (Adderall®)

Case 1

Outcome

Within 48 hours, CR becomes extremely agitated, and experiences an uncontrollable "meltdown" because he cannot have access to an anticipated Christmas present, before Christmas arrives (in 2 weeks). He presents to the local ER, completely out of control, yelling, screaming, biting, and hitting.

Case 1

Examination (ER)

An alert, agitated, hyperventilating preschool child.
BP 100/70; P 100, HR 100
Skin is warm and moist
Pupils moderately dilated, but reactive to light & accommodation
No focal findings on Neuro exam.
Patient insistently and repeatedly demands immediate access to his much-anticipated gift. Over the course of an hour, he gradually calms down.

Case 1

Medical Decision-Making

The patient is discharged from the ER; the parents are advised to see their PCP for referral to a mental health specialist (YOU).

What information would you like?

Case 1

Language: CR spoke single words at 12 months, 2-word phrases at 18 months, and full sentences by 24 months. He has a "broad vocabulary," and converses well with adults. He has a strong interest in septic systems and automobile transitions, and talks about these subjects incessantly.

Case 1

Behavior: CR can be very "strong-willed." He becomes angry if things do not work out the way he wants them to. He is very aware of routines, and becomes upset if they are changed. He has difficulty with transitions.

Case 1

Social: Over the past 24 months, his parents have become increasingly aware of CR's difficulty socializing with other children. He will either disregard them, or attempt to dominate them, directing their play. Eye contact is good. He sometimes invades the personal space of others.

Case 1

Sensory-Motor: CR has food selectivity, limited to only about 10 things in his diet. He will refuse chicken nuggets if they have grill marks on them, for example. At the same time, however he eats nonfood objects such as facial tissues, and dog food. He has no fear, and will run away from his parents in the mall or on the playground.

Case 1

School report: "friendly and extremely intelligent... very high level of energy... difficult to get eye contact... children tend to 'pull away' from him... plays alone... he is very imaginative in his play, and will make his own 'little world'... gets 'one idea' in his mind and will get obsessive about it for long periods of time."

Case 1

Examination

An alert, active preschool child.

PE is normal

No focal neurological findings.

Subtle manneristic tensing of the body when excited.

Case 1

Cognitive-Behavioral Assessment

Mental Status:

•Eye contact: Good.

•Cooperation: Variable

•Attention span: Physical impulsivity, accompanied by verbal perseveration on automobile transmissions

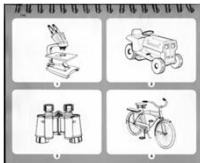
"The tracks got all apart... This could be a problem here!... We got a problem again. I'm going to get some help from the police... This is automatic... its got 4-wheel-drive so I can go on the grass."

Case 1

• **Vocabulary (PPVT-L): 5 yr 8 mo (SS 116).**

– Insists on naming all 4 pictures on each page ("stimulus driven").

– Perseverates on transmissions:



– "Is this tractor stick, or automatic?"

Case 1

- Gesell cube constructions and figure drawings: 3 ½ year level.
- Awkward crayon grip
- Difficulty imitating praxic finger gestures

Case 1

Difficulty with Theory of Mind and Central Coherence



Q: "Who is she?"
A: "An old lady....a grandmother."
Q: "Who sent her that letter?"
A: "The postman"
Q: "No, I mean who wrote the letter?"
A: "I don't know."

Case 1

Diagnoses

1. Asperger Syndrome
2. ADHD

Case 1

Recommendations

- Language therapy (pragmatics)
- Social Skills
- Occupational Therapy
- Behavior Management
 - Cognitive rigidity
 - Anxiety
 - Disruptive Behavior
- Medication?

Case 1

Recommendations

- Language therapy (pragmatics)
- Social Skills

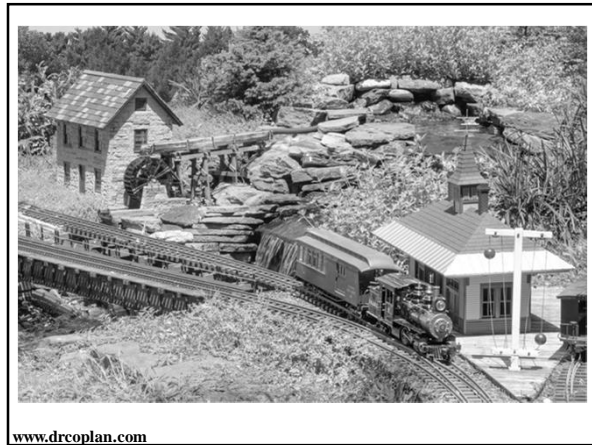
Case 1

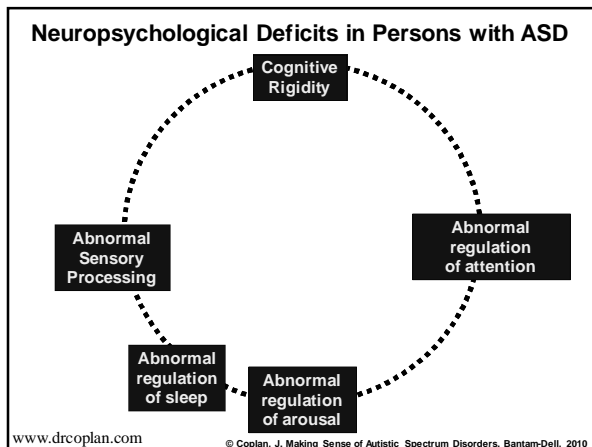
- Behavior Management
 - Cognitive rigidity
 - Visual Schedules
 - Advance preparation for change
 - Anxiety
 - The Incredible 5-Point Scale (or similar)
 - Fidget toys, isometric exercise, mental imagery, CBT
 - Disruptive Behavior
 - Token Economy

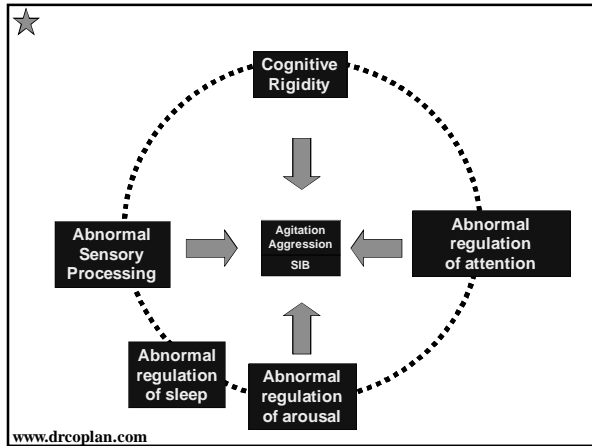
Case 1

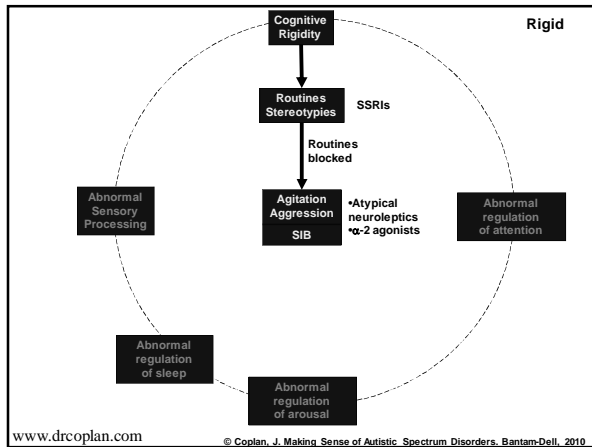
Medication?

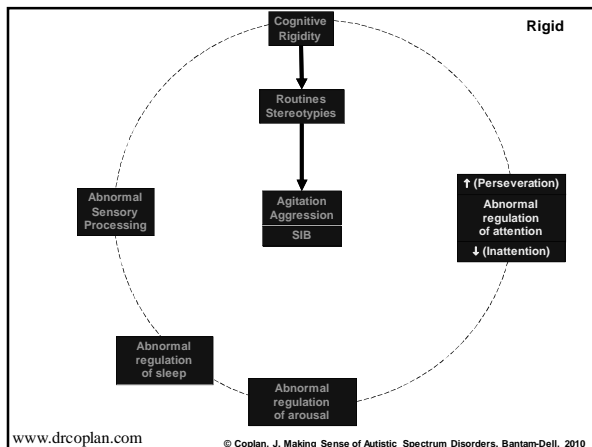
- Cognitive Rigidity
- Dysregulation of Attention
- Dysregulation of Arousal

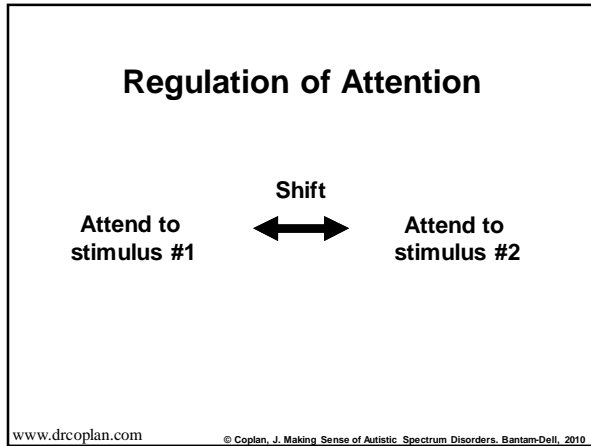








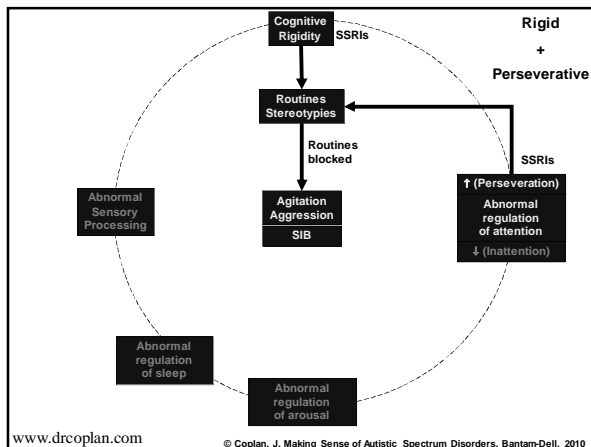


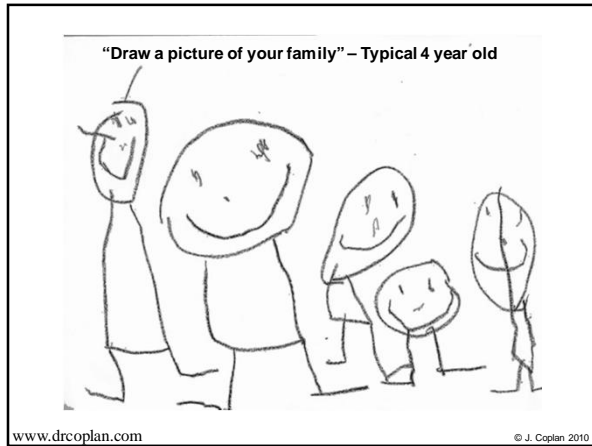


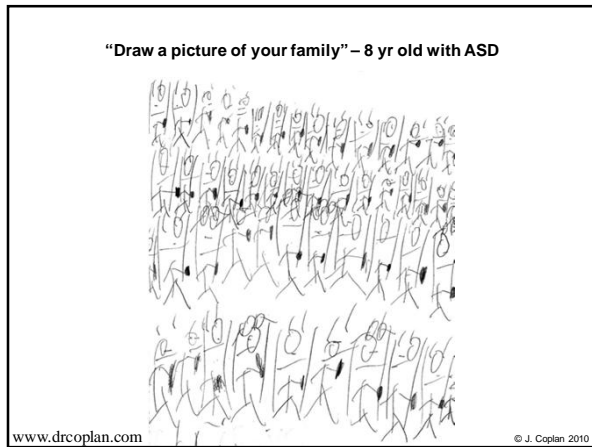
Abnormal Regulation of Attention - 1

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

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**Abnormal Regulation of Attention
(Perseveration)**

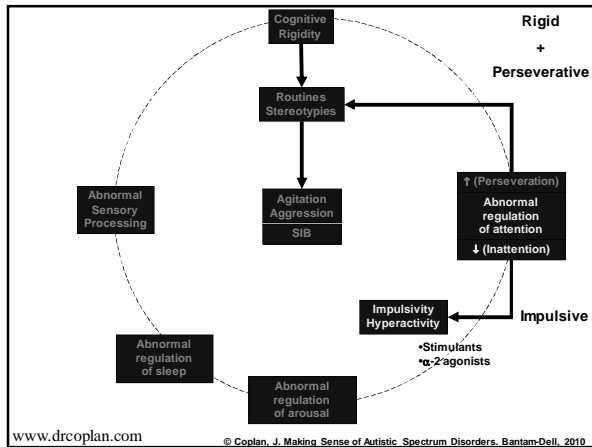
- **Interventions**
 - Verbal preparation for transitions
 - Visual Schedules
 - SSRIs

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Abnormal Regulation of Attention - 2

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

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Inattention

- **Interventions**
 - Limited stimuli
 - Short work periods
 - Stimulants, alpha-2 agonists
 - Stimulants → ↑ Cognitive Rigidity
 - Try guanfacine first, OR
 - Start an SSRI, then add stimulant

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Inattention

- **Beware of anxiety or perseveration masquerading as inattention**
 - Perseveration on inner stimuli: “Inattentive”
 - Perfectionism: “Problems w. task completion”
 - Anxiety: “Rushes through work”

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