

Survive or Thrive: Using Lessons from Neuroscience to Re-envision Adolescent Success

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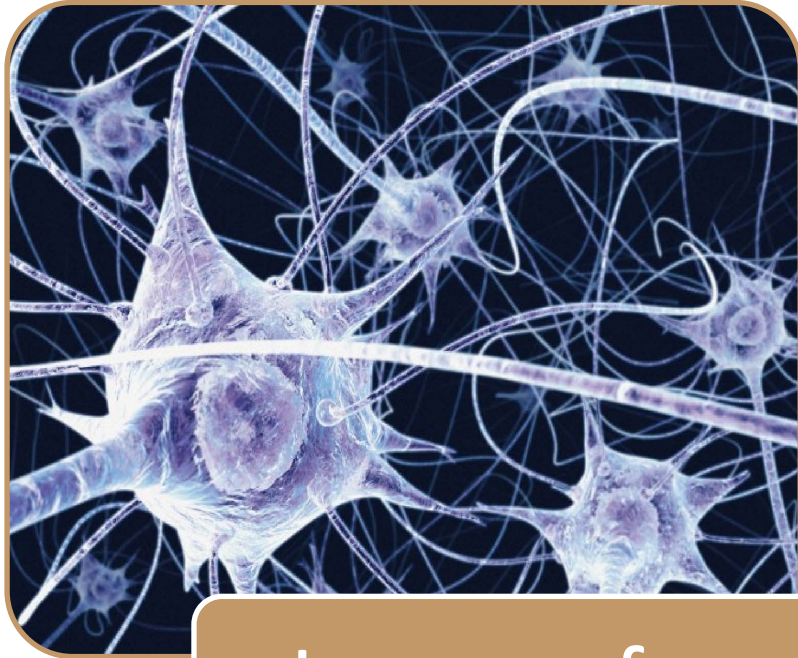
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ETR



Our Journey Today



Lessons from
Neuroscience

Motivation &
Self-Regulation





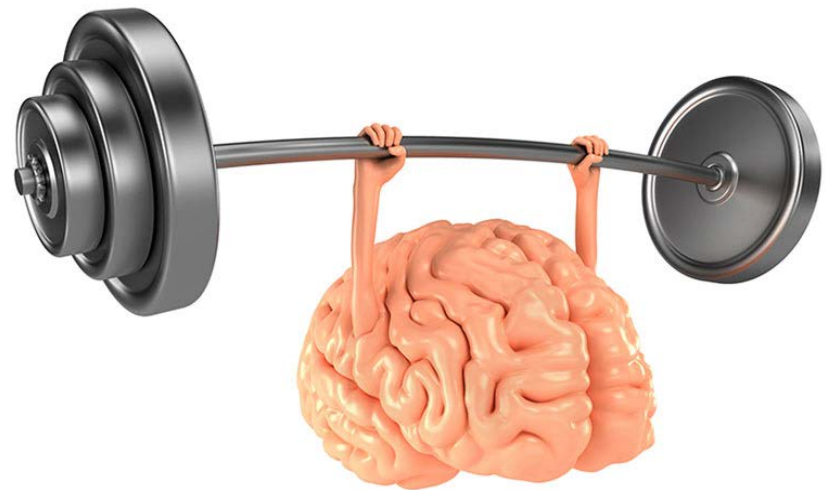
Learning Objectives

- Summarize latest findings in adolescent neurodevelopment;
- Describe the social and affective processes that underlie adolescent behavior; and
- Apply key findings from developmental neuroscience to our current work with adolescents.

Brain Warm-Up!

The part of the brain that is last to develop is the
P_____ F_____ C_____.

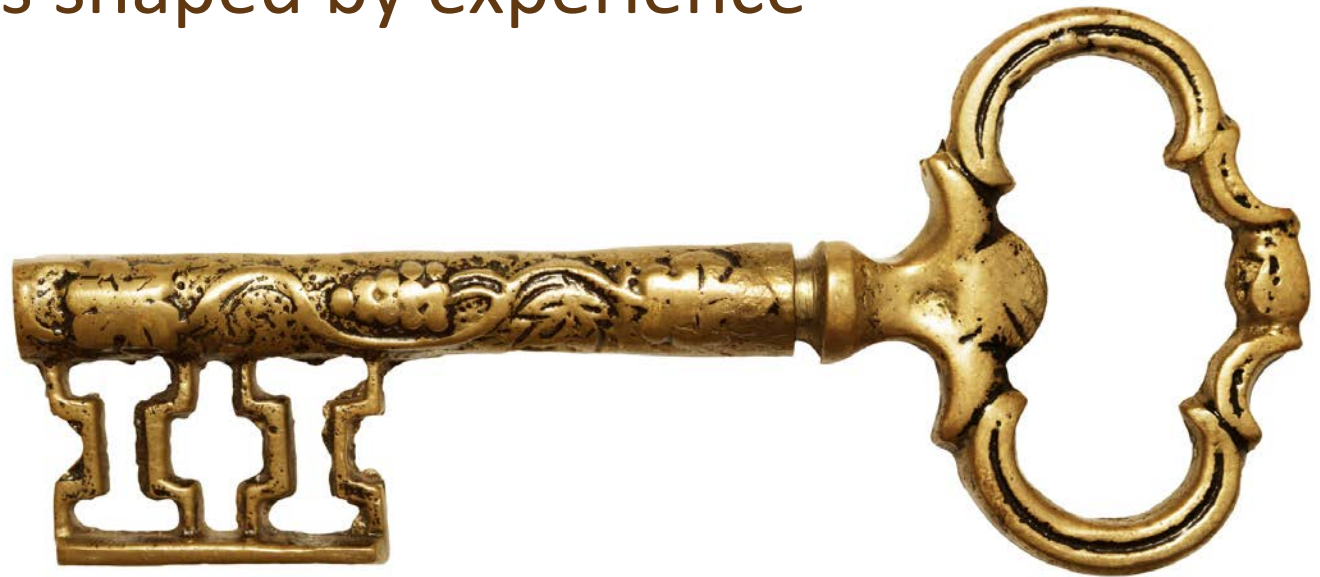
T/F Adolescents are less rational than adults.





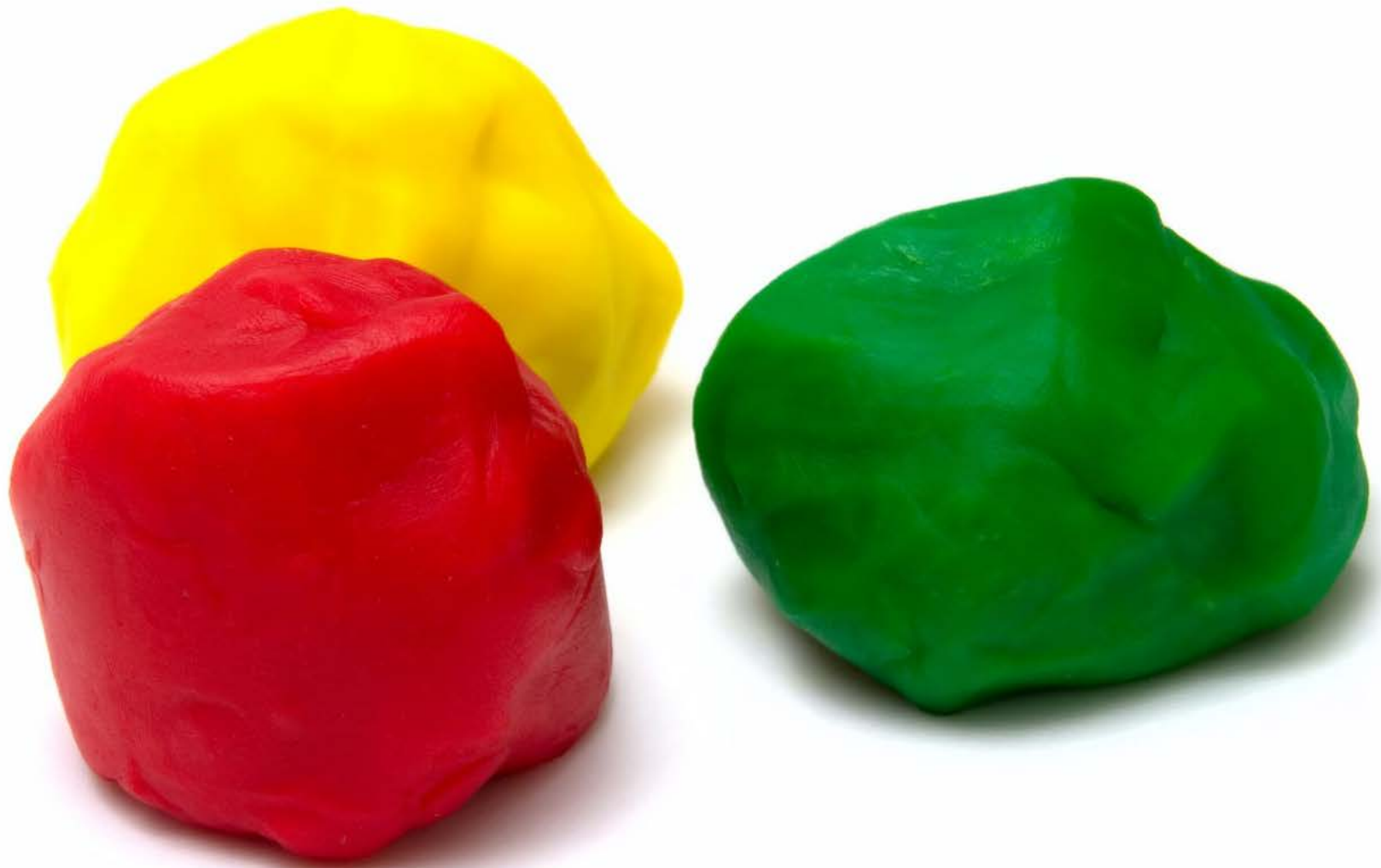
Key Lessons from Neuroscience

1. Neuroplasticity shapes the brain
2. Brain regions mature at different times
3. Plasticity is shaped by experience





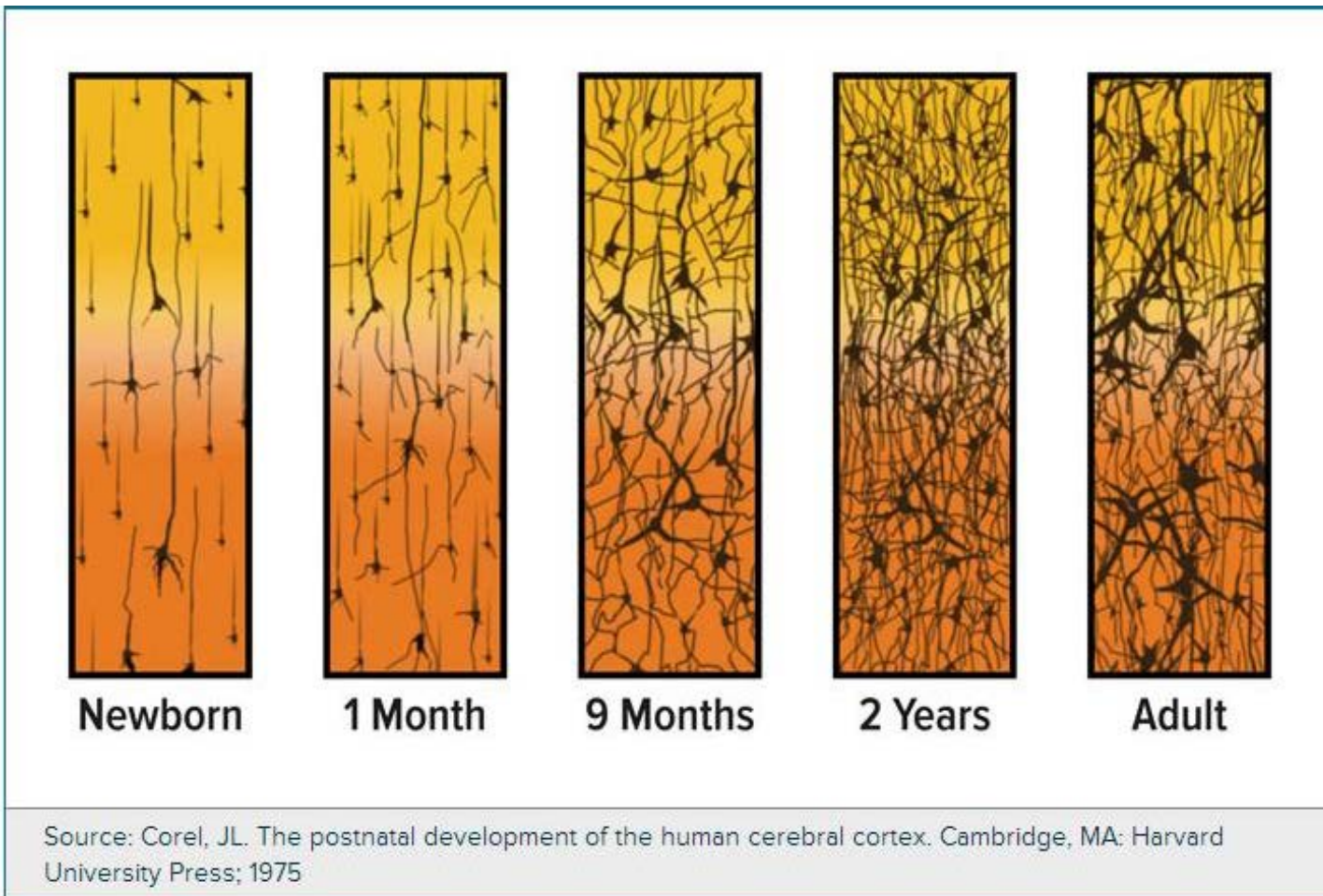
#1: Neuroplasticity shapes the brain



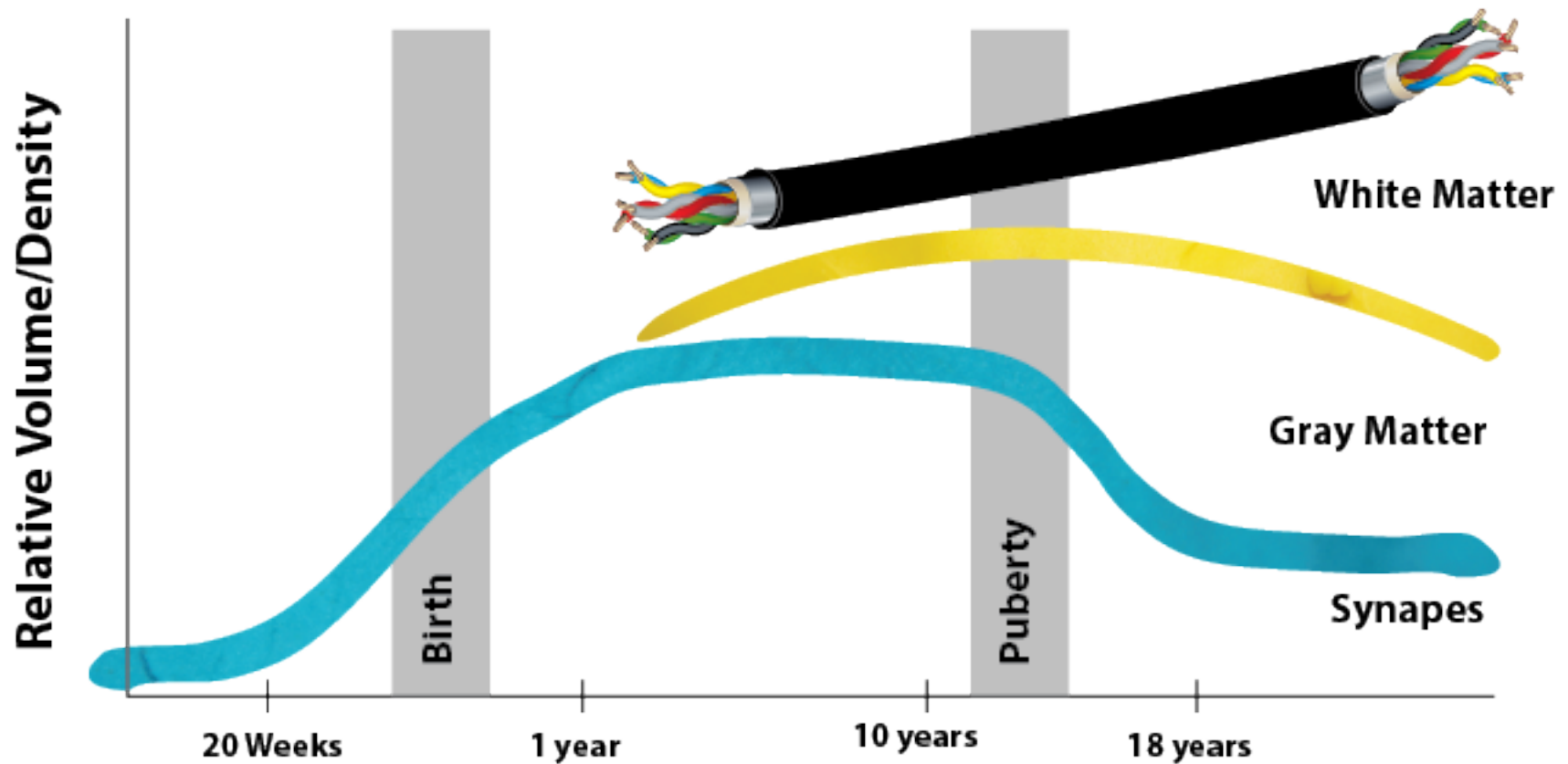




Use it or Lose It! *Or...* Use it to Improve It!



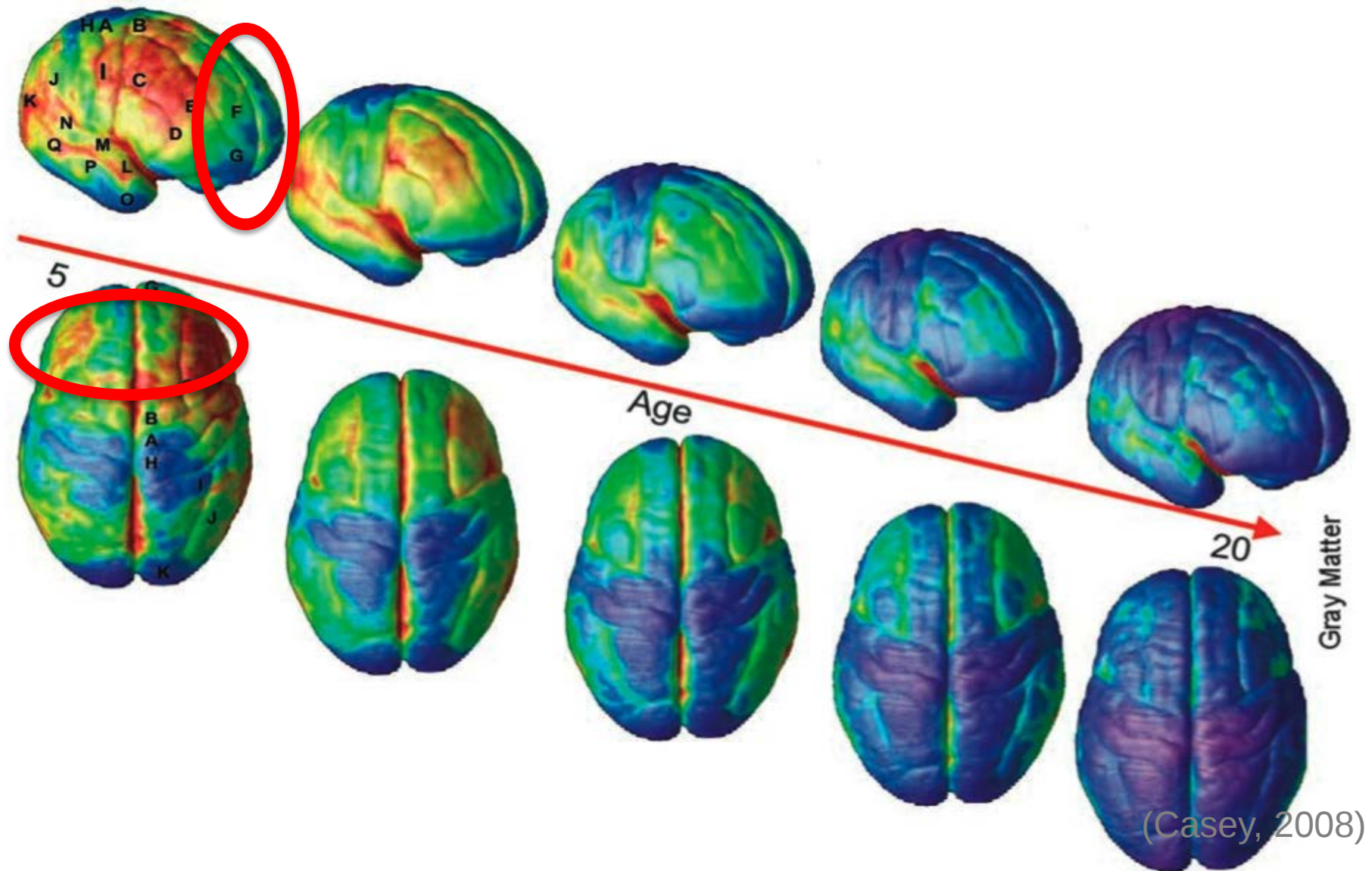
Use it or Lose It! *Or...* Use it to Improve It!



(Giedd, 1999)



#2: Brain regions mature at different times.

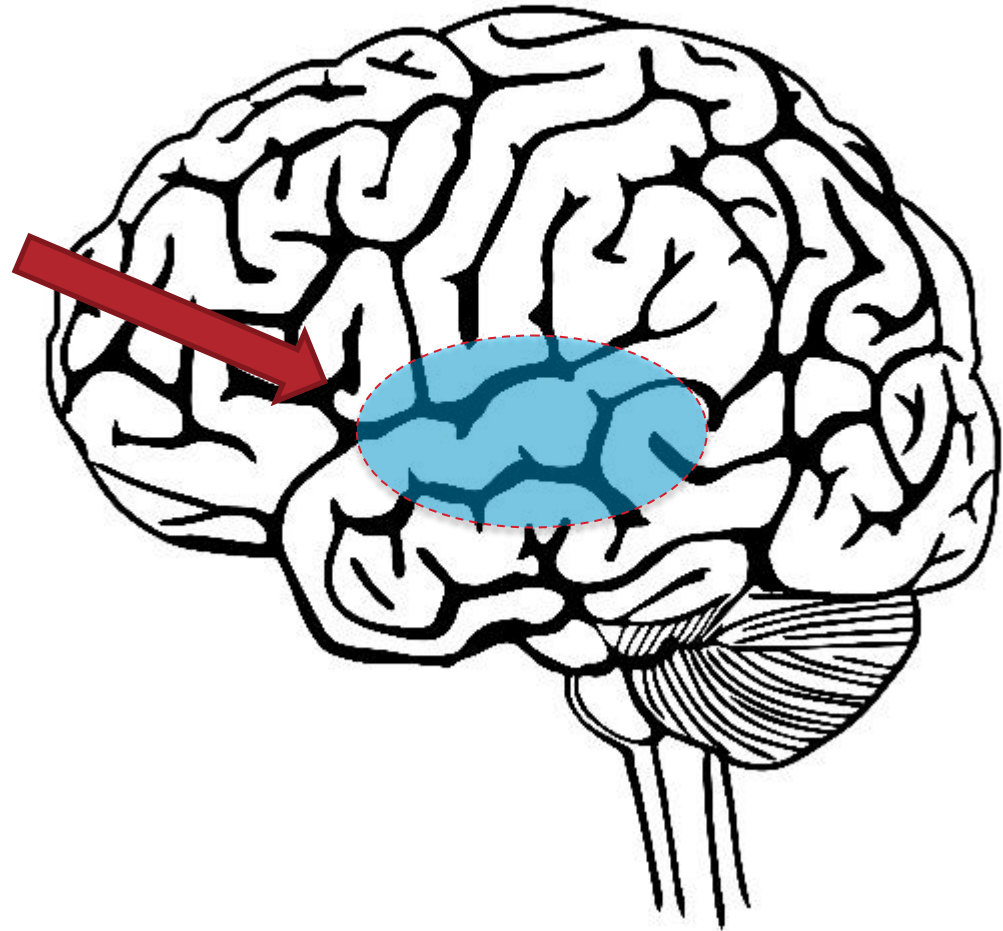




Limbic System = Survival

Limbic System

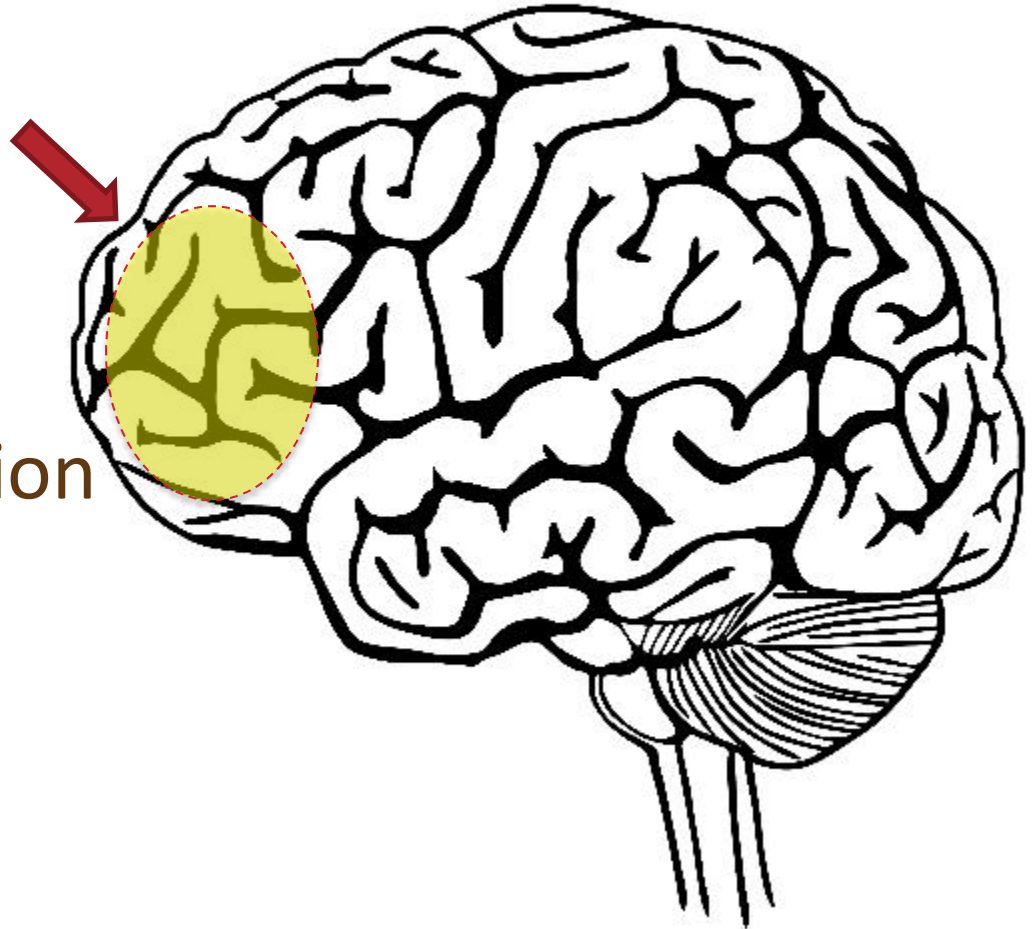
- Motivation
- Emotion
- Memory
- Learning



PFC = Complex Cognitive Skills

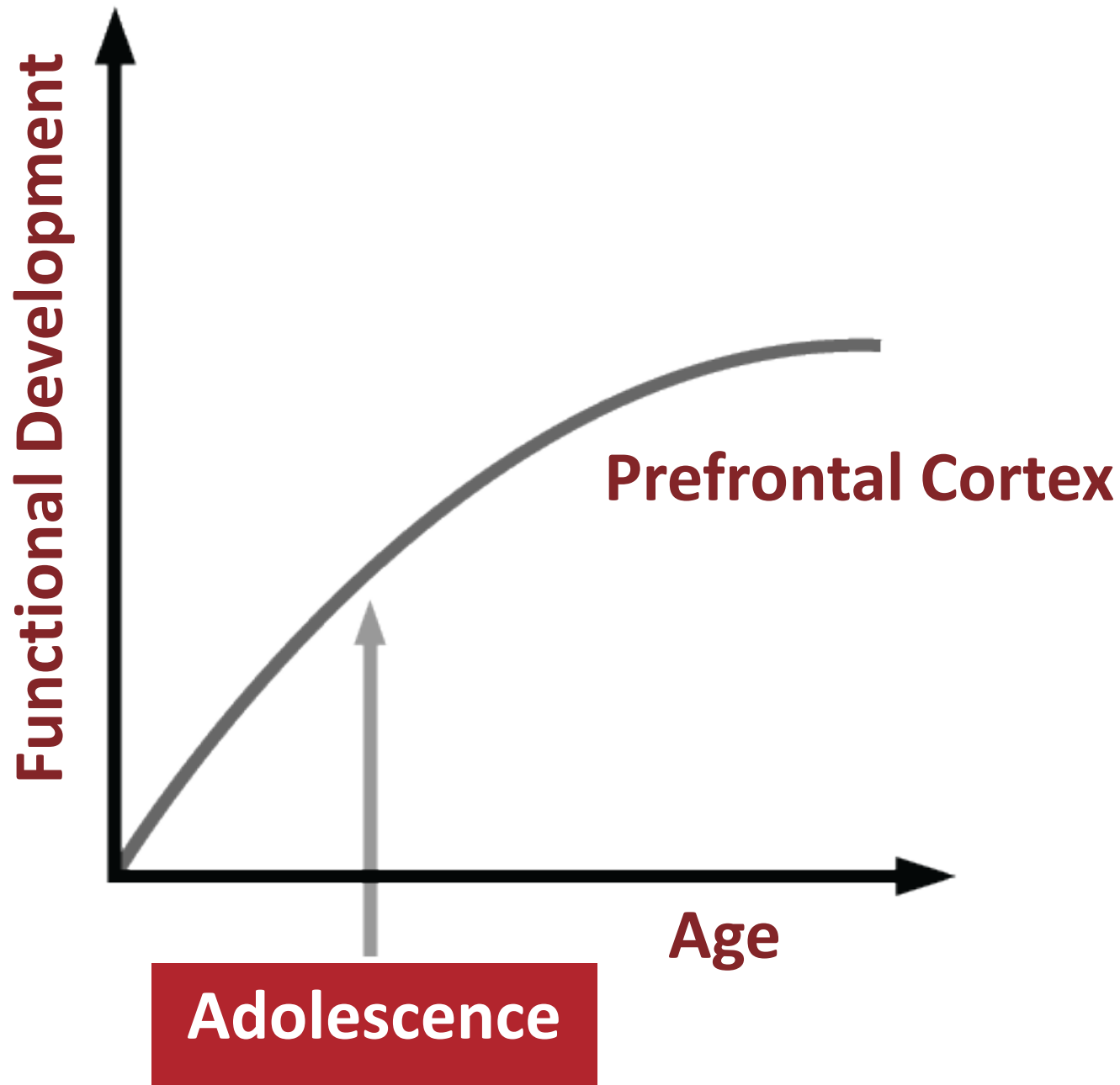
Prefrontal Cortex

- Thinking
- Planning
- Impulse Control
- Emotional Regulation
- Attention



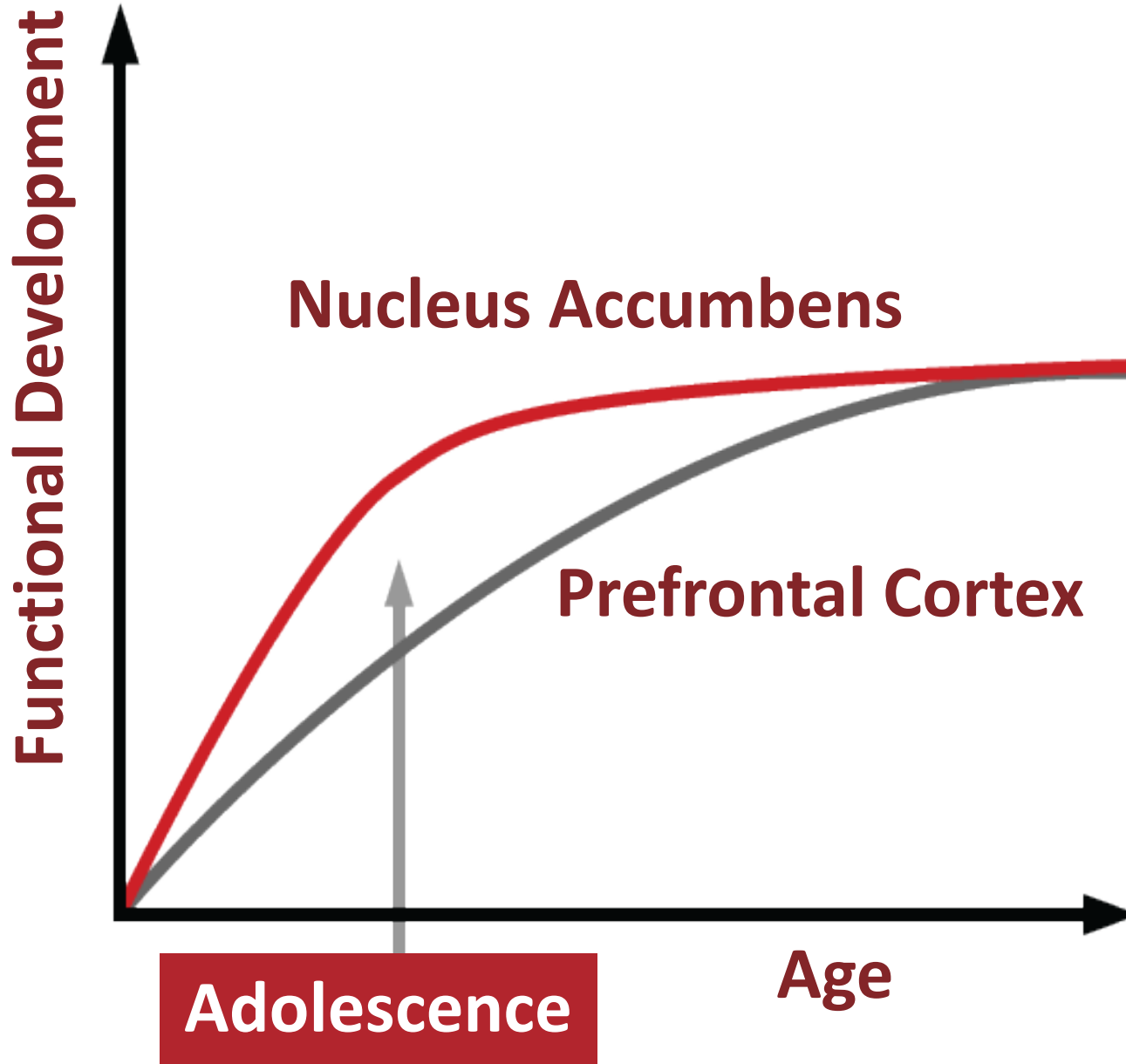


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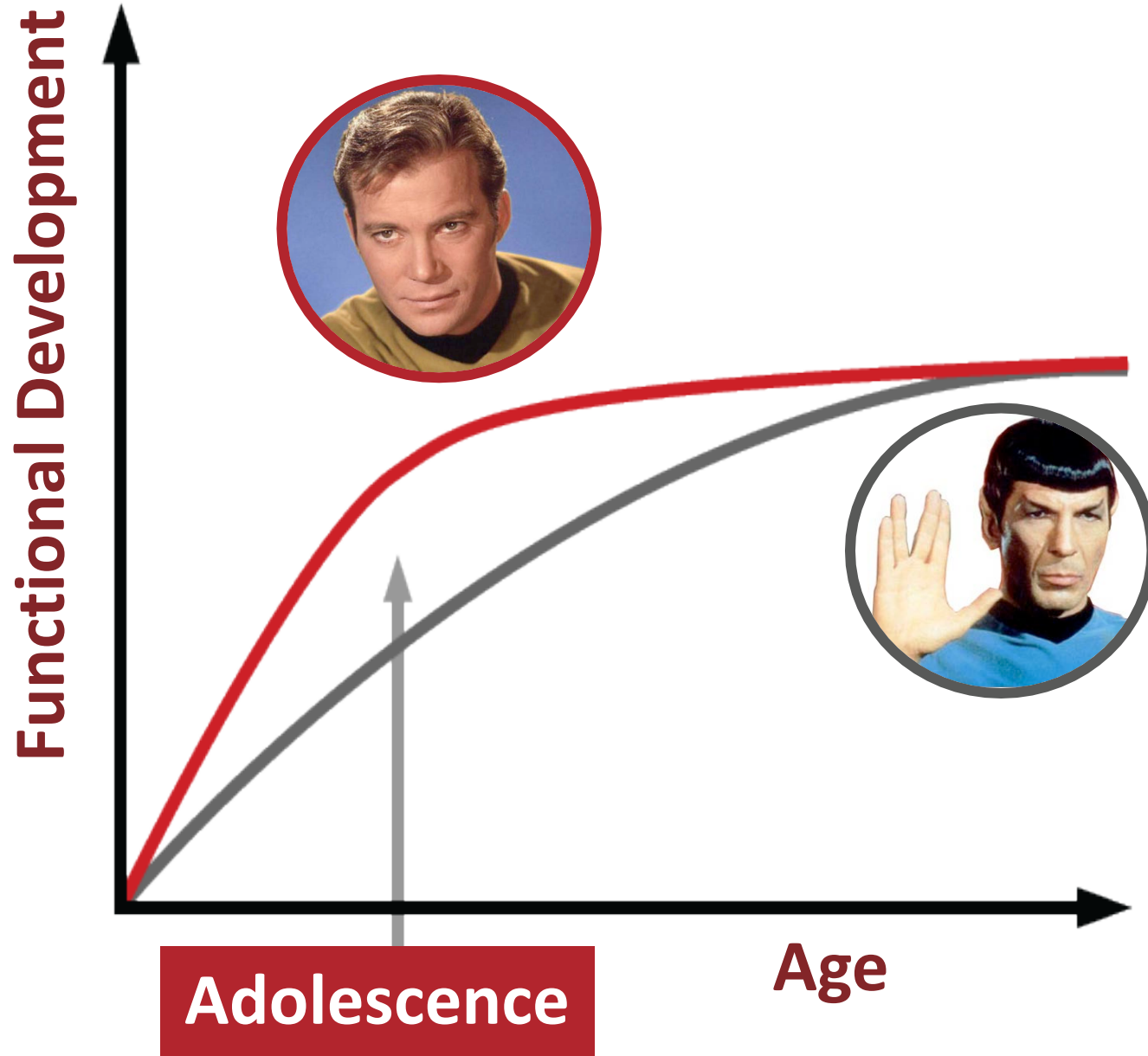


B





B





Hot vs. Cold Cognition



**Affective arousal, time
pressure, social pressure**



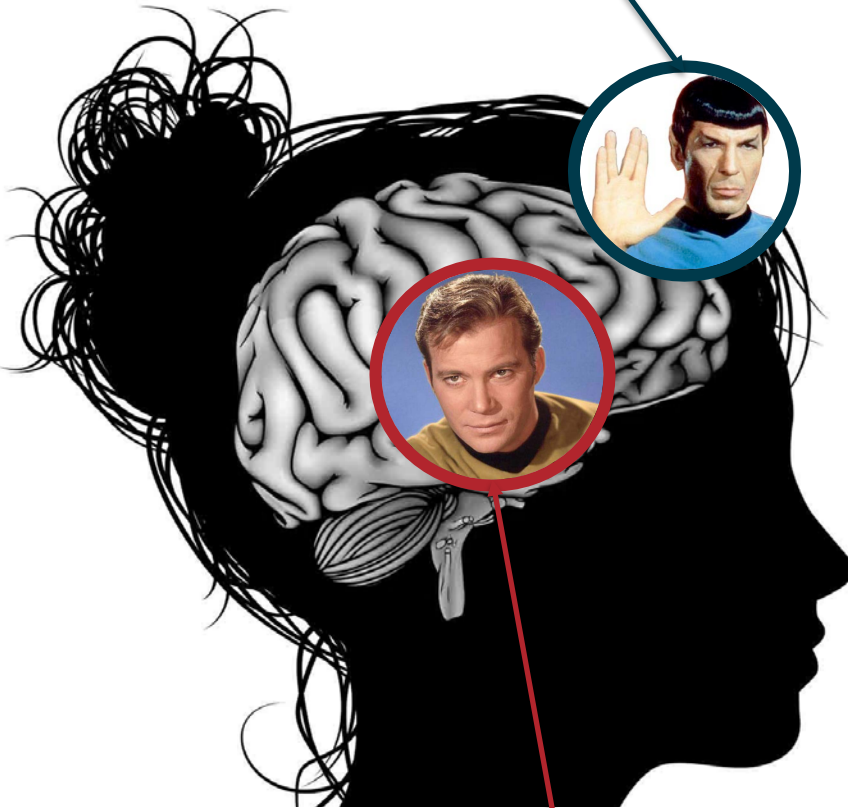
**Non-pressured, “ideal”
conditions**



#3: Plasticity is shaped by experience



Gradual development of cognitive control,
depends on context



Increase in sensation-seeking, novelty-seeking, and motivational salience of peers in adolescence

Positive Growth Trajectories

adaptive exploration,
social competence,
long-term goals

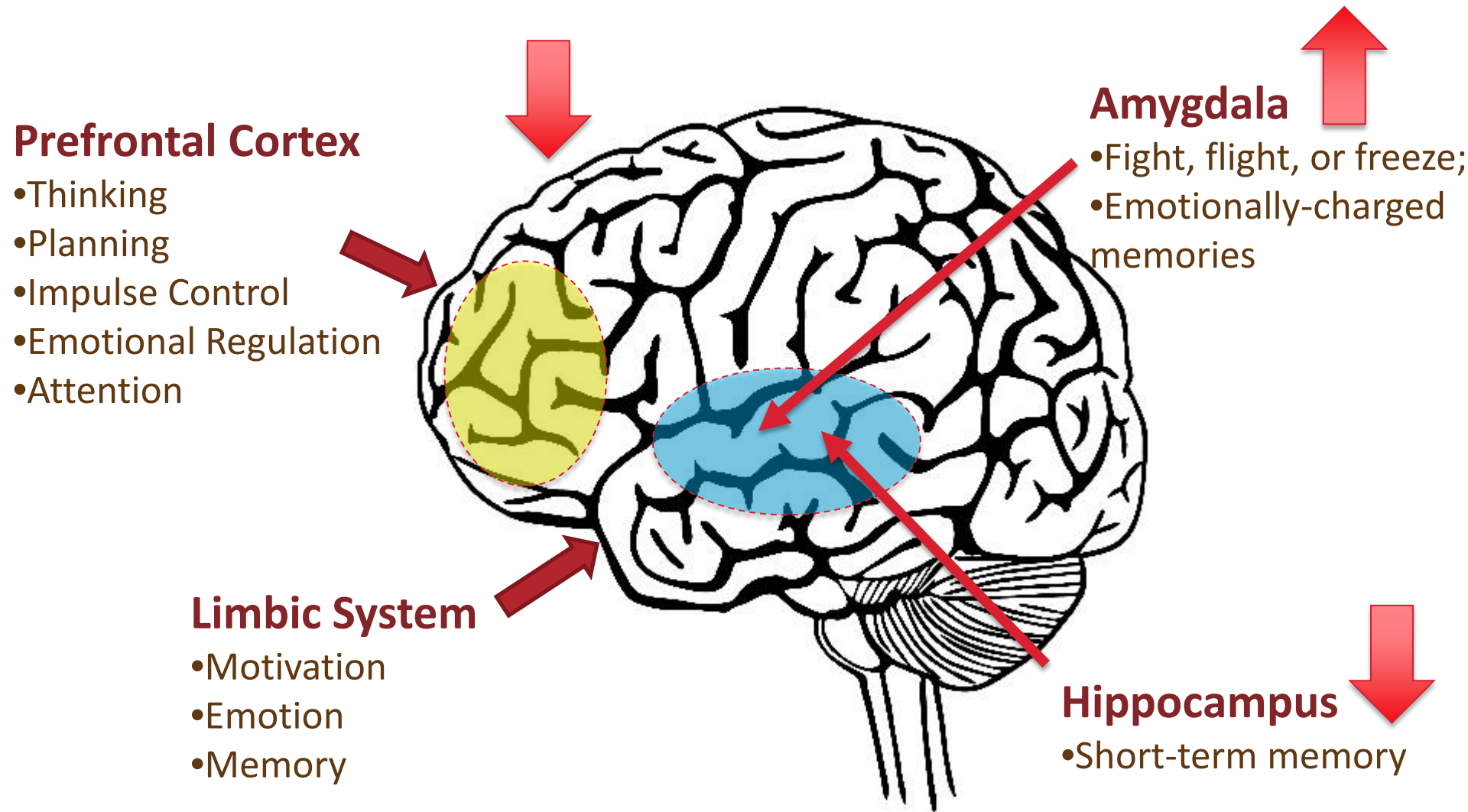
Negative Growth Trajectories

diminished goals, or
motivation towards
negative goals,
excessive risk-taking

(Crone & Dahl, 2014)



Survival Mode: Flight/Fight/Freeze





RED

GREEN

BLUE

ORANGE

BLUE

GREEN

GREEN

YELLOW

ORANGE

BROWN

RED

BLUE

PINK

YELLOW

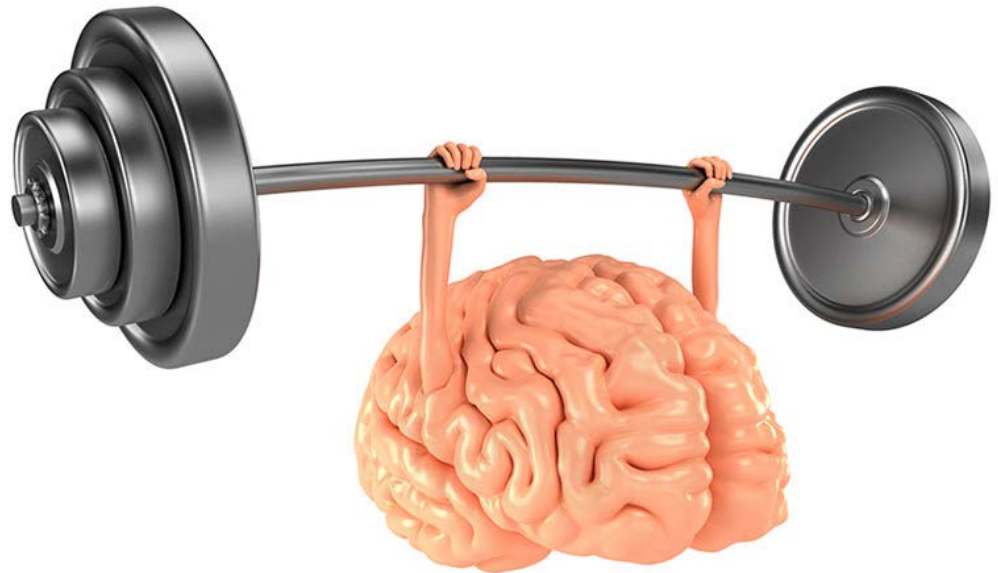
GREEN



Your Plastic Brain!

Type into the chat box:

- one new thing you learned
- one thing that surprised you





Part II



Lessons from
Neuroscience

Motivation &
Self-Regulation





Motivation



Strategies for Motivation

- Know what youth find important – ignite passions!
- Provide opportunities for discovery learning
- Allow some autonomy – scaffold the risk
- Practice tolerating discomfort – failure creates opportunity for learning
- Create a positive and engaging learning environment



(Schenck, 2011)



Self-Regulation





“the **voluntary**
regulation of
attentional, emotional,
and behavioral
impulses when
immediate
temptations **conflict**
with more enduringly
valued goals”





*“Between stimulus and response,
there is a **space**. In that space lies
our freedom and power to choose
our response.*

*In our response lies our growth
and freedom.”*

— Viktor Frankl



https://www.youtube.com/watch?v=QX_oy9614HQ





Benefits of Delayers



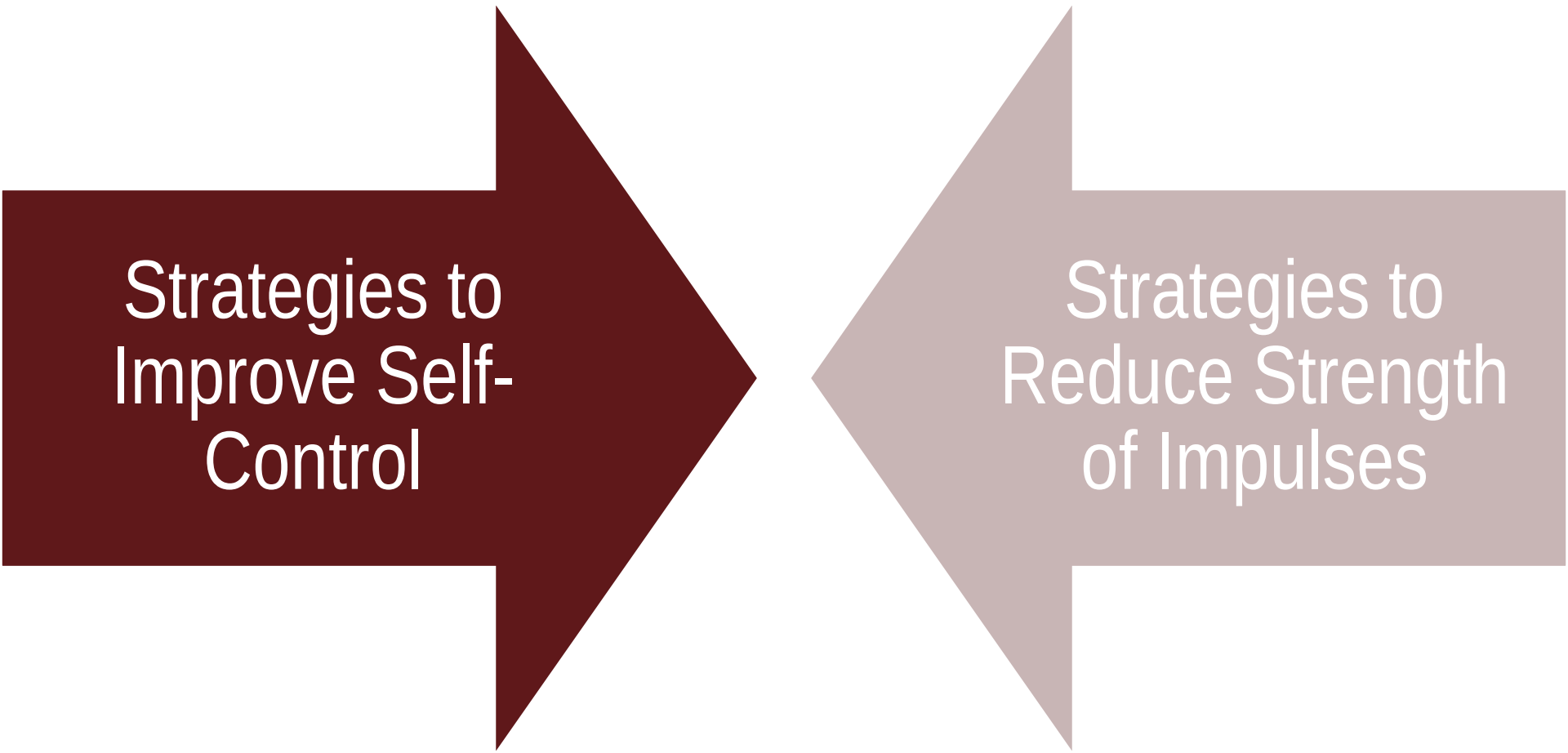
- ✓ Better grades/achievement
- ✓ More positive relationships with adults & peers
- ✓ Less cigarette, drug and alcohol use
- ✓ Better physical health
- ✓ Well-being in adulthood (income, savings & health)





“Non-Cognitive” Skills

- 
- **Determination**
 - **Persistence**
 - **Self-regulation**
 - **Self-confidence**

A diagram consisting of two large, stylized arrows pointing towards each other. The left arrow is dark red and points right, containing the text 'Strategies to Improve Self-Control'. The right arrow is a lighter, dusty rose color and points left, containing the text 'Strategies to Reduce Strength of Impulses'. The two arrows meet at a central point, creating a symmetrical composition.

Strategies to
Improve Self-
Control

Strategies to
Reduce Strength
of Impulses

(Duckworth & Steinberg, 2015)



Strategies

- Situation selection
- Situation modification
- Attentional deployment
- Cognitive change
- Response modulation

- Self-talk
- Growth mindset
- Mental contrasting
(*if-then* plans)
- Physical Exercise
- Practice mindfulness*

(Duckworth, 2014)

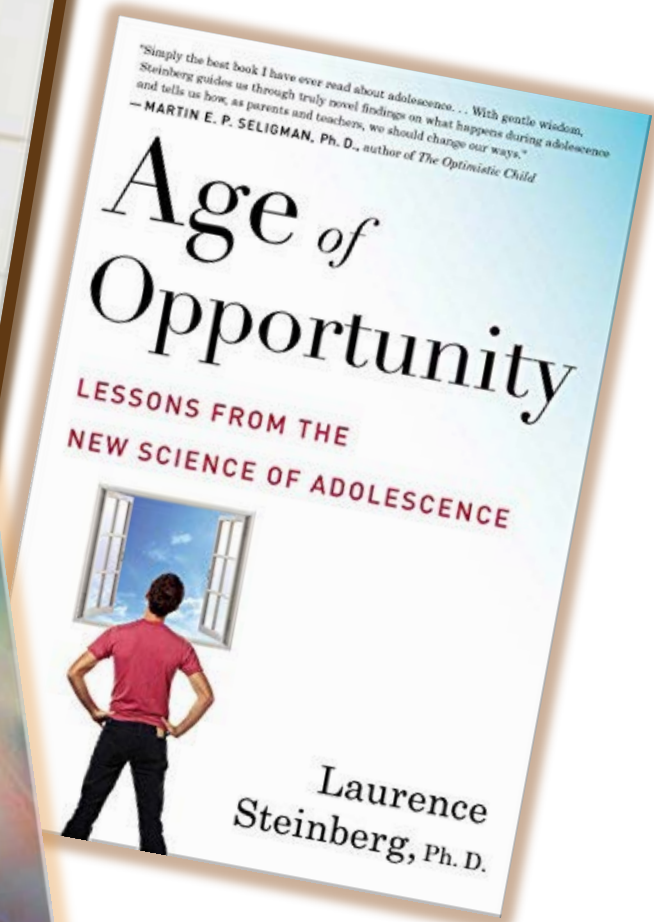
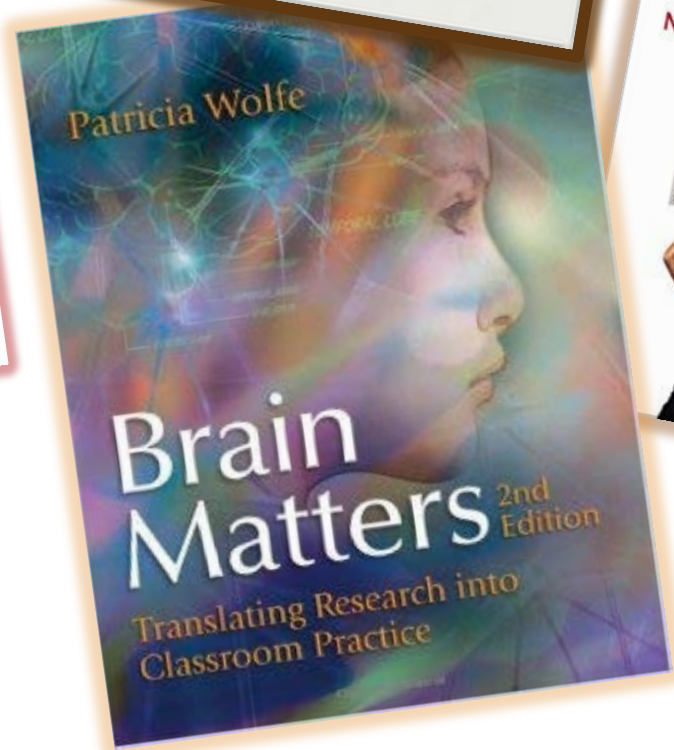
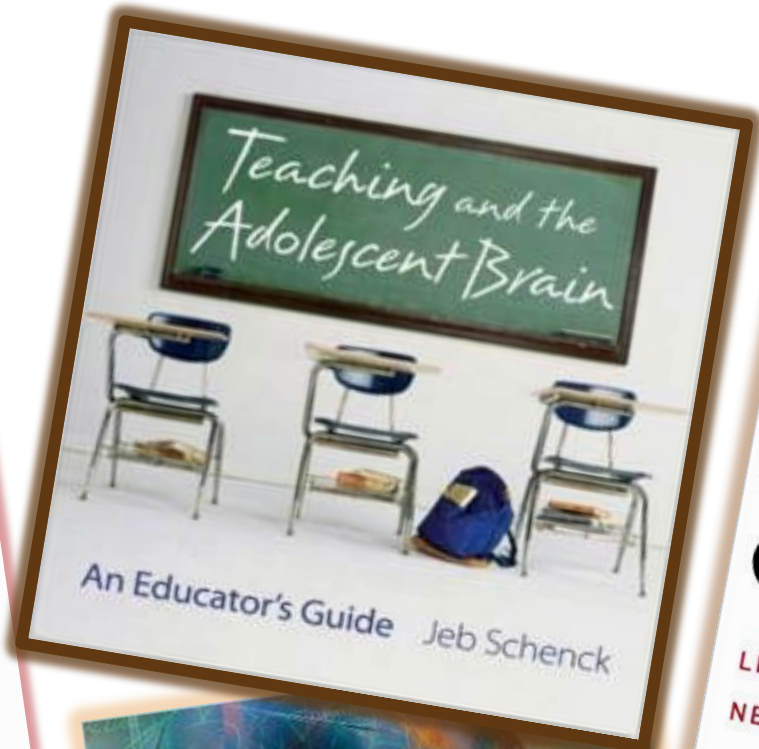
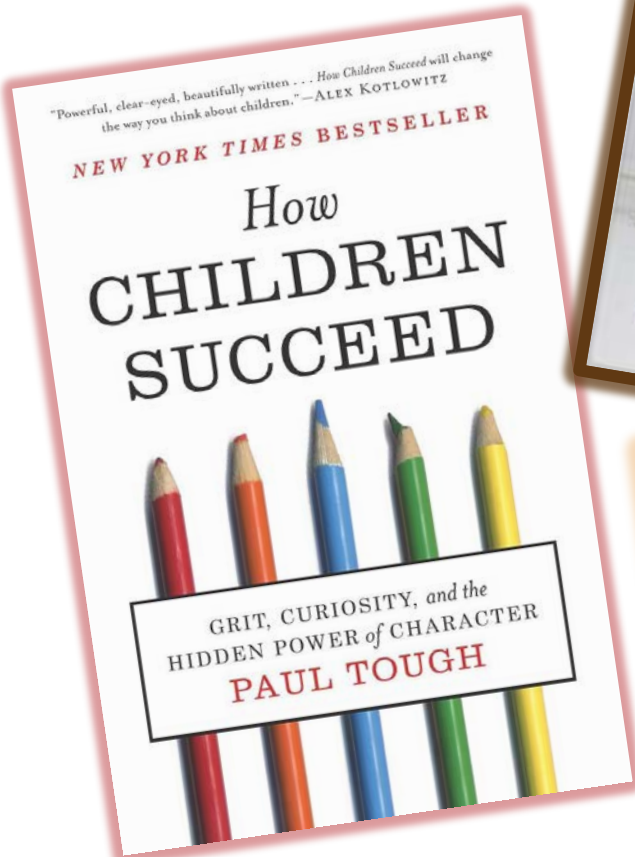
What Are You Thinking?

Instead of...

- I'm not good at this.
- I give up.
- This is too hard.
- I can't make this any better.
- I just can't do math.
- I made a mistake.
- She's so smart. I will never be that smart.
- It's good enough.

Try thinking...

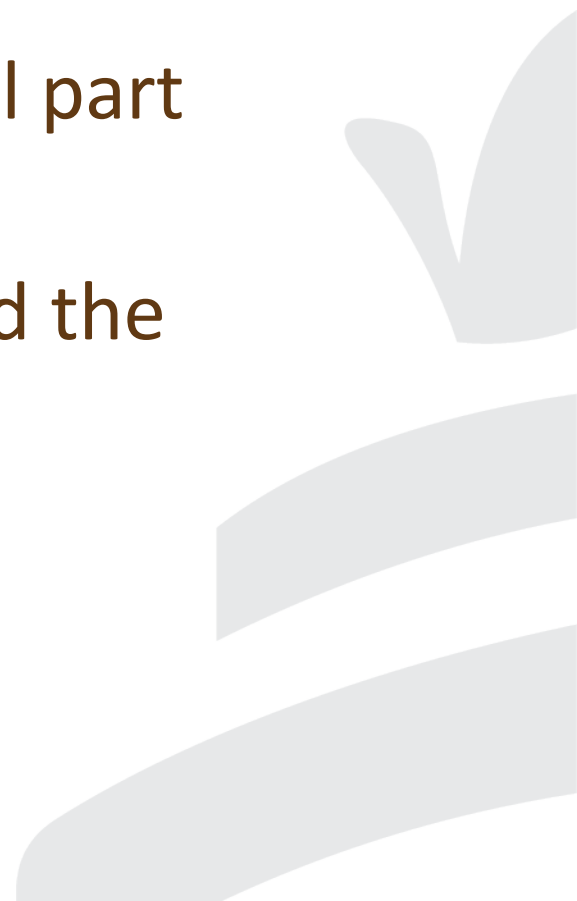
- What am I missing?
- I'll use some of the strategies we've learned.
- This may take some time and effort.
- I can always improve, so I'll keep trying.
- I'm going to train my brain.
- Mistakes help me learn.
- I'm going to figure out how she does it so I can try it.
- Is this really my best work?





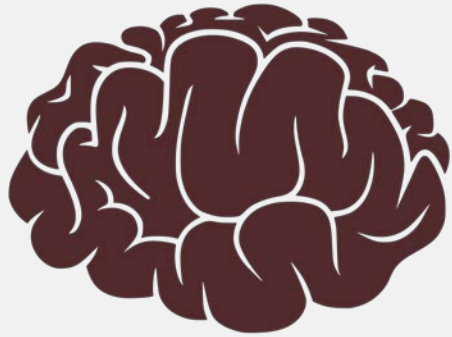
Take Home Points

- Teens crave novelty and rewards, especially around peers
- Teens take risks – this is a normal part of development
- Experience shapes learning – and the brain
- Ignite passions and foster self-regulation



Any
Questions





Write down one thing you learned.



Write down one thing that inspired you.



Write down one action you will take.



Thank You!

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Webinar slides and recording will be available at <http://www.schoolhealthcenters.org>.

Visit www.etr.org for additional information on learning and the brain!