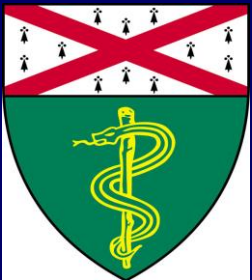


# New Understandings of ADHD:

## Role of Emotions

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# 3. The Mystery of ADHD: Situational Variability of Symptoms

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◆ Why focus for this, but not that?

“If it really interests me” (attraction)

◆ Why focus then, but not now?

“If I feel the gun to my head” (fear)

# 2 hypotheses re: motivation in ADHD

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“Willpower”

VS

Erectile Dysfunction of the Mind

# How does brain determine motivation to ignore or attend, to do or not do now?

- ◆ **Motivation** is not a unified variable; it is not just “gas in the tank”  
It is **idiosyncratic and specific** to particular tasks and settings.
- ◆ Each perception, thought or task is instantly screened by the brain’s “google search” that pulls up **relevant, unconscious memories throughout cortex**; these **compete** to activate approach, avoidance and/or disinterest

# Cognition & Emotion are Integrated in learning history of each individual

“Emotion and cognition cannot be dissociated in the brain...**affective significance** determines how the amygdala helps **separate** the significant from the mundane”

(L. Pessoa, 2013)

“All information processing is emotional...**emotion is the energy level** that **drives, organizes, amplifies** and **attenuates** cognitive activity.”

(K. Dodge, 1991)



# Amygdala's “googling” is filtered for context

- ◆ Amygdala responses are strongly context dependent
- ◆ Amygdala flexibly integrates stimulus valence with current goals, motivations, and contextual demands. Attar, H. et al (2010)

# Context Matters!

Where we are and who we're with shapes which of our emotions are most intense in the moment:

A clinical example:

“Would you like a cookie?”



# Emotions May Shift as Context Shifts

- ◆ A student who works hard to get every term paper in on time may **suddenly not care** about a paper because his girlfriend broke up with him and is dating someone else.
- ◆ A student whose interest in completing papers is generally lukewarm may **suddenly intensify interest and work hard** on paper so he can maintain eligibility to stay on his team.

# Motivational Output

- ◆ The rapid-fire calculus of the amygdala and related networks sorts competing priorities emergent from the individual's learning history to mobilize, shape or defer action.
- ◆ Output from the amygdala reaching multiple brain regions quickly alters functional connectivity that activates (or doesn't) both body and brain

# How and why do those with ADHD have more problems with motivation?

Children & adults with ADHD experience similar emotions to others of similar age

Yet they have more difficulty in:

- ◆ recognizing,
- ◆ responding to,
- ◆ and managing their emotions

This causes impairments in motivation.

# Sue

## 14 year-old high school student

“Until I got into middle school I always got good grades and never got into trouble. Now everybody thinks I’m hopeless because I dress Goth and don’t do much homework. My parents and teachers look down on me just because of the friends I hang out with. They don’t really know me or my friends!”

# Sue

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- ◆ Reciprocal confrontations
- ◆ Documenting abilities
- ◆ Validating for accommodations
- ◆ Frustrations, hope and reassurance
- ◆ Risks of micro-managing

# Eric

20 year-old university student

“I’m in a great university where I want to do well, but I just can’t get myself motivated to do the work. I did really well in high school; now my grades have tanked. I’ve been spending too much time hanging out with my girlfriend and smoking weed. I’ve tried some ADHD meds, but they make me too jittery.”

# Eric

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- ◆ Loss of structure
- ◆ Powerful fear of being alone
- ◆ “Does she really want me?”
- ◆ Weed: abstinence vs harm-reduction
- ◆ Immediate vs Delayed Rewards

# Lisa

## 16 year-old high school student

“Other kids don’t seem to get my jokes and aren’t interested in what I am. I try to make friends, but no one ever calls me back when I call them. I try to talk with my parents about it, but my dad doesn’t understand kids and my mom is always yelling at me. ADHD meds help me do schoolwork, but they don’t help with social stuff.



# Lisa

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- ◆ Triangles and Polarization
- ◆ Rebound
- ◆ Learning social cues
- ◆ New context
- ◆ Cutting and rejection

# Mike

## 21 year-old university student

“My Dad always said I’m smart, but just lazy; maybe he’s right. I got put on academic probation, now I have to drop out. I’m always spacing out and can’t get started on anything until the last minute. I tried my friend’s ADHD med; it helped a lot, but my dad doesn’t want me evaluated for ADHD; he says meds are like steroids.

# Mike

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- ◆ Social anxiety
- ◆ Family skepticism
- ◆ Possible Selves
- ◆ Hidden concerns
- ◆ Sexuality
- ◆ Unacknowledged burdens

# James

## 20 year-old college student

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“If I don’t finish four papers this month, I’m going to be put on probation at school. I just can’t get myself to finish. I’ve had this problem a long time, now it’s worse than ever. I’ve done the research for most of my papers, but I can’t get past the 1<sup>st</sup> paragraph in any one of them. I’m stuck!”

# James

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- ◆ Reassurance and denial
- ◆ Writing papers and EF
- ◆ Immobilization by perfectionism
- ◆ Functions of Internet gaming addiction
- ◆ Becoming a licensed driver

# Problems with Emotions in ADHD: brakes & ignition

- ◆ Much discussion about problems of emotion in ADHD focuses solely on **putting the brakes on** excessive expression of anger/frustration

(Barkley & Fischer, 2010; Spencer, Faraone, Surman, et. al., 2011; Shaw, Stringaris, Nigg & Leibenluft, 2014)

- ◆ But many with ADHD have greater difficulty with ignition—**getting started** on doing things they need to do, keeping other relevant goals in mind (Brown, 2013)

# How ADHD can affect emotions:

Reactions to small frustrations or transient wishes can gobble up all the space in your mind—like a computer virus

- frustration/anger
- hurt feelings
- “got to have it now”
- “what if?”

→ Emotional flooding: too much of one emotion

# Flooding with one emotion

- ◆ While flooded with one emotion, persons with ADHD **tend to forget about other relevant facts or emotions**
  - may forget their love & wish to protect the person—friend, parent, child, co-worker who frustrated or angered them and say or do things that are **too hurtful**



# Too Little Emotion

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Some with ADHD report that they have too little emotion for tasks that are actually important to them; **they can't get started!**

Usually this involves getting **stuck in the concerns of the moment** and not responding to the bigger picture, the longer term.

# Examples of Too Little Emotion for the Bigger Picture

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- ◆ Tired when waking up, snooze alarm repeats while forgetting recent warning from boss
- ◆ Impulsive purchase using funds needed for an important upcoming expense

# ADHD “Hyperfocus” can bias and impair motivation

Focused too intensely on one goal or task, you may forget other goals you have or how actions of the moment may affect your bigger picture

like one who is watching a basketball game through a telescope, you may miss other relevant aspects of the situation

# ADHD Working Memory Impairments can bias and impair motivation

- ◆ Is important for holding in mind multiple thoughts and emotions, relevant to any specific situation or task
- ◆ Impairment in working memory is a key aspect of ADHD
- ◆ Often people with ADHD are unable to keep multiple emotions in mind at same time so they can prioritize

# Strategies to Manage Too Little and Too Much Emotion

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- ◆ Try to anticipate vulnerable situations
- ◆ Consider medication coverage times
- ◆ Utilize less stressful times & contexts
- ◆ Use tools to refresh bigger picture
- ◆ Elicit support from others
- ◆ Recognize inevitability of some lapses

# Key Points

1. Essential problem in ADHD is developmental **impairment of EF**
2. **Brain differences that underlie ADHD** include delay in maturation of some EF areas, disrupted regional communications and inconsistent neuronal communication.
3. Those with ADHD often have chronic **difficulties with motivation in many, but not all situations**

# Key Points

4. Chemistry of motivation is modulated by complex processes resulting from **amygdalar integration of idiosyncratic emotion-laden memories** embedded in **perceptions and various cognitive networks**

5. **Working memory & focusing impairments** characteristic of ADHD **may impair motivation** by causing **emotional flooding or constricted focus**