

***Maladaptive Behavior in Children on the Autism Spectrum: Looking Beneath the Surface in Order to Achieve Optimum Outcome***

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11/09/2012

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JAMES COPLAN, M.D. *Author and Speaker*  
Making Sense of Autistic Spectrum Disorders



Welcome

James Coplan, MD  
-Internationally recognized clinician, author, and public speaker in the fields of early child development, early language development and autistic spectrum disorders.



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News & Views



**naeyc**

November 9, 2012  
Dr. Coplan presents "Maladaptive Behavior in Children on the Autism Spectrum: Looking Beneath the Surface in Order to Achieve Optimum Outcome", from 8:00 to 9:30 AM on November 9th at the 2012 National Association for the Education of Young Children (NAEYC) Annual Conference in Atlanta, Georgia. NAEYC is the world's largest organization working on behalf of young children, and this event represents the largest gathering of classroom teachers, faculty, administrators, researchers, and other practitioners and contributors in the field of early childhood education. Dr. Coplan's presentation describes normal development at each developmental stage, and then superimposes a description of maladaptive behaviors seen in children with ASD at each successive stage. He also discusses best practices in the management of children with ASD, including behavioral interventions and the role of medication.

For a copy of Dr. Coplan's handouts [click here](#).

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## 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

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## "Behavior"

- "The manner of conducting one's self"
- "Anything than an organism does involving action and response to stimulation"
- "The actions or reactions of a person or animal in response to internal or external stimuli"

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### Behavior

- What is the child's developmental level?
- Is the behavior normal for the child's developmental level?
  - Tantrums / Noncompliance
  - "Impulsivity" / "Inattention"
  - Can the child de-center?

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### Behavior

- Acute change or chronic?
- General health?
  - Vital signs, I&O, Level of consciousness
  - Pain?
- Anything new in child's life?
  - Recent change of meds

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### Behavior

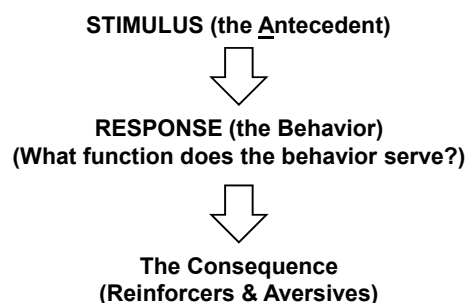
- What is the child's ability to communicate?
  - Does "disruptive" behavior serve a communicative function?
  - Or some other function?
    - Access
    - Escape
    - Self-calming
    - Attention
  - Or: No function?

### Behavior

- Developmental Model
  - Certain behaviors are characteristic at certain ages/stages, and "unfold" with time
    - Piaget
- Behaviorist Model
  - All behavior is the result of prior conditioning
    - Thorndike, Skinner, Lovaas

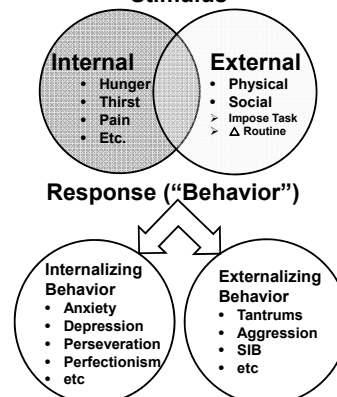
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### Behaviorism

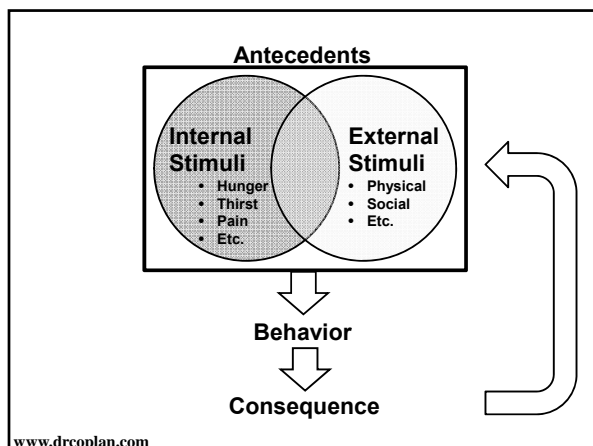


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### Stimulus



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### Law of Effect

*Animal Intelligence*. Edward Thorndike, 1911

"Of several [possible] responses...to the same situation, those which are...closely followed by satisfaction to the animal will...be more likely to recur. Those which are...followed by discomfort to the animal will...be less likely to occur. The greater the satisfaction or discomfort, the greater the strengthening or weakening of the bond"

*Manipulating the Consequence for a given behavior feeds back on the probability that that behavior will recur.*

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### Consequences 1: Reinforcers

- Reinforcers lead to an increase in frequency of the antecedent behavior
  - Positive Reinforcement (adds something)
  - Negative Reinforcement (removes something)

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### Positive Reinforcement

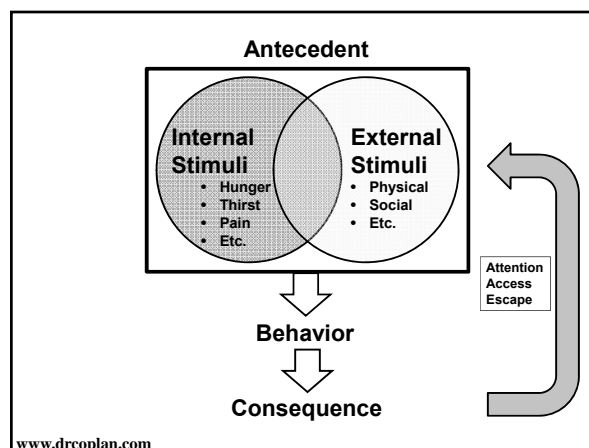
- Attention (in neurotypical children)
- Access to desired object or activity

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### Negative Reinforcement

- Escape (from a task, e.g.)
- Removal of an undesirable object (non-preferred food, e.g.)
  - Negative reinforcement does not = "punishment"

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## Food Selectivity

Negative and Positive Reinforcement of unwanted behavior

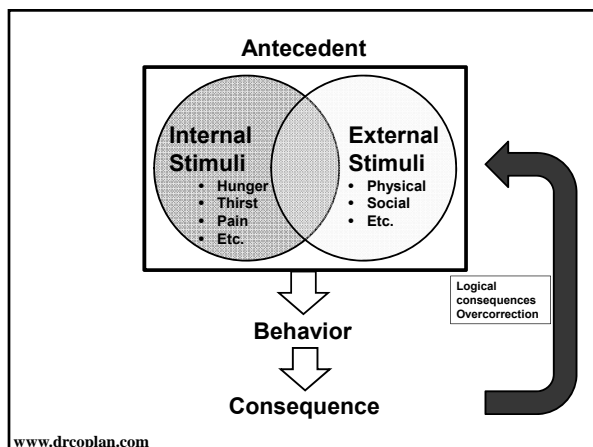
- Parent removes non-preferred food ([−] reinforcement)
- Parent provides child with his/her preferred food ([+] reinforcement)
- Alternatives
  - First ..... Then
  - Put refusal on extinction
  - The kitchen is *closed* between meals
  - Desensitization (non-preferred food is on table, on plate, touch, lick, mouth, eat)

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## Consequences 2: Aversives

- Aversives lead to a *decrease* in the likelihood of recurrence of the antecedent behavior
- 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

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## Disruptive Behavior: Function & Best Response

- Attention
  - 1-2-3 ➔ “Time Out” (T.O.)
- Access
  - *Never* grant access to desired object in response to disruptive behavior
- Escape
  - *Never* permit the child to escape from a task via disruptive behavior.
    - Walk child through task first, *then* ➔ T.O.
    - OR: Send child to T.O., and as soon as T.O. is complete, resume the task where you left off.

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## 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.)

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# Camp David

## Trading Post Rules

Rewards		Fees	
Good Day	+30	Bad Day	0
Doing Chore - Each	+10	Cursing - Each Time	-20
Doing a Good Deed	+10	Disrespect Parents	-10
Compliment About You	+10	Lies - Each	-20
Do Morning Work (NO Whining)	+10	Don't Do Morning Work (Whining)	-10
Do Pre-Bedtime Checklist	+5	Don't Do Pre-Bedtime Checklist	-5
		Ask More Than Once	-5
		Touch Another Kid or Being Mean	-10

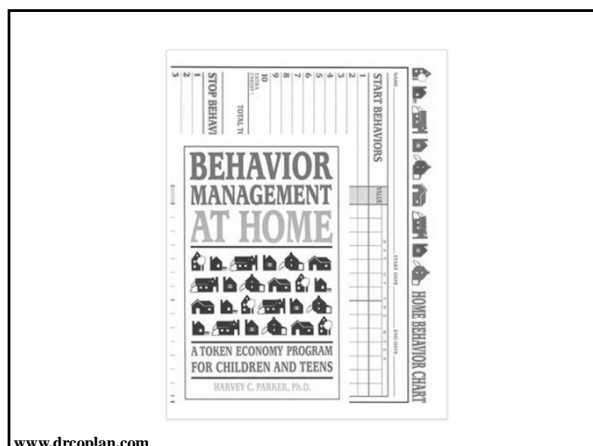
**Red = 5**

**White = 10**

**Blue = 50**

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### But.....

**Children with ASD have atypical responses to internal and external stimuli**

- *What good is Time Out if the child has no eye contact?*
- *Obsessive behavior not the same as "ordinary" task refusal*

**Not all behavior serves an external function**

- *Tourette Syndrome (Tics, Coprolalia, Compulsive Touching)*
- *Perseveration*

**Or any social / behavioral function**

- *Seizures*

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### Diagnostic Features of ASD

- **Impaired Social Reciprocity**
  - Theory of Mind (Perspective-taking)
- **Impaired Language**
  - Pragmatics
  - Prosody
- **Repetitive Behavior**
  - Physical (stereotypies)
  - Cognitive (obsessive interests)
- **Abnormal responses to sensory input**

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### Common Maladaptive Behaviors in young children with ASD - 1

- "In his own little world"
- "Fascinated" (fans, legos, alphabet)
- "Excellent memory"
- "Gives affection on his own terms"

**But.... Sometimes not obvious to parents**

- Firstborn / Only child
- Parents may adapt to child's needs
- Symptoms not apparent until social contact

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### Common Maladaptive Behaviors in young children with ASD - 2

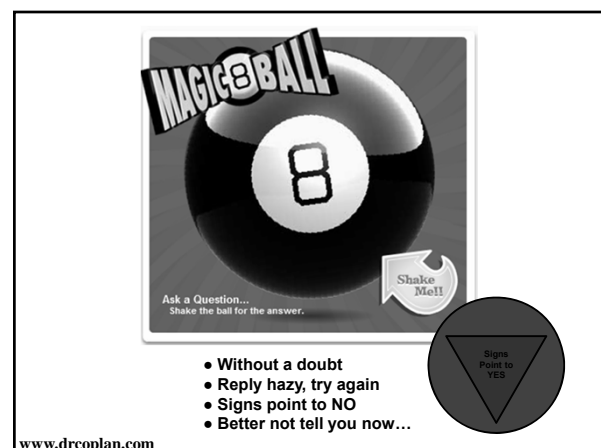
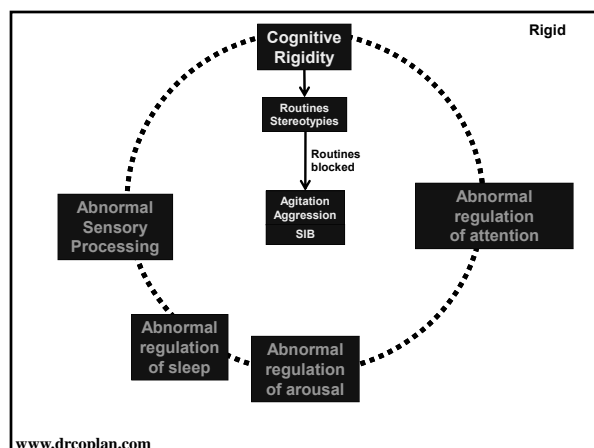
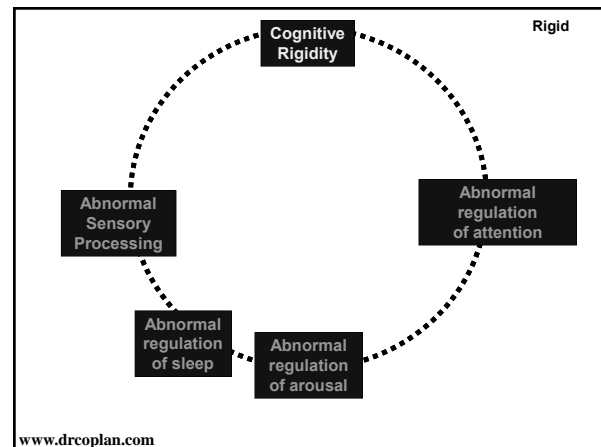
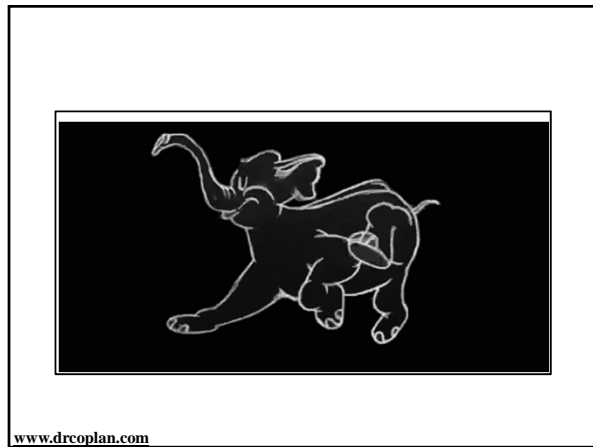
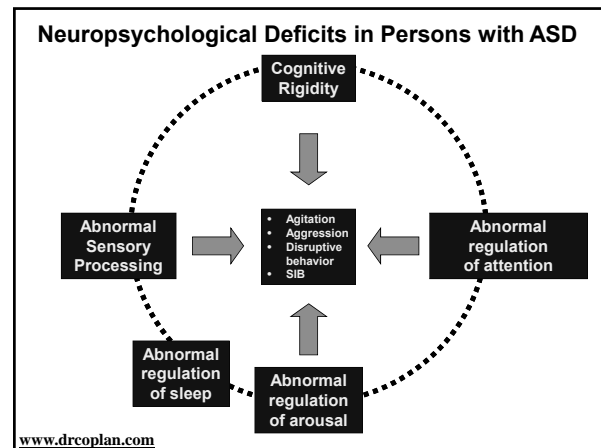
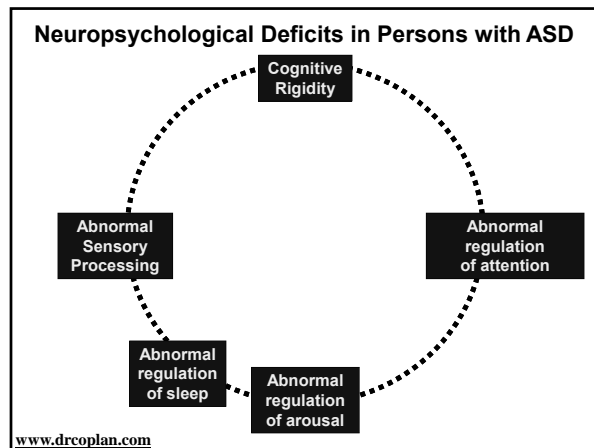
- Doesn't come for circle time
- Stereotyped play
- Disregards or "polices" peers
- Limited language
  - Off-topic utterances
  - Odd inflection
- Agitated, disruptive, but not malicious
- "Hyperactive"
- Anxious

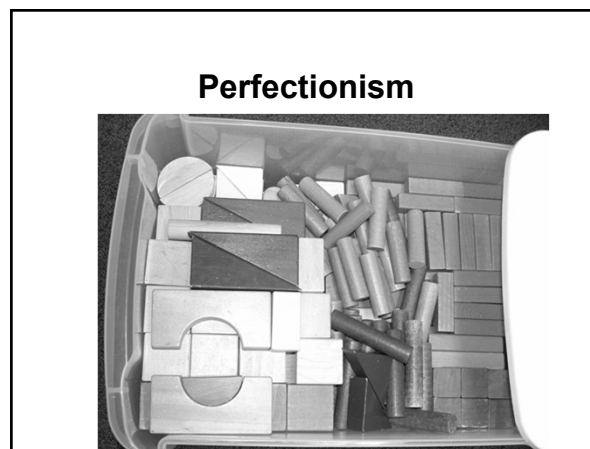
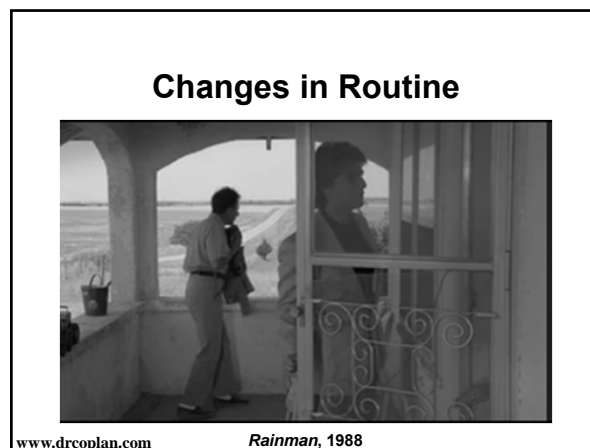
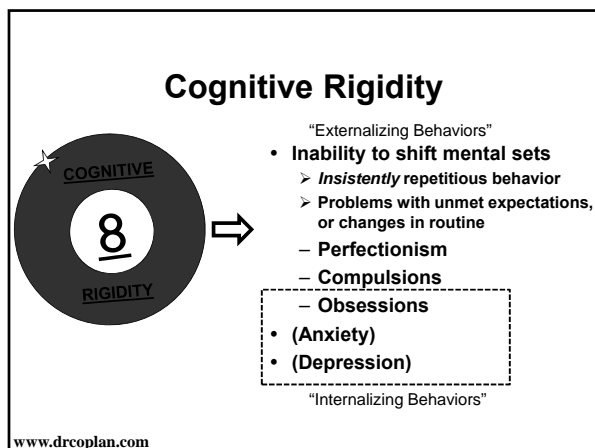
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### Underlying Neuropsychological Abnormalities in Persons with ASD

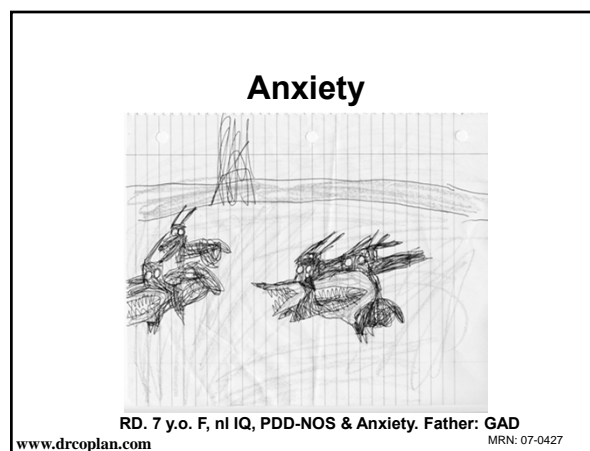
Cognitive Rigidity  
Abnormal Regulation of Attention  
Abnormal Regulation of Arousal  
Abnormal Regulation of Sleep  
Abnormal Sensory Processing

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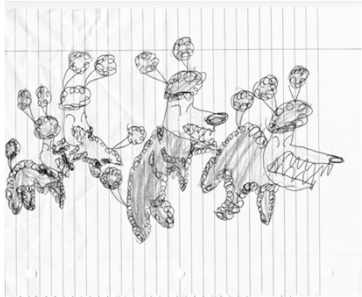




- ### Cognitive Rigidity
- Insistently repetitious behavior
  - Problems with changes in routine, transitions, unmet expectations
  - Perfectionism
  - (Anxiety)
  - (Depression)
- www.drcoplan.com



### Anxiety



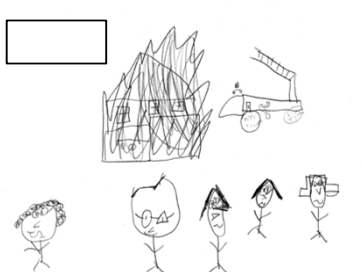
RD. 7 y.o. F, nl IQ, PDD-NOS & Anxiety. Father: GAD  
www.drcoplan.com MRN: 07-0427

### Anxiety



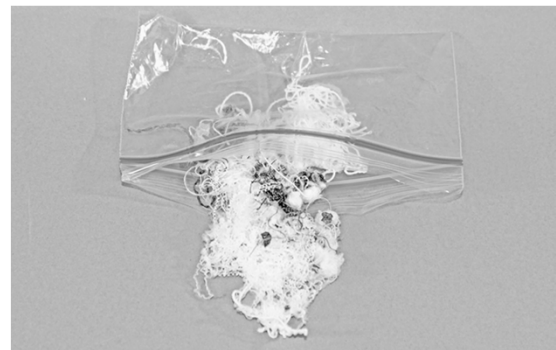
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### Anxiety



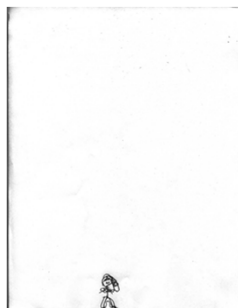
"The house is on fire and we are running for our life."

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



Joseph F: 15 y.o. boy Asperger Syndrome & chronic anxiety  
www.drcoplan.com MRN: 05-0096

### Depression



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

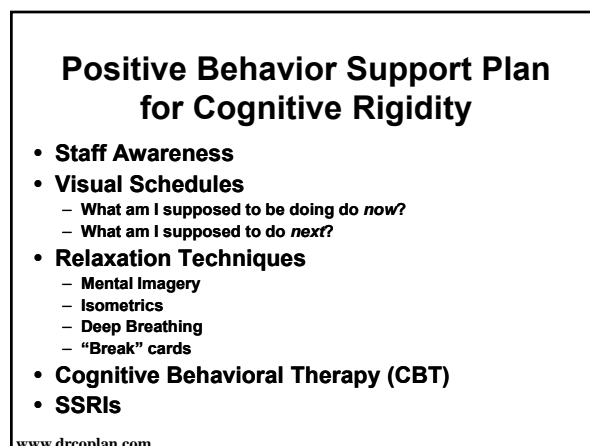
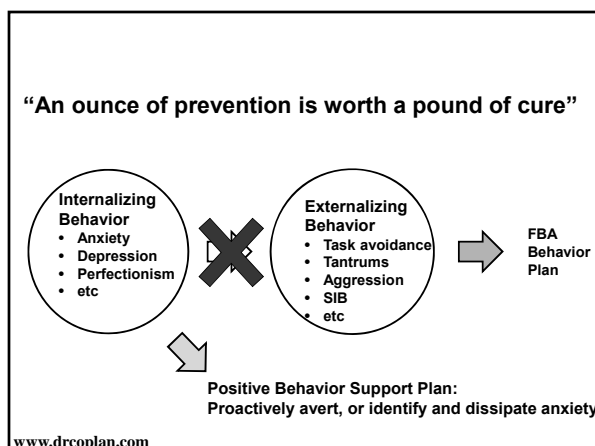
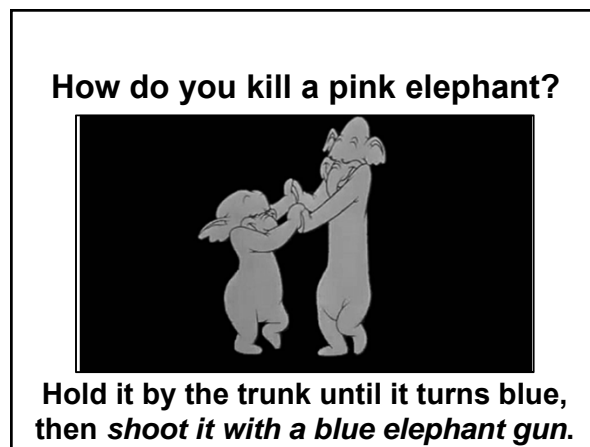
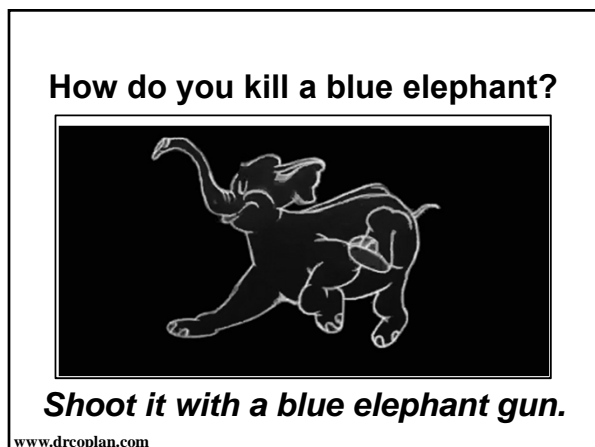
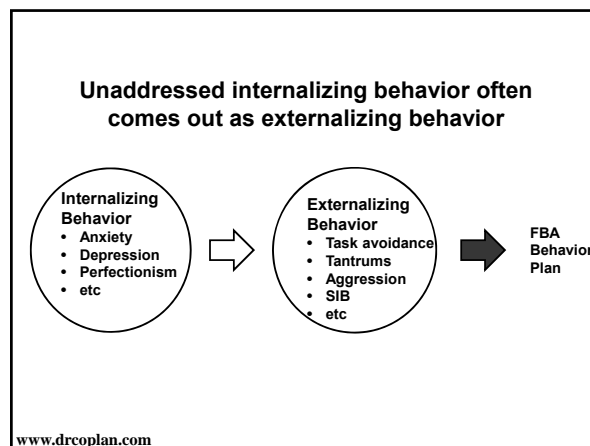
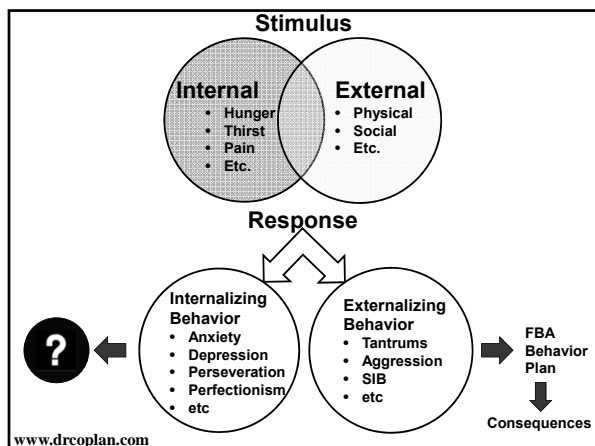
### Anxiety, Perfectionism, and Self-Injurious Behavior



Standard Score: 138

A.D. : 9 y.o. girl with ASD (my MRN: 06-0227)  
Throughout the session, "Alice" delivered a steady stream of self-deprecating comments, calling herself "stupid," or perseveratively asking if she was "fat." During the Bender, she anxiously and angrily twisted the eraser off the tip of the pencil, while declaring "Why do I keep making stupid mistakes?" As her stress level rose, she escalated to slapping herself, and then punching herself in the face.





### 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)?

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### 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.”**

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### The Story of Billy's Box - 3

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



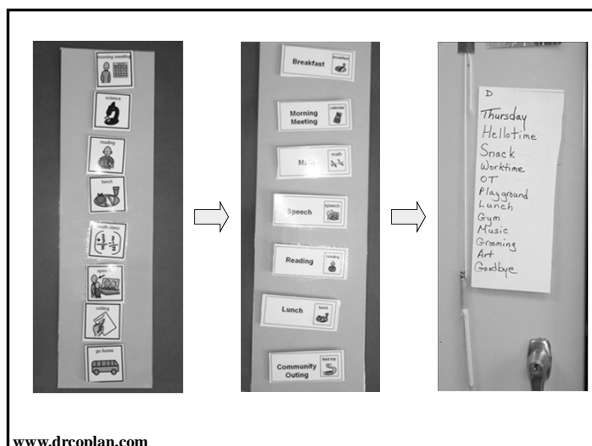
“Put your papers in the box, and we promise you will be able to go back later and work on them some more, if you want to.”

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### Cognitive Rigidity

- Interventions
  - Visual Schedules
    - What am I supposed to be doing *now*?
    - What am I supposed to do *next*?
  - CBT, Relaxation Techniques
  - SSRIs

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### When My Worries Get Too Big!

*A Relaxation Book for Children Who Live with Anxiety*

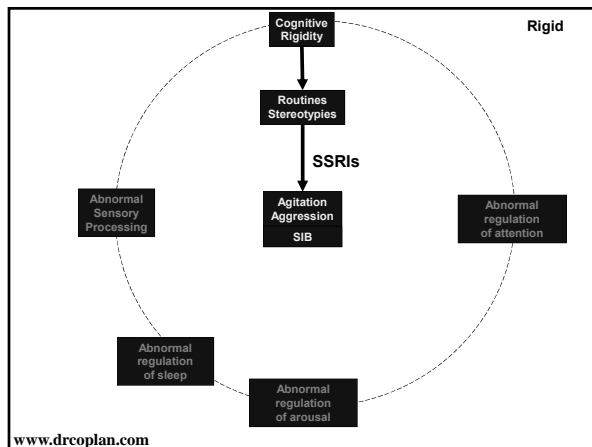
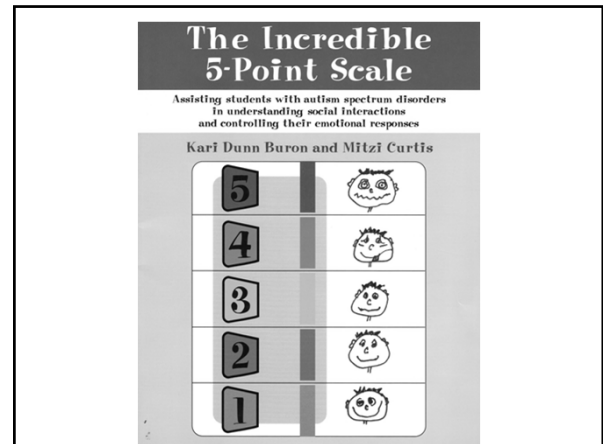
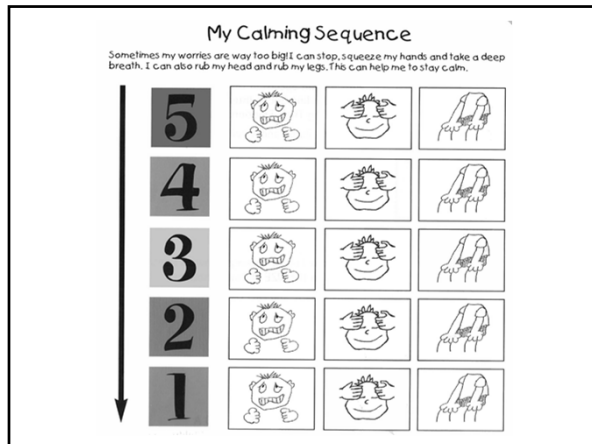
Written and Illustrated  
by Kari Dunn Buron

Foreword by Brenda Smith Myles



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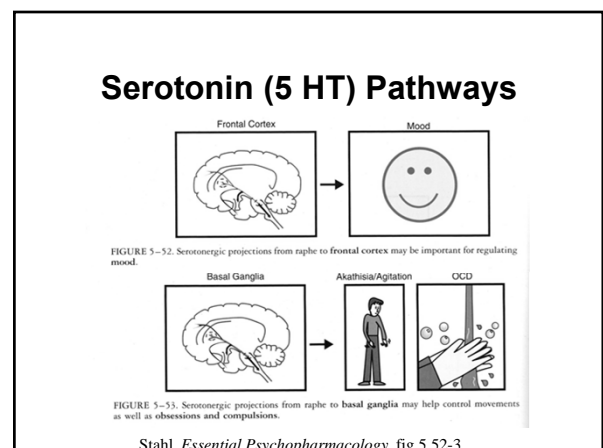
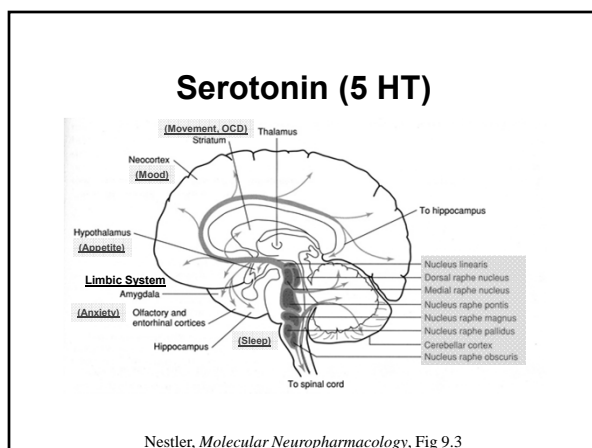
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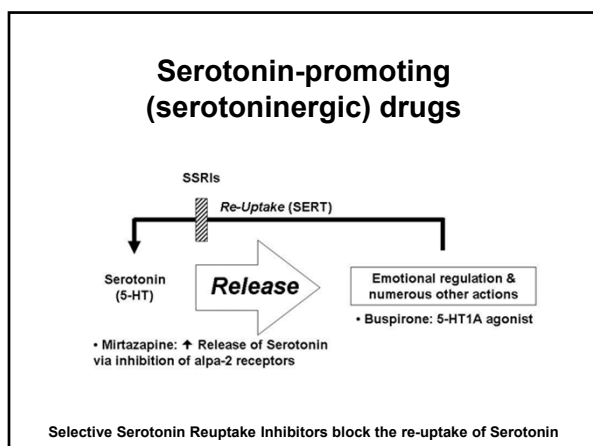


**SSRIs in ASDs**

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

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### 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...		

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- ### SSRIs in ASDs
- Side Effects
    - Activation
      - Hyperactivity
      - Irritability
      - Insomnia
      - Agitation
    - Uncommon or irrelevant
      - GI dysfunction
      - Sexual dysfunction
      - “Black Box” warning (suicidal mentation)
- www.drcoplan.com

- ### Selective serotonin reuptake inhibitors (SSRIs) for autism spectrum disorder (ASD).
- Williams, K., et al., Cochrane Database Syst Rev, 2010. 8: p. CD004677
- Studies reviewed: 7 randomized controlled trials / 271 participants
    - Fluoxetine (2), fluvoxamine (2), fenfluramine (2), citalopram (1)
    - Subjects: Children (5); Adults (2)
    - Varying inclusion criteria for Dx of ASD and IQ
    - 17 different outcome measures
  - “Data were unsuitable for meta-analysis”
- www.drcoplan.com

### Selective serotonin reuptake inhibitors (SSRIs) for autism spectrum disorder (ASD).

Williams, K., et al., Cochrane Database Syst Rev, 2010. 8: p. CD004677

**Authors’ conclusion:**

“There is no evidence that SSRIs are effective as a treatment for children with autism. In fact, there is emerging evidence that they are not effective and can cause harm. As such SSRIs cannot be recommended as a treatment for children with autism at this time.”

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- ### Selective serotonin reuptake inhibitors (SSRIs) for autism spectrum disorder (ASD).
- Williams, K., et al., Cochrane Database Syst Rev, 2010. 8: p. CD004677
- Treatment-emergent symptoms
    - Citalopram: 1 child with new onset seizures (continued to have seizures after citalopram was stopped)
    - Fenfluramine: ↑ stereotypes; withdrawal, sadness; ↓appetite
      - “With monitoring, dose adjustment and time, all but one of these adverse effects were resolved”
    - Fluoxetine (Hollander 2005): 6 of 37 children had their dosage reduced due to agitation
      - 2 children in the placebo group also had their “dosage” reduced. Difference between groups: Not significant
      - Reviewers disregard the fact that by the end of the trial, “anxiety and nervousness” was lower in the fluoxetine group compared to placebo: 15.9% vs. 33%.
    - Fluvoxamine: No significant difference in side effects between SSRI and placebo
- www.drcoplan.com

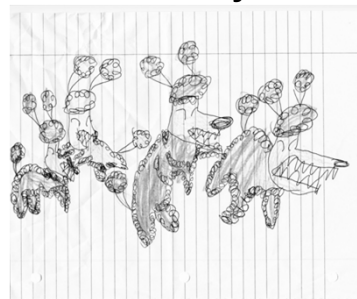
## Pharmacotherapy for anxiety disorders in children and adolescents

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

- **Studies reviewed: 22 RCTs/ 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**
  - Response rate: Medication 59%; Placebo 31%
  - 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"

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## Anxiety



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

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MRN: 07-0427

## Anxiety after Rx with CBT & Escitalopram

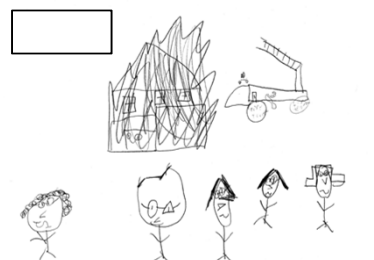


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MRN: 07-0427

## Anxiety



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

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

## Fluoxetine 10 mg/d



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

## Anxiety, Perfectionism, and Self-Injurious Behavior



Standard Score: 138

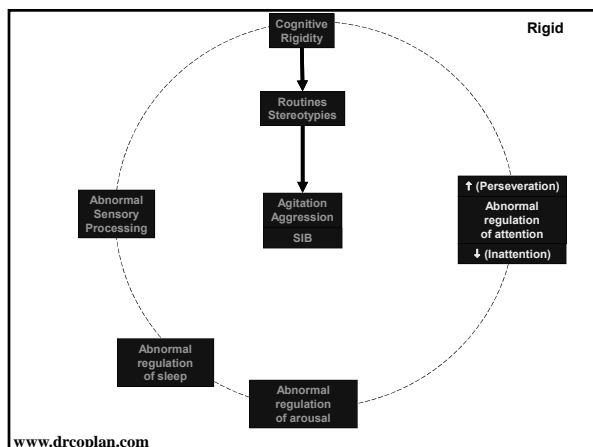
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### After one week on Sertraline

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 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.



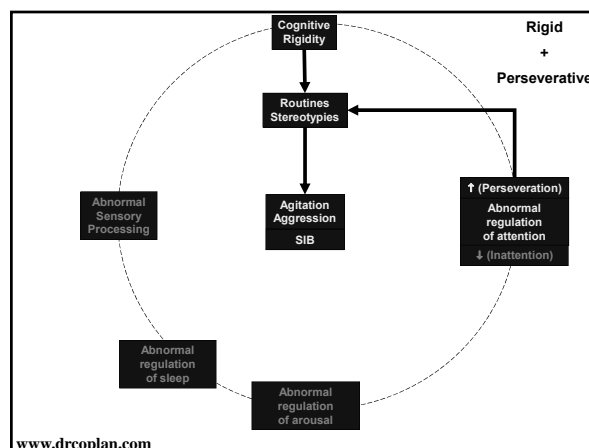
### Regulation of Attention



### 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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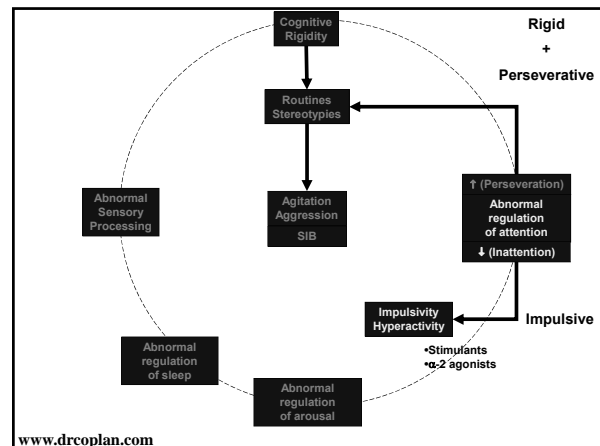




## Abnormal Regulation of Attention - 2

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

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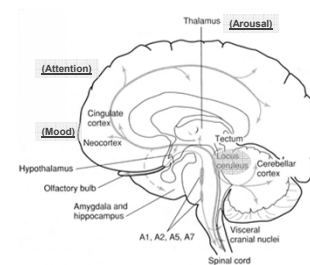
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## Inattention

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

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## Noradrenergic pathways (Norepinephrine)



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

Nestler, *Molecular Neuropharmacology*, Fig 8.5

## Noradrenergic pathways (Norepinephrine)

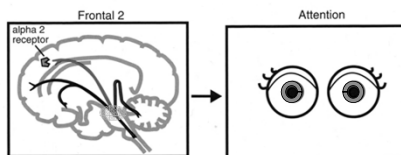
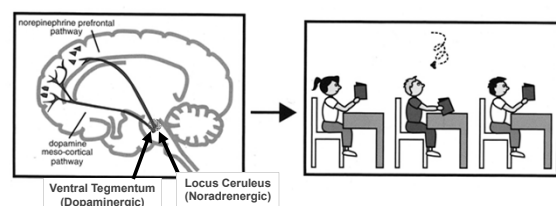


FIGURE 5-25. Other noradrenergic projections from the locus coeruleus to frontal cortex are thought to mediate the effects of norepinephrine on attention, concentration, and other cognitive functions, such as working memory and the speed of information processing. Alpha 2 postsynaptic receptors may be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

Stahl, *Essential Psychopharmacology*, fig 5.25

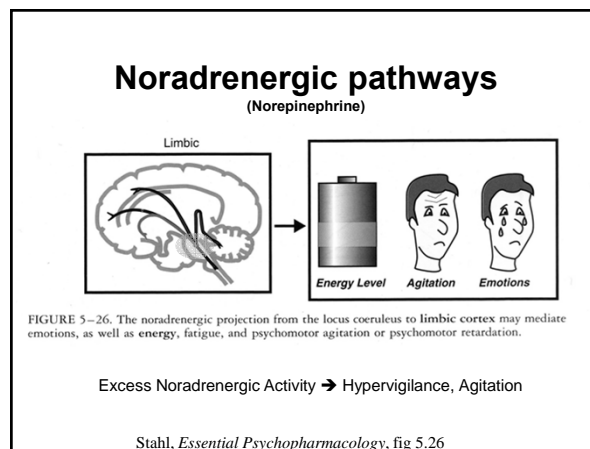
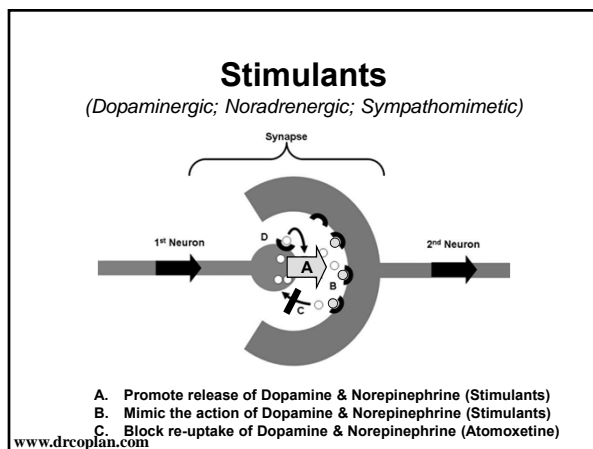
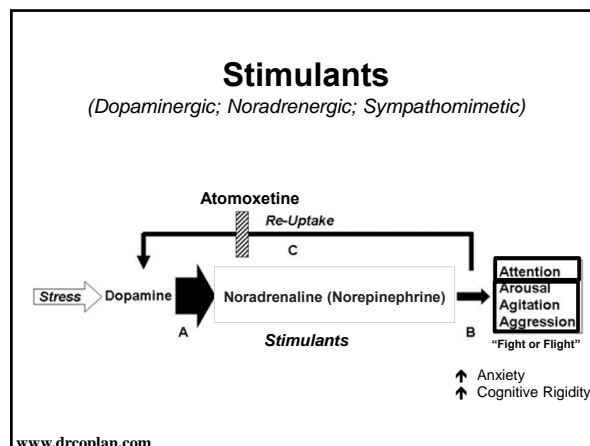
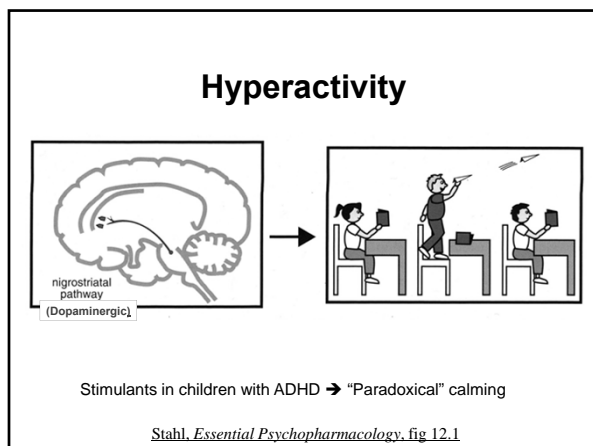
## Inattention



Insufficient activation of frontal cortex → → → Inattention

Stahl, *Essential Psychopharmacology*, fig 12.1

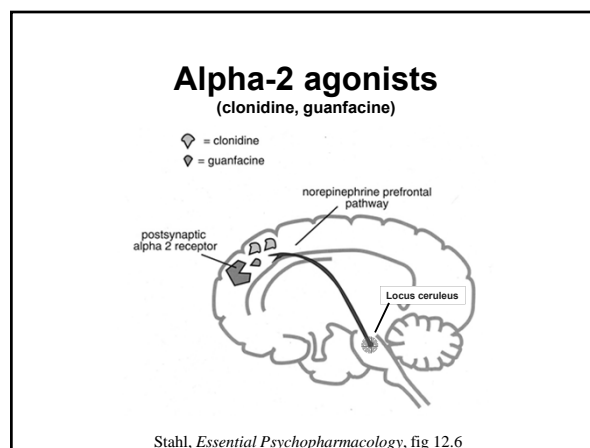


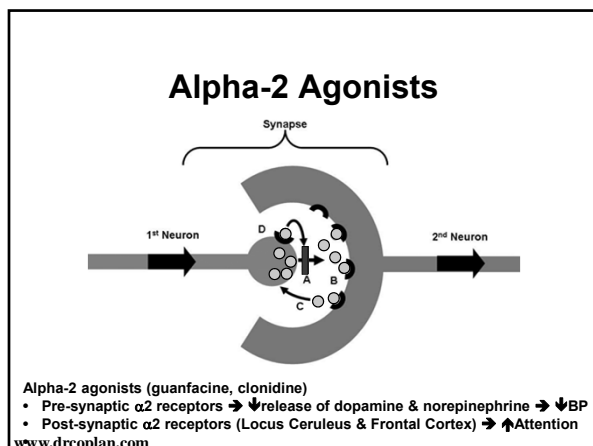


### Stimulants, NRI's

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
Lisdexamfetamine	Vyvanse	Metabolized to D-Amphetamine, Not FDA Sch. II
Atomoxetine, Attentin	Strattera	Norepinephrine reuptake Inhibitor (NRI), not FDA Schedule II

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### 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  $\rightarrow$  ↓ BP

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### Alpha-2 Agonists

<b>Benefits</b> <ul style="list-style-type: none"> <li>• ↓ Agitation</li> <li>• ↓ Hyperactivity</li> <li>• ↑ Attention Span</li> <li>• No exacerbation of anxiety / rigidity</li> </ul>	<b>Side Effects</b> <ul style="list-style-type: none"> <li>• Sleepiness: Common</li> <li>• Emotional Lability (crying) - occasional</li> <li>• Hypotension (low BP) - rare</li> </ul>
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### References

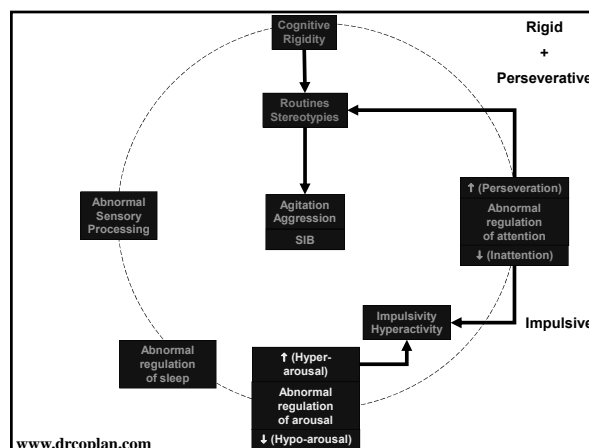
(alpha-2 agonists)

- Murray, M.J., Attention-deficit/Hyperactivity Disorder in the context of Autism spectrum disorders. Curr Psychiatry Rep, 2010. 12(5): p. 382-8.
- May, D.E. and C.J. Kratochvil, Attention-deficit hyperactivity disorder: recent advances in paediatric pharmacotherapy. Drugs, 2010. 70(1): p. 15-40.

### Clinical Pearl

- **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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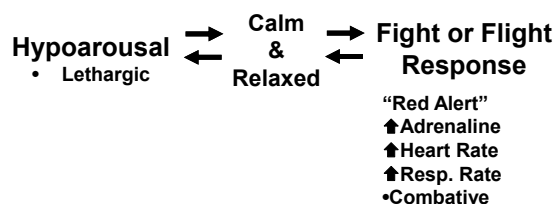


"He is so hard to calm down when he gets upset....His emotional thermostat doesn't work"

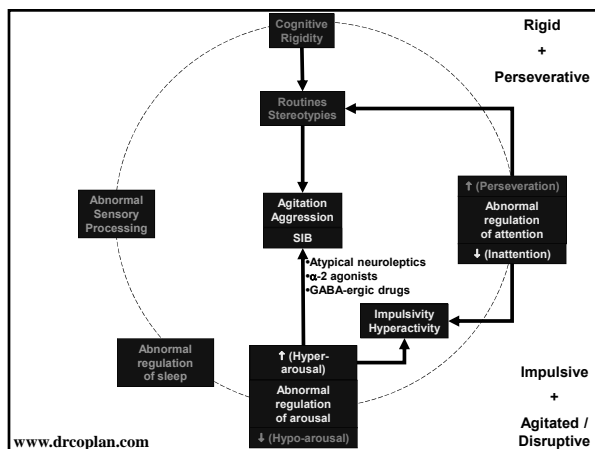
Parent of an 8 year old with ASD

F. O. MRN 06-0208

## Regulation of Arousal

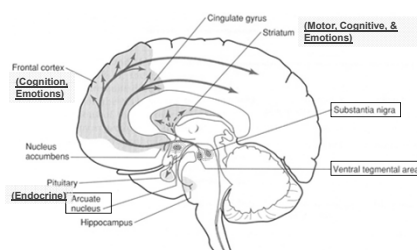


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## Dopamine

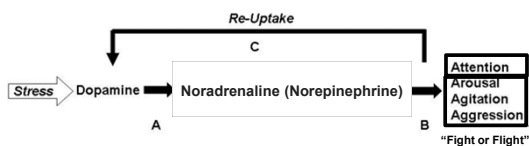


Substantia Nigra ("black stuff"), Ventral tegmentum, arcuate nucleus

Nestler, *Molecular Neuropharmacology*, Fig 8.6

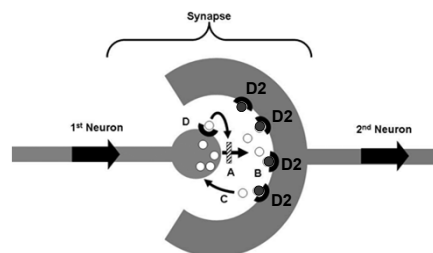
## Dopamine

(Dopaminergic; Noradrenergic; Sympathomimetic)



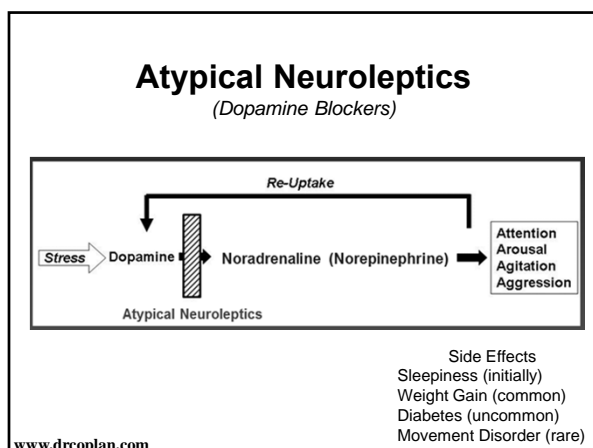
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## Atypical Neuroleptics



•Atypical neuroleptics block D2 receptors

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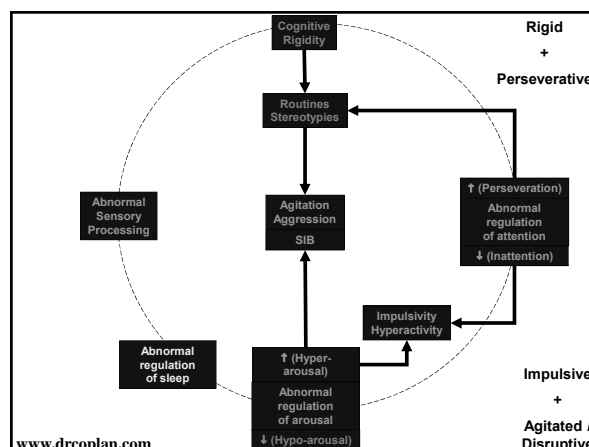


### Atypical Neuroleptics

Generic Name	Brand Name	Comment
Aripiprazole	Abilify	<ul style="list-style-type: none"> <li>Relatively less risk of weight gain</li> <li>FDA approved for Rx of ASD</li> </ul>
Clozapine	Clozaril	<ul style="list-style-type: none"> <li>Bone marrow suppression</li> </ul>
Olanzapine	Zyprexa	<ul style="list-style-type: none"> <li>Greater risk of weight gain</li> </ul>
Quetiapine	Seroquel	<ul style="list-style-type: none"> <li>Greater sedation</li> </ul>
Risperidone	Risperdal	<ul style="list-style-type: none"> <li>Greater risk of weight gain</li> <li>FDA approved for Rx of ASD</li> </ul>
Ziprazidone	Geodon	<ul style="list-style-type: none"> <li>Relatively less risk of weight gain</li> </ul>

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- ### References
- (neuroleptics, AEDs, GABA)
- Canitano, R. and V. Scandurra, *Psychopharmacology in autism: An update*. Progress in Neuro-Psychopharmacology and Biological Psychiatry, 2011. 35(1): p. 18-28.
  - Tuchman, R., AEDs and psychotropic drugs in children with autism and epilepsy. Mental Retardation & Developmental Disabilities Research Reviews, 2004. 10(2): p. 135-138.
  - Wang, L.W., E. Berry-Kravis, and R.J. Hagerman, Fragile X: leading the way for targeted treatments in autism. Neurotherapeutics, 2010. 7(3): p. 264-74.
- www.drcoplan.com



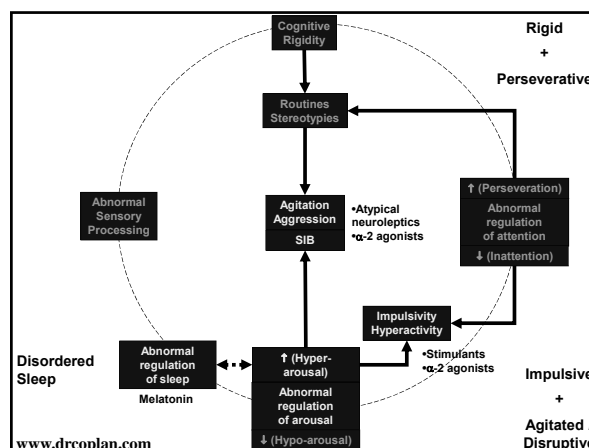
- ### Regulation of Sleep - 1
- Melatonin**
    - Brain hormone
    - ↓ Metabolic rate (Heart, Temp)
    - "You're sleepy now"
  - Suppressed by light**
    - 24 hr cycle
    - Seasonal cycle
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- ### Regulation of Sleep - 2
- Abnormal melatonin cycling**
    - Primary disorders of sleep
    - Blindness
    - ASD
  - Symptoms**
    - Delayed onset of sleep
    - Shortened duration / frequent waking
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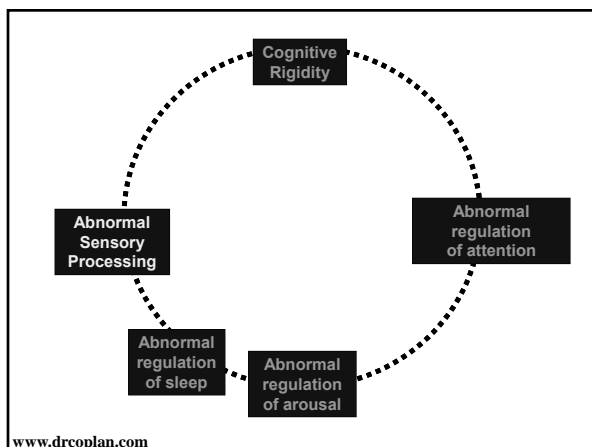
### Regulation of Sleep - 3

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

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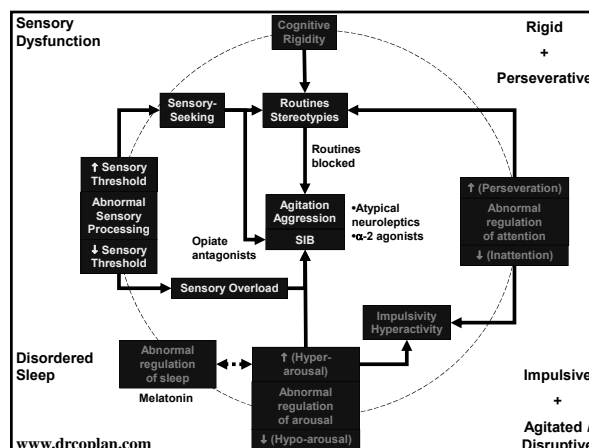


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### Sensory Processing

- **Subjective Properties**
    - Familiar / Unfamiliar
    - Pleasant / Unpleasant
    - Strong / Weak
    - Internal / External
  - **Sensory Input → Self-awareness**
  - **Mirror Neurons → Empathy**
- Mostofsky, S. and J. Ewen, *Altered Connectivity and Action Model Formation in Autism Is Autism*. Neuroscientist, 4/15/2011

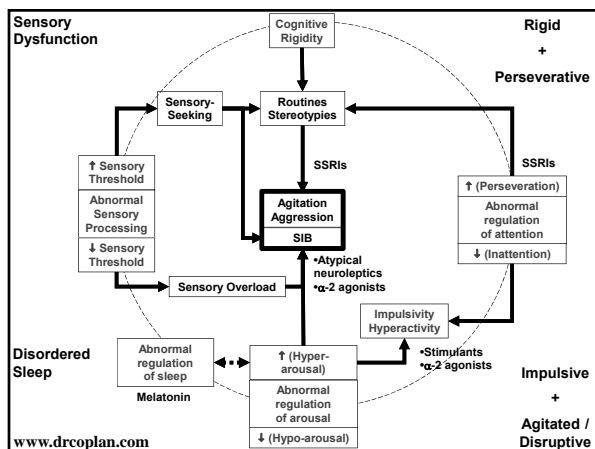
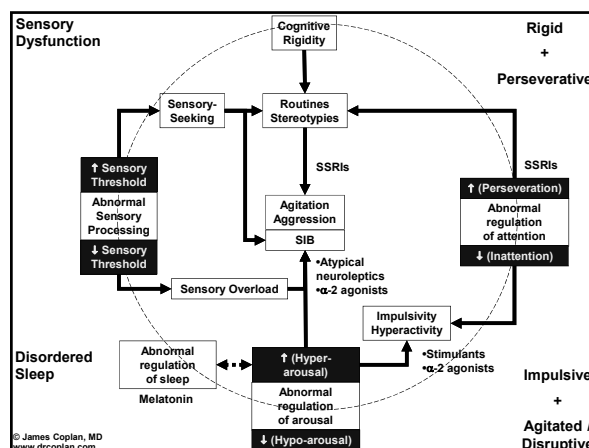
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Max Wertheimer

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- **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)

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- **Why this child?**

- Neuropsychological factors?
  - Cognitive Rigidity
  - Dysregulation of attention
  - Dysregulation of arousal
  - Sensory Seeking / Sensory Overload
- **Behavioral Intervention – Usually**
- **Change in classroom setting – sometimes**
  - Shift from rote to inferential learning (2<sup>nd</sup> - 3<sup>rd</sup> grade): challenge
- **Medication: Sometimes**

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- Identify *internalizing* behaviors before they lead to *externalizing* behaviors

- **Behavior Management Plan** that proactively seeks to avert or dissipate anxiety

### Clinical Pearl

- **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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### Summary

#### Directions for future research:

- **Better phenotyping of ASD**
  - Clinical
  - Genetic
- **Better drug studies**
  - Drug vs. Behavioral Therapy vs. Combination
  - Drug vs. Drug (not just drug vs. placebo)
  - Drug combinations (not just monotherapy)
    - Stimulant + SSRI, e.g.
  - Better outcome measures
    - Quality of Life
    - Long-term outcome
- **Brain / Behavior / Drug imaging**

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### For additional information:

- *Making Sense of Autistic Spectrum Disorders – create the brightest future for your child with the best treatment options.* Coplan, J. Bantam-Dell, 2010. Chapter 12: Behavior Management and Psychopharmacology
- Or go to: [www.drcoplan.com](http://www.drcoplan.com) and click on “When is behavior not behavioral?”

When is Behavior not “Behavioral”?  
Recognizing Neurologically  
Driven Behaviors  
In Children with ASD

[www.drcoplan.com](http://www.drcoplan.com)



*Thank you*

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