Neuropsychiatric and Neuropsychological Co-Morbidity in ASD

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Outline / Basic Premises - 1
• Biologically driven behaviors / traits
  – Cognitive Rigidity
  – Dysregulation of Attention
  – Dysregulation of Arousal
  – Dysregulation of Sleep
  – Dysregulation of Sensory Processing
• Occur irrespective of environmental contingencies
• Do not serve a social function
• Specific behaviors / traits are tied to specific neurotransmitters / brain systems

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

Outline / Basic Premises - 2
• Socially driven behaviors
  – Occur in response to environmental contingencies
  – Serve a social function
    • Attention
    • Access to desired objects or activities
    • Escape from undesired activities
  – A-B-C Model
    • What is the Antecedent to the behavior?
    • What is the Behavior itself?
    • What are the Consequences for the behavior?

Outline / Basic Premises - 3
• Behavior analysis needs to take biological and environmental factors into account:
  – Underlying biological traits often provide the child with lots of opportunities to make unfortunate discoveries (viz: Tantrums or SIB are great ways to get attention or escape from tasks)
• Intervention often requires both pharmacologic and behavioral measures

Outline
Neuropsychiatric and Neuropsychological Co-Morbidity: 1:00 – 2:30
• Cognitive Rigidity: Internalizing and externalizing behaviors
• Dysregulation of attention
• Dysregulation of arousal
• Dysregulation of mood
• Positive Behavior Support for internalizing behavior
• Psychopharmacology for the non-physician
• Behaviorism: Its utility and its limits

Break 2:30 – 2:45

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Neuropsychological Deficits in Children with ASD

Cognitive Rigidity:
Changes in Routine / Unmet Expectations

Cognitive Rigidity → Anxiety → Disruptive Behavior

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

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

MRN 12-0782
Cognitive Rigidity
(Difficulty shifting mental sets)

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

- Obsessions
- (Anxiety)
- (Depression)
*Internalizing Behaviors*

IDEA

- IDEA requires the IEP to address “behavior that impedes child’s learning or that of others” (IDEA Section 614(d)(2)(B)
- Unfortunately, as implemented, this section of IDEA is usually applied only to externalizing behaviors

Perfectionism

Compulsions

Joseph F: 15 y.o. boy Asperger Syndrome
RM: 9 y.o. boy: ASD, normal IQ, anxiety d/o, disruptive behavior. Mother: Anxiety D/O; PGM hoarding & OCD

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

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

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

A.W.: 9 year old boy with PDD-NOS and normal IQ (MRN 11-07710)
"Standing in the Atlantic Ocean. The ocean has a very high surface, up to their mouth, so they can't breathe." Six year old boy with ASD and Anxiety.

"Draw a picture of your family, with everybody in the picture doing something." IB; 12 yr old male, Mild ASD, Superior IQ

ko; 10 yr old female, PDD-NOS, normal IQ

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

"Draw a picture of your family, with everybody in the picture doing something." IB; 12 yr old male, Mild ASD, normal IQ
Depression ( & Perseveration)

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

I. B. MRN 06-0256

Anxiety, Perfectionism, and Self-Injurious Behavior

A.D.: 9 y.o. girl with ASD (my MRN: 08-0227)
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.

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.

Unaddressed internalizing behavior often comes out as externalizing behavior

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

Externalizing Behavior
- Tantrums
- Aggression
- SIB
- etc

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Positive Behavior Support Plan for Internalizing Behavior

- Staff Awareness
- 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

Not seeing the vase (ignoring internalizing behavior)

- Disrespectful
- Non-compliant
- Unmotivated
- Stubborn
- Aggressive

Seeing the vase (recognizing internalizing behavior)

- Antecedents
  - Anxiety
  - Perfectionism
  - Fear of Failure

- Behaviors
  - Tantrums
  - Elopings
  - Task Refusal

- Consequences
  - Temporary reduction in anxiety via task avoidance

- Perceived Function
  - Avoidance of self-blame for not completing the task perfectly

Not seeing the vase (ignoring internalizing behavior)

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

Not seeing the vase
(ignoring internalizing behavior)

Not seeing the vase
(ignoring internalizing behavior)

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

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.”

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”)?

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?
• Relaxation Techniques
  – Mental Imagery
  – Isometrics
  – Deep Breathing
  – “Break” cards
• Cognitive Behavioral Therapy (CBT)
• SSRIs
**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)**

**Staff Awareness**

**Positive Behavior Support Plan for Internalizing Behavior**

**Obessional Index**

- 5: I can't control it. I will need lots of support.
- 4: I am feeling very nervous and will probably need some support.
- 3: I am thinking about my obsessions, but I may need to talk to someone about it. I think I have some control.
- 2: I am feeling pretty relaxed today. I can probably think about my obsessions but will do well in the classroom.
- 1: It is a great day! My obsessional personality is a neurological work of art!

**My Calming Sequence**

Sometimes, my worries come when I am tired. I close my eyes to relax, put my head on a pillow, and take a deep breath. I can also call my head and make it big. This can help me to stop panicking.

**The Incredible 5-Point Scale**

- 5: I am feeling really upset.
- 4: I am feeling a little bit upset.
- 3: I am feeling OK.
- 2: I am feeling happy.
- 1: I am feeling great.

**Exploring Feelings: Cognitive Behavior Therapy to Manage Anxiety**

DR. TONY ATTWOOD
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?
- Relaxation Techniques
  - Mental Imagery
  - Isometrics
  - Deep Breathing
  - “Break” cards
- Cognitive Behavioral Therapy (CBT)
- SSRIs

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Selective Serotonin Reuptake Inhibitors (SSRIs)

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

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Serotonin (5 HT)

Stahl, Essential Psychopharmacology, fig 5.52-3

Abnormal regulation of arousal
Abnormal regulation of attention
Abnormal regulation of sleep
Abnormal Sensory Processing

Abnormal

Agitation

Rigid

SSRIs

Serotonin promoting (serotoninergic) drugs

A. Promote release of serotonin (Mirtazapine)
B. Mimic the action of serotonin at the 2nd neuron (Buspirone)
C. Block re-uptake of serotonin (SSRIs)
SSRIs in ASDs

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

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

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.”

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

Studies reviewed: 7 randomized controlled trials / 271 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”

Selective Serotonin Reuptake Inhibitors (SSRIs)

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Brand Name</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluoxetine</td>
<td>Prozac</td>
<td>The first selective SRI</td>
</tr>
<tr>
<td>Fluvoxamine</td>
<td>Luvox</td>
<td>May be less activating</td>
</tr>
<tr>
<td>Sertraline</td>
<td>Zoloft</td>
<td>Prolonged QT interval</td>
</tr>
<tr>
<td>Citalopram</td>
<td>Celexa</td>
<td>Prolonged QT interval</td>
</tr>
<tr>
<td>Escitalopram</td>
<td>Lexapro</td>
<td>Prolonged QT interval</td>
</tr>
<tr>
<td>And others...</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pharmacotherapy for anxiety disorders in children and adolescents

- 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)
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Anxiety after Rx with CBT & Escitalopram

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

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.

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.

After one week on Sertraline

“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

Fluoxetine 10 mg/d

A.W.: 9 year old boy with PDD-NOS and normal IQ (MRN 11-07710)
Abnormal Regulation of Attention - 1

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

Regulation of Attention

Let go & Shift

Attend to stimulus #1 ↔ Attend to stimulus #2

Perseveration
Perseveration

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

Perseveration

"Draw a picture of your family, with everybody doing something"

"We are going into the Grand Hyatt"

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

Abnormal Regulation of Attention

- Inattention
  - Inability to focus
  - Impulsive
  - Distractible

Abnormal Regulation of Attention (Perseveration)

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

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

Noradrenergic pathways

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Noradrenergic pathways (Norepinephrine)

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

Nestler, Molecular Neuropharmacology, Fig 8.5

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Stimulants

(Dopaminergic; Noradrenergic; Sympathomimetic)

Stahl, Essential Psychopharmacology, fig 5.26

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Noradrenergic pathways

Frontal lobe activation reduces stress and facilitates attention.

Stahl, Essential Psychopharmacology, fig 5.25

---

Inattention

Insufficient activation of frontal cortex → Inattention

Stahl, Essential Psychopharmacology, fig 12.1
Hyperactivity

Stimulants in children with ADHD → “Paradoxical” calming

Stahl, *Essential Psychopharmacology*, Fig 12.1

Stimulants, NRI’s

<table>
<thead>
<tr>
<th>Generic Name(s)</th>
<th>Brand Name(s)</th>
<th>Comment</th>
</tr>
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<tbody>
<tr>
<td>Amphetamine</td>
<td></td>
<td>FDA Schedule II</td>
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<tr>
<td>Dextroamphetamine</td>
<td>Dextrostat, Dexamphetamine</td>
<td>FDA Schedule II</td>
</tr>
<tr>
<td>Methylphenidate</td>
<td>Concerta, Ritalin, Metadate</td>
<td>FDA Schedule II</td>
</tr>
<tr>
<td>Atomoxetine, Attentin</td>
<td>Strattera</td>
<td>Norepinephrine reuptake inhibitor (NRI), not FDA Schedule II</td>
</tr>
</tbody>
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Stimulants

(Dopaminergic; Noradrenergic; Sympathomimetic)

Atomoxetine: Block re-uptake of Dopamine & Norepinephrine

Stimulants

A. Promote release of Dopamine & Norepinephrine (Stimulants)
B. Mimic the action of Dopamine & Norepinephrine (Stimulants)
C. Block re-uptake of Dopamine & Norepinephrine (Atomoxetine)

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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>More sedating than guanfacine</td>
</tr>
<tr>
<td>Guanfacine</td>
<td>Tenex, Intuniv</td>
<td></td>
</tr>
</tbody>
</table>

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

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Alpha-2 Agonists (guanfacine, clonidine)

- Pre-synaptic α2 receptors ★BP release of dopamine & norepinephrine ★BP
- Post-synaptic α2 receptors (Locus Ceruleus & Frontal Cortex) ★ Attention
Alpha-2 agonists
(clonidine, guanfacine)

Stahl, Essential Psychopharmacology, fig 12.6

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”

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

Rigid + Perseverative

Abnormal Sensory Processing
Agitation, Aggression, SIB
Cognitive Rigidity

Impulsive

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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

Hypoarousal
• Lethargic
→ Calm & Relaxed
→ Fight or Flight Response

“Red Alert”
• Adrenaline
• Heart Rate
• Resp. Rate
• Combative

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Dopamine

(Dopaminergic; Noradrenergic; Sympathomimetic)

Re-Uptake

Stress → Dopamine → Noradrenaline (Norepinephrine) → Agitation

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Abnormal regulation of arousal
• Abnormal regulation of attention
• Inattention
• Perseveration

Atypical Neuroleptics

(Dopamine Blockers)

Re-Uptake

Stress → Dopamine → Noradrenaline (Norepinephrine) → Agitation

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

Dopamine

Noradrenaline (Norepinephrine)

Atypical Neuroleptics

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Nestler, Molecular Neuropharmacology, Fig 8.6

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Side Effects
Sleepiness (initially)
Weight Gain (common)
Diabetes (uncommon)
Movement Disorder (rare)
Atypical Neuroleptics

- Atypical neuroleptics block D2 receptors

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<tr>
<td>Aripiprazole</td>
<td>Abilify</td>
<td>• Relatively less risk of weight gain</td>
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<td></td>
<td></td>
<td>• FDA approved for Rx of ASD</td>
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<tr>
<td>Clozapine</td>
<td>Clozaril</td>
<td>• Bone marrow suppression</td>
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<tr>
<td>Olanzapine</td>
<td>Zyprexa</td>
<td>• Greater risk of weight gain</td>
</tr>
<tr>
<td>Quetiapine</td>
<td>Seroquel</td>
<td>• Greater sedation</td>
</tr>
<tr>
<td>Risperidone</td>
<td>Risperdal</td>
<td>• Greater risk of weight gain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• FDA approved for Rx of ASD</td>
</tr>
<tr>
<td>Ziprazidone</td>
<td>Geodon</td>
<td>Relatively less risk of weight gain</td>
</tr>
</tbody>
</table>

Abnormal regulation of arousals

- Atypical neuroleptics block D2 receptors

Abnormal regulation of attention

- (Perseveration)

Abnormal regulation of sleep

- (Hypo-arousal)

Abnormal sensory processing

- (Disruption)

Agitation

- (Hyper-arousal)

Stimulability

- (Hyperactivity)

Rigidity

- (Rigidity)

Impulsive

- (Impulsivity)

Agitated / Disruptive

- (Disruptive)
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


Abnormal regulation of arousal

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

Cognitive Rigidity

Abnormal regulation of sleep

Abnormal Sensory Processing

Inconsistency

Agitation

SIB

Sensory Overload

Disordered Sleep

Routinization

Atypical neuroleptics

α2 agonists

SSRIs

Melatonin

Disordered Sleep

Agitation

Impulsivity

Hyperactivity

Rigid ➔ Perseverative

Sensory Overload

Agitation

Impulsivity

Hyperactivity

Rigid ➔ Perseverative

The whole is greater than the sum of its parts
Max Wertheimer

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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."

---

Behaviorism made simple

STIMULUS (the Antecedent)

↓

RESPONSE (the Behavior)

↓

The Consequence

Operant Conditioning

Skinner

• *Experimental manipulation of the consequences for a given behavior (by the subject) alters probability that that behavior will recur.*

---

Thorndike 1905

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

Skinner, ca. 1950

http://www.youtube.com/watch?v=SUeGfSh6NjE&feature=endscreen
The ABC’s of Behavior Analysis

- What is the Antecedent?
- What is the Behavior?
- What is the Consequence?

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.
  - OR: Send child to T.O., and as soon as T.O. is complete, resume the task where you left off.

J.B. Watson

Psychology as the behaviorist sees it. (1913)

- “The behavior of animals can be investigated without appeal to consciousness.”
- Limit psychology to the study of outwardly visible behavior.

Behaviorism’s Blind Spot

- “Internalizing Behavior” is an oxymoron to a behaviorist.
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.)

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)

- Why this child?
  - Neuropsychological factors?
    - Cognitive Rigidity
    - Dysregulation of attention
    - Dysregulation of arousal
    - Sensory Seeking / Sensory Overload

- Behavioral Intervention – Usually
  - FBA’s usually disregard internalizing behavior

- Change in classroom setting – sometimes
  - Shift from rote to inferential learning (2nd - 3rd grade): challenge

- Medication: Often
- Family mental health intervention: Often

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An ounce of prevention….

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

More on IDEA and FBAs here:
http://www.wrightslaw.com/info/discipl.index.htm
http://www.pent.ca.gov/lgl/addressingbehaviorIDEA.pdf

**BREAK**