

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

Some "Problem Behaviors" in children with ASD

- Lack of initiative or persistence
- Inattention
- Hyperfocus
- Task Avoidance
- Noncompliance
- Verbal Aggression
- Physical Aggression
- Self-Injurious Behavior

Some "Problem Behaviors" in children with ASD

- Lack of initiative or persistence
- Inattention
- Hyperfocus

Executive Function: "Go / No-Go"

- Task Avoidance
- Noncompliance
- Verbal Aggression
- Physical Aggression
- Self-Injurious Behavior

Basic Premises

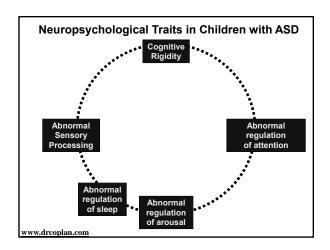
 Behaviors or internal states may be biologically driven, socially driven, or both

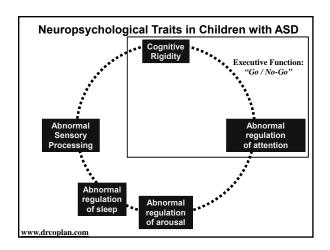
Basic Premises

- Biologically driven behaviors / states
 - Often occur irrespective of environmental contingencies
 - Do not necessarily serve a social function
 - May be outwardly visible, or may occur as internal neurobiological states
 - Specific behaviors / states are linked to specific brain regions and neurotransmitters

Basic Premises

- Biologically driven behaviors or internal states: Examples
 - Hunger / Satiety
 - Fear
 - Arousal
 - Anxiety
 - Depression
 - Complex behaviors (Tics, Compulsions)





Basic Premises

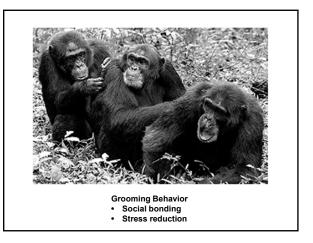
- Socially driven behaviors / states
 - Occur in response to environmental contingencies
 - May or may not be externally visible
 - Ex: Sadness vs. crying
 - Serve a social function
 - Attention
 - · Access to desired objects or activities
 - Escape from undesired activities
 - · And many others....

Basic Premises

- Biologically Driven and Socially Driven systems interact
 - Ex: Task mastery takes longer in children with biologically based developmental delay, affording them with more opportunities to discover that tantrums or SIB are great ways to escape from tasks

Basic Premises

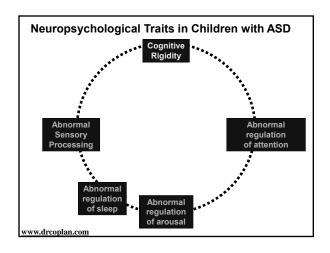
 Either the cause or the function of the behavior (or both) may be a mix of biological and social factors

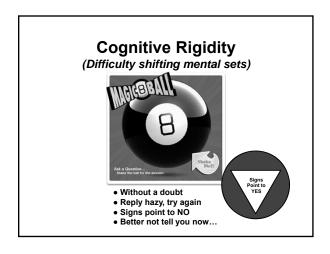


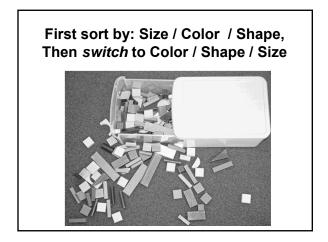
| Forms & Drivers of Behavior | | | | | |
|-----------------------------|---|---|--|--|--|
| Form→ Driver → | Internal State | External Behavior | | | |
| Biological | Hunger, Thirst, Satiety Fear Arousal Pleasure Pain Anxiety Depression Obsessions Etc. | Hyperventilation Diaphoresis (sweating) Piloerection (hair on end) Pupillary dilatation Goal-seeking (food, water, peer group; mate) Aggression, SIB Tics, Compulsions Etc. | | | |
| Social | Anxiety Arousal Fear Pleasure Happiness, Sadness Etc. | Attention-seeking Goal-seeking Task-avoidance Aggression, SIB Laughter, Crying Etc. | | | |

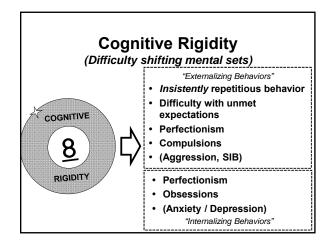
Basic Premises

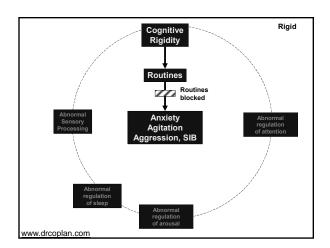
- Intervention
 - Should address:
 - Internal and externally visible behaviors / traits / states
 - Biological and social dimensions
 - May requires pharmacologic as well as behavioral measures







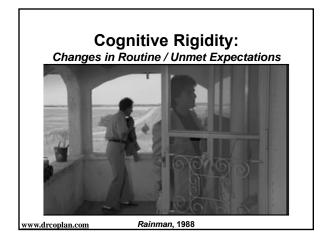


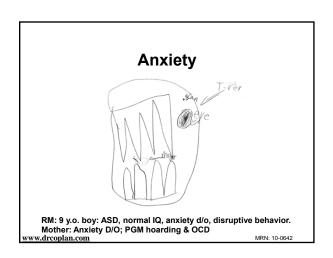


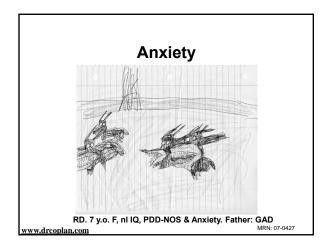
"Our son experiences extreme anxiety when what he anticipates isn't what happens...When we know a change is coming we can prepare him, but those we can't anticipate are still very upsetting for him...The switch flips in his mind, and it's out of his control."

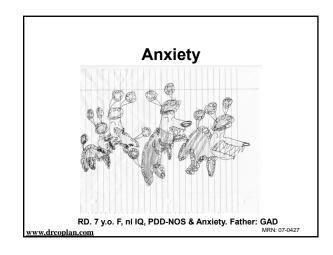
6 y.o. boy with ASD, anxiety, and normal nonverbal IQ

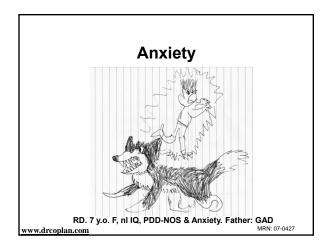
MRN 12-0782

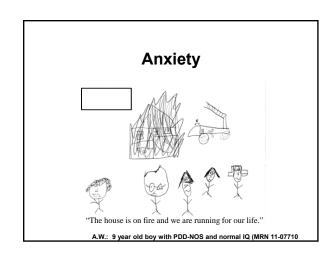


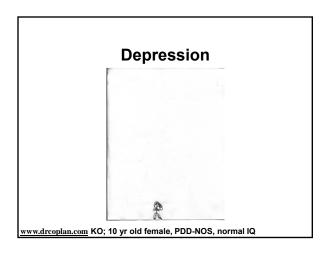


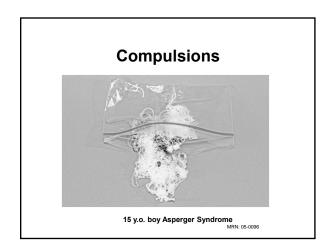












Perfectionism



Perfectionism



Perfectionism



Anxiety, Perfectionism, and Disruptive Behavior

B was cooperative and motivated to do well ... However, he became increasingly frustrated as the testing progressed... This resulted in a cycle where he repetitively vocalized his need to complete the task and then became angry and frustrated by the questions he was being asked. Even after he was told that he did not have to complete the task it took him about 15 minutes to accept this and leave the office with his mother.... 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 esccape a difficult task. When faced with tasks that he perceives as 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

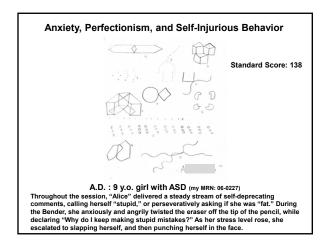
The Story of Billy's Box - 1 (or, why it's important to ID internalizing behavior)

- 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)

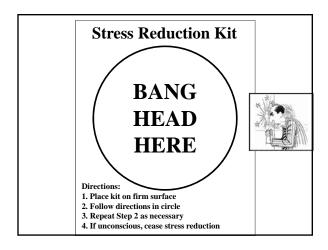
Q: "Billy - You're always getting in trouble at school. What's going on?"

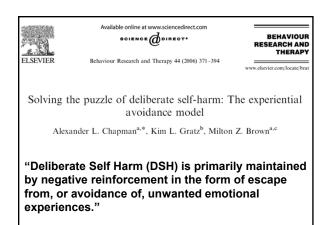
A: "I'm afraid that if I hand in my work, I'll never get a chance to go back and make it perfect."

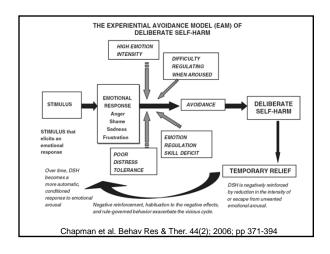


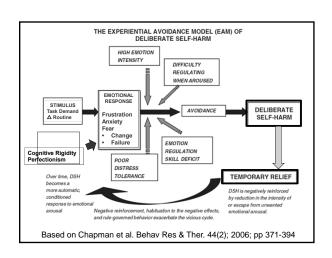
Pearl

 Self-Injurious Behavior reduces stress









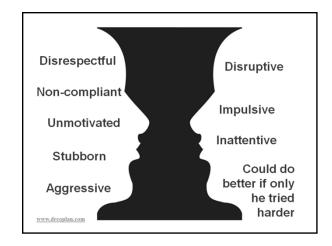
Pearl

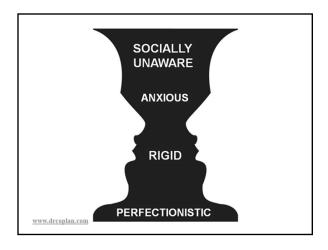
- It's not the task per se that the child is trying to escape; it's preemptive fear of failure
- What the child needs is a Positive Behavior Support Plan for internalizing behavior
 - What would that look like?

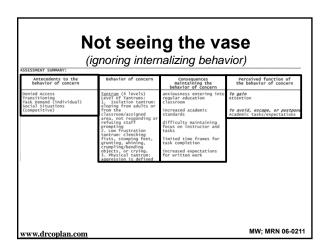
Positive Behavior Support Plan for Internalizing Behavior

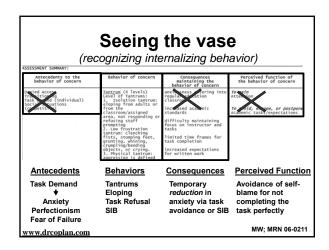
- Staff Awareness
- Visual Schedules
- · Verbal preparation
- Relaxation Techniques
- Cognitive Behavioral Therapy (CBT)
- SSRIS











Not seeing the vase

(ignoring internalizing behavior)

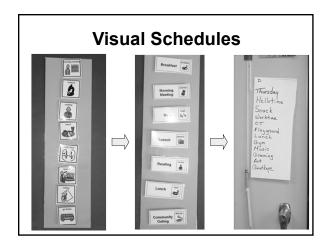
"We caution against the use of the word "stubborn" to characterize R's classroom behavior. R's task avoidance and non-adherence to teacher instruction reflect cognitive rigidity and anxiety, rather than "stubborn" behavior. Re-framing his actions will lead to more appropriate intervention, placing the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

RH; MRN: 11-0717; 7 y.o. male www.drcoplan.com ASD, Anxiety, Normal IQ

Positive Behavior Support Plan for Internalizing Behavior

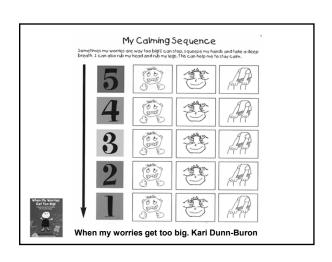
- Staff Awareness
- Visual Schedules
 - What am I supposed to be doing do now?
 - What am I supposed to do next?
 - What if there's a break in routine? ("oops" cards)
- Verbal Preparation
- Relaxation Techniques
- Cognitive Behavioral Therapy (CBT)
- SSRIs

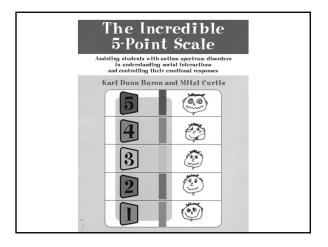
www.drcoplan.com

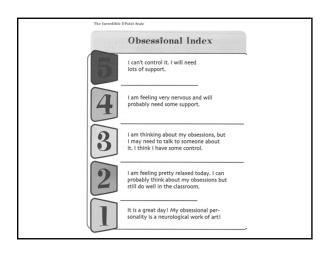


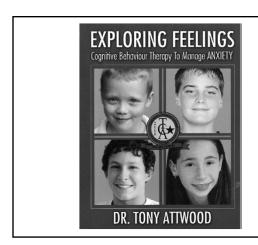
Positive Behavior Support Plan for Internalizing Behavior

- Staff Awareness
- Visual Schedules
- Verbal preparation
- Relaxation Techniques
 - Mental Imagery
 - Isometrics
 - Deep Breathing
 - "Break" cards
- Cognitive Behavioral Therapy (CBT)
- SSRIs











Positive Behavior Support Plan for Internalizing Behavior

- Staff Awareness
- Visual Schedules
- Verbal Preparation
- Relaxation Techniques
- Cognitive Behavioral Therapy (CBT)
- SSRIs

www.drcoplan.com

Selective Serotonin Reuptake Inhibitors • 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)

ww.drcoplan.com

Selective Serotonin Reuptake Inhibitors (SSRIs)

| Generic Name | Brand Name | | Comment | |
|-----------------|---------------|---|-------------------------|--|
| Fluoxetine | Prozac | • | The first selective SRI | |
| Fluvoxamine | Luvox | | | |
| Sertraline | Zoloft | • | May be less activating | |
| Citalopram | Celexa | • | Prolonged QT interval | |
| Escitalopram | Lexapro | | Prolonged QT interval | |
| And others | | | | |

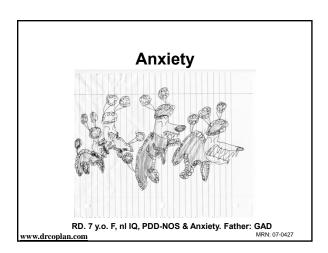
ww.drcoplan.com

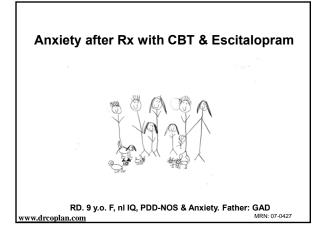
Pharmacotherapy for anxiety disorders in children and adolescents

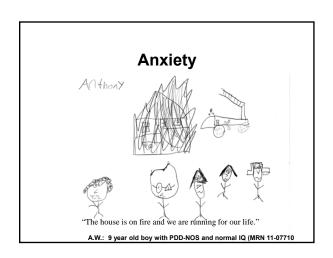
Ipser JC, Stein DJ, Hawkridge S, Hoppe L. Cochrane Database of Systematic Reviews 2009, Issue 3.

- Studies reviewed: 22 RCTs/ 2,519 participants

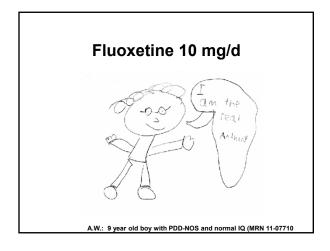
 - Studies reviewed: 22 KC is/ 2,519 participants
 Short-term (average 11 wks)
 Mean age 12 yrs
 Drugs studied (versus placebo)
 SSRIs: 15 (fluoxetine 6, fluvoxamine 2, paroxetine 3, sertraline 4)
 SNRIs: 5, (clomipramine 3), venlafaxine 2)
 Benzodiazepines: 2: (alprazolam 1, clonazepam 1)
 Tricyclic antidepressants: 1 (desipramine)
- Meta-analysis
 - o Response rate: Medication 59%; Placebo 31%
 - $\circ~$ 7.3% of subjects treated with SSRIs withdrew bec/o side effects
 - "The overwhelming majority of evidence of efficacy was for the SSRIs, with the most evidence in paediatric OCD"

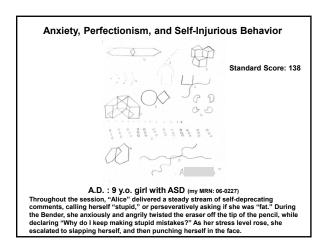






RETHINK 3/19/2014



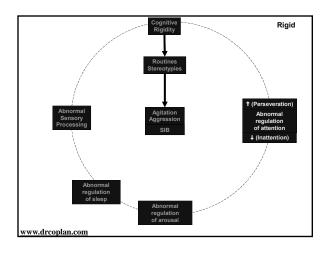


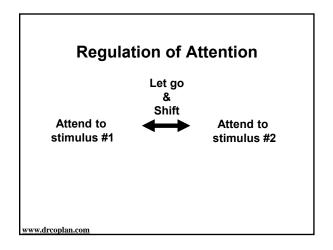
After one week on Sertraline

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, "redid" 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.

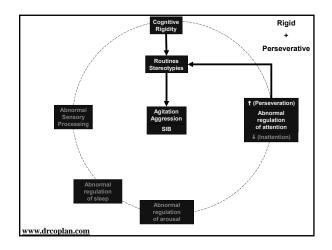
The Story of Billy's Box - 3 (or, why it's important to ID internalizing behavior) Billy's Box "Put your papers in the box, and we promise you will be able to go back later and work on them some more, if you want to."

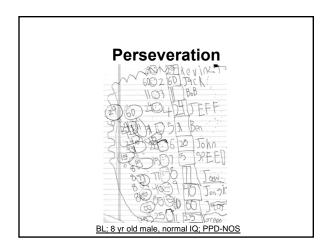


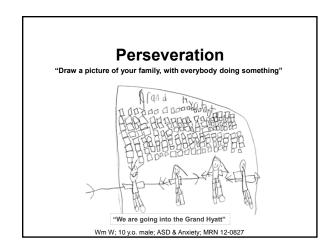


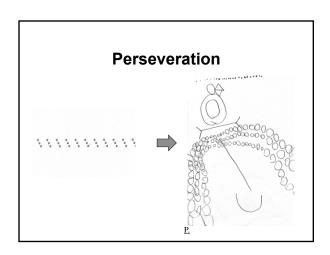
Abnormal Regulation of Attention - 1

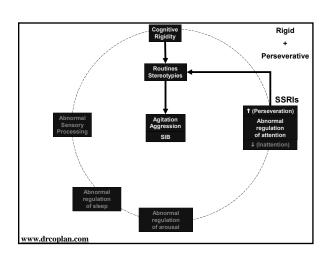
- Perseveration
 - Inability to "Let go and shift"
 - Gets "stuck"
 - "Overattention Deficit Disorder"
- Compounds the effects of cognitive rigidity







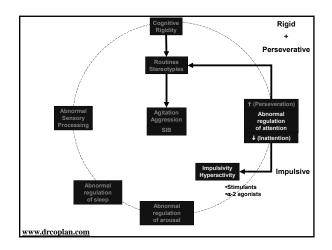


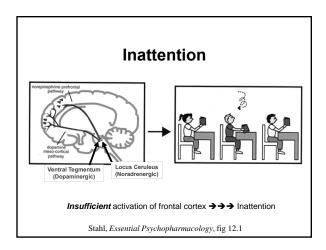


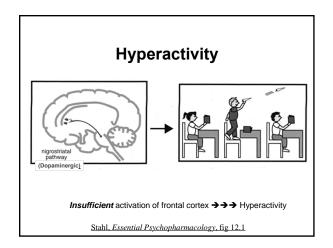
Abnormal Regulation of Attention - 2

- Inattention
 - Inability to focus
 - Impulsive
 - Distractible

www.drcoplan.com







Inattention

- Interventions
 - Limited stimuli
 - Short work periods
 - Medication
 - Stimulants
 - alpha-2 agonists

www.drcoplan.com

| 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 | | | |

3/19/2014

Stimulants, NRIs

Benefits

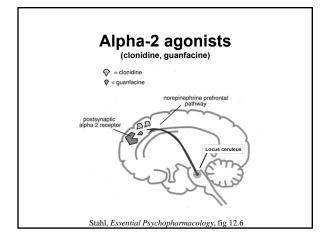
- ♠ Attention Span
- ₩ Hyperactivity
- Side Effects
- ◆ Appetite
- ◆ Anxiety
- ↑ Agitation
- · May "unmask" tics

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

www.drcoplan.com



Alpha-2 Agonists

Benefits

- ↑ Attention Span
- No exacerbation of anxiety / rigidity
- Used to treat tics

Side Effects

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

Alpha-2 Agonists

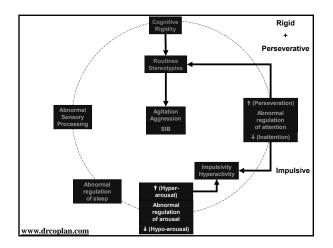
"It's buying him the split second before he reacts."

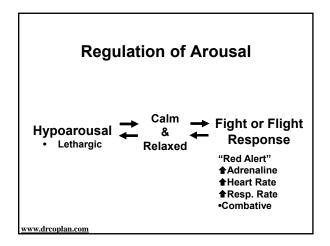
Parents of a child with ASD, agitation, anxiety, and cognitive rigidity after starting guanfacine.

(ML; MRN 13-0839)

Clinical Pearl

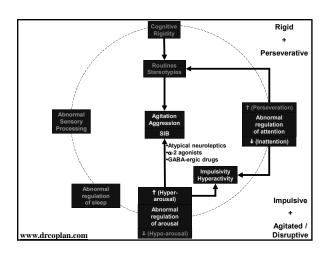
- Beware of Cognitive Rigidity masquerading as ADHD
 - Perseveration on inner stimuli: "Inattentive"
 - Perfectionism:
 - "Problems w. task completion"
 - (Or: Task avoidance!)
 - Anxiety:
 - "Rushes through work"
 - "Out of seat behavior"

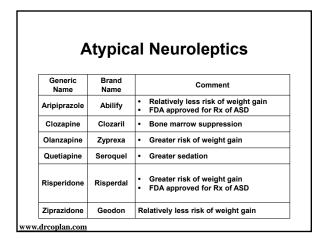


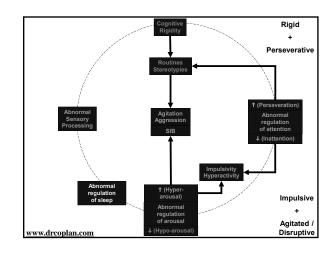


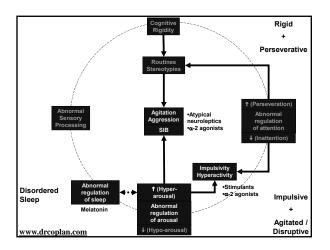
Dysregulation of Arousal & Mood

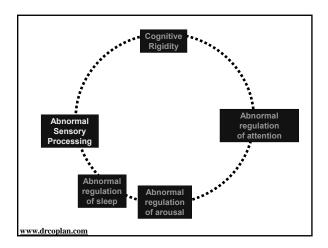
- "If he gets up on the wrong side of the bed we know it's going to be a bad day."
- "We feel like we're walking on eggs"









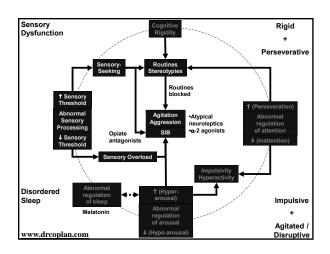


Sensory Processing

- 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

www.drcoplan.com



Sensory Dysfunction

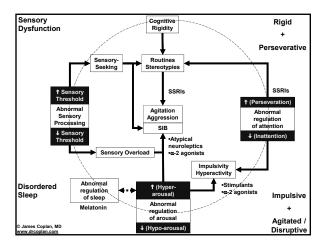
- Sensory-Seeking:
 - Chewy tube
 - Heavy work / Exercise
 - Weighted / compressive clothing
- Sensory avoidant
 - Ear-buds (noise cancelling
 - Verbal preparation (fire drills, e.g.)

The whole is greater than the sum of its parts

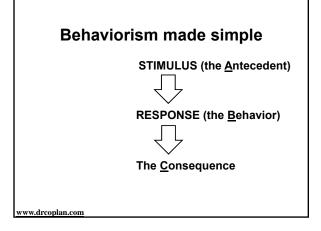
Max Wertheimer

www.drcoplan.com

RETHINK 3/19/2014

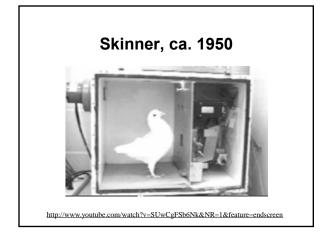


Behaviorism



Operant Conditioning

• Experimental manipulation of the consequences for a given behavior alters probability that that behavior will recur.



Consequences 1: Reinforcers

- Reinforcers lead to an increase in frequency of the antecedent behavior
 - Positive Reinforcement (adds something)
 - Attention
 - · Access to desired object / activity
 - Negative Reinforcement (removes something)
 - Escape from task
 - Removal of non-preferred food
- Advanced techniques: Chaining, Reverse Chaining, Fading, DRO, etc.

Consequences 2: Aversives

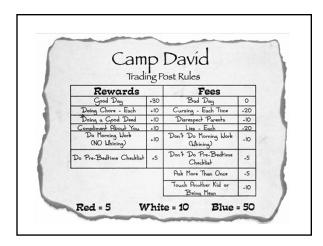
- Time Out
 - Only works if child values adult attention
- Logical Consequences
 - If child refuses to use toilet, child must carry backpack with spare clothes, when family is in public
- Over-correction
 - Must wash out soiled diaper
 - If the child spills milk on purpose: child must mop the entire kitchen floor

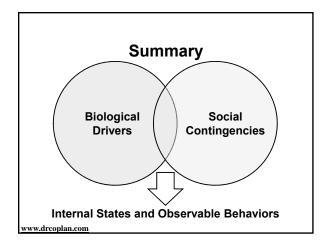
www.drcoplan.com

Token Economy: The next step beyond Time Out

- · Concretely specified behaviors
- Earn and Lose Points
- Points
 → Access to preferred items
 - Preferred toys, Computer time, etc.
 - NO access to preferred item at other times
 - "Extra" treats not as effective
- Works with children who understand rule-based play (CandyLand, Uno, etc.)

www.drcoplan.com





An ounce of prevention....

- Identify internalizing behaviors before they lead to externalizing behaviors
 - Behavior Management Plan that proactively seeks to avert or dissipate anxiety

Summary

- · Why this child?
 - What is this child's developmental Level?
 - Is this stage-appropriate behavior?
 - Does the behavior serve a social function?
 - · Escape, access, attention
 - Is the classroom placement appropriate?
 - Language level?
 - Does this behavior occur in other settings?
 - Family factors?
 - Parents consistent at home?
 - Parental psychopathology? (Anxiety, Depression, Alcohol)

Summary

- · Why this child?
 - Neuropsychological factors?
 - Cognitive Rigidity
 - Dysregulation of attention
 - Dysregulation of arousal
 - Sensory Seeking / Sensory Overload
- Behavioral Intervention Usually
- \triangle Classroom setting: Sometimes
- Family therapy: Sometimes
- Medication: Sometimes

