

Neuroscience & Change

AKA Your Brain on Change

Every day scientists are discovering things about how our brains work that have practical application in how we lead, work with others, and adapt to change. This interactive workshop shares five interesting neuroscience facts about how our brains function and provides some simple and practical tips to put that learning into action. Understanding how our brains work can help us be resilient and show up as our best selves when we're introducing and/or adapting to change.

Neuroscience Fact #1: Our Brains are Constantly Assessing for Threat or Reward

Our brains are constantly trying to assess and categorize situations as being a threat or a reward (and trying to minimize threats/maximize rewards). If our brains cannot determine if something is a threat or a reward, it will be categorized as "a very *large* threat". In fact, the brain has 5x more real estate dedicated to "threats" than to "rewards" – it has a negative bias and tricks you into focusing on the negative. When we see something as threatening it increases our motor functions and heart rate (but decreases our cognitive and creative abilities). When we see something as rewarding it opens up perception, increases cognition, increases creativity significantly and improves collaboration. This helps us be more open to change.

5 social situations that create a strong threat or reward response (SCARF):

- **Status:** Perception of where we are compared to others (i.e. will this situation or social encounter increase or decrease my status?)
- **Certainty:** The degree to which we believe we can predict an outcome
- **Autonomy:** A sense of control over one's environment or circumstances
- **Relatedness:** The degree to which we perceive others as similar to ourselves
- **Fairness:** The degree to which we perceive things are equitable

Tips for Managing the Threat or Reward Response

1. Recognize that change will naturally induce a threat response

- Practice awareness: Notice when you may be in an unwarranted "threat" response (take time to pause and assess); listen closely to your body for signs that fight-or-flight has started to kick in
- Breathe – slowly, deeply (in 4; hold 7; exhale 8) to counteract the physiological effects of the threat response

2. Reframe the threat

- Clarify the problem: be clear about what you might see as a threat and what about it is bad for you and others
- Then ask yourself two simple questions:
 - "Is there any possible scenario by which this could actually turn out to be a good thing someday?"
 - "What can I (and my team) do to make this scenario come about?"... In other words, "How can we turn this event into a good thing that we can all celebrate someday in the future?"

3. Proactively address SCARF (status, certainty, autonomy, relatedness, fairness) needs. For example,

a. Seek out as much information as possible during the course of change (foster certainty)

- Identify what you know/what you don't know
- Ask when information may be available
- Remind yourself about what will stay the same

b. Take control of what you can and let go of the things you don't control (foster autonomy & certainty)

- Identify the aspects of your work (or environment) that you personally control
- Be conscious of the day-to-day simple choices that you are able to make autonomously
- Identify what you do not have control over and decide to “let it go”

c. Build relationships with others (foster relatedness)

- Intentionally build and take time for relationships at work
- Identify similarities with others
- Work with others on a common challenge (makes someone part of the in group)
- Recognize each other (immediate, unexpected, tangible, personal, public)
- Show vulnerability – ask for help

Neuroscience Fact #2: Our Moods are Physiologically Contagious

Our limbic system has an open loop design. One person transmits signals that alter hormone levels, cardiovascular functions, sleep rhythms, even immune functions inside the body of another. Both positive and negative emotions are literally contagious. Moods that start higher in an organization tend to move the fastest and positive moods are more contagious than negative moods. A positive mood can't be faked (our limbic systems are smarter than that and can see right through someone trying to fake it). Emotions spread very quickly (at milliseconds) and often below the conscious awareness level.

Tips for Managing Mood Contagion

- Pay attention to your mood
- Start with self-awareness and then work to strengthen your emotional leadership
- Practice gratitude (boosts dopamine)
- Talk about positive goals and dreams – it activates brain centers that open you up to new possibilities
- Use humour judiciously
- Spend your personal time with people who positively impact your mood

Neuroscience Fact #3: Mindfulness, Compassion, Hope and Playfulness Help You Think

The body responds to all stress (major and minor stress) by activating the sympathetic nervous system (SNS). When the SNS kicks in, the vaso-constrictors epinephrine and norepinephrine are secreted (heart rate, blood pressure and pulse rate increase). Corticosteroids are also secreted which suppresses the immune system and inhibits neurogenesis. Cognitive, perceptual and emotional impairment are the result (you aren't open to new ideas, emotions, people, or change).

The only way to counteract the negative effects of the SNS response is to kick in the parasympathetic nervous system (PNS). When the PNS is activated, oxytocin and vasopressin are released. These hormones open up the blood vessels and this promotes neurogenesis. 4 things that studies have shown you can do to activate the PNS:

1. **Mindfulness:** meditation; yoga, tai chi; prayer (if you are praying to a loving God, not a vengeful or blaming one); physical exercise in moderation but consistently
2. **Compassion:** being with someone you are in a loving relationship with; having pets you can pet (e.g. dogs, cats, horses – not fish); volunteering and helping those less fortunate; helping family members
3. **Hope:** thinking and talking with others about a future dream, personal or shared; being hopeful about the future
4. **Playfulness:** laughing with others

Tips for Practicing Mindfulness, Compassion, Hope and Playfulness

If you want to improve your ability to think (and help others do the same) be deliberate about getting (and providing) ongoing doses of mindfulness, compassion, hope and playfulness at work and at home. You can't save it up for the weekend and just regenerate then (there is no such thing as "binge" rest and renewal).

Neuroscience Fact #4: Old Neuropathways Never Die

When you form a new habit, the old neural pathways are not eliminated, but become weaker with dis-use. This is one reason why change is often so difficult for people. It takes approximately 21 days of repeated effort to establish new wiring in the brain.

Tips for Building New Neuropathways

Getting yourself or others to change is not done by focusing on eliminating old behaviors, but by focusing on creating new ones.

- If you're trying to make a change, focus on the new thing you want instead of the old thing you're trying to eliminate.
- Practice new skills and behaviors consistently over a period of time (for at least 21 days).
- Start small and make it specific
 - Choose one thing that is insanely doable
 - Be specific about when you will do it
 - Create reminders for yourself
 - Seek support and accountability

Neuroscience Fact #5: The Body Influences the Brain

Our bodies and minds are constantly conversing and take cues from each other. It has long been recognized that our brains have an impact on our physical state but the reverse is also true. Our non-verbal body language not only influences others, but actually influences our own physiology. Only 2 minutes of being in the "power" pose will change the hormone levels in your brain (increasing testosterone and decreasing cortisol) which in turn will increase your ability to be assertive, confident and comfortable.

Tips for Using Your Body to Influence Your Brain:

Watch your own and others' body language (check in throughout the day). Try changing your own body posture if you need to change your mental state.

- Power pose
- Smile
- Take a brisk walk
- Move to a different room

Take Aways???

What will you do with this information?

1. What one or two things are you taking away from this presentation that you want to apply in your life?
2. What specifically will you do every day for the next three weeks (what one thing is insanely doable for you)?
3. When will you do it?
4. How can you remind yourself of this (e.g. appointment on your calendar, post-its, alarms, etc.)?
5. Who can you engage as a support ally?

Resources and References

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Rock, David (2009). *Your Brain at Work: Strategies for Overcoming Distraction, Regaining Focus and Working Smarter All Day Long*. New York: Harper Collins.

Dr. Norman Doige (author of The Brain That Changes Itself) -
<http://www.bing.com/videos/search?q=the+brain+that+changes+itself&view=detail&mid=9D7C8B3341570DA87F899D7C8B3341570DA87F89&FORM=VIRE>

Dr. David Rock (Founder of Neuroleadership Institute) -
<http://www.bing.com/videos/search?q=david+rock&view=detail&mid=B30B0B5D6EF2F408135AB30B0B5D6EF2F408135A&FORM=VIRE>

Dr. Richard Boyatzis (Professor at Case Western Reserve University) -
<http://www.bing.com/videos/search?q=richard+boyatzis&&view=detail&mid=F1969A3FEFBD5CCF011CF1969A3FEFBD5CCF011C&FORM=VRDGAR>

Dr. Amy Cuddy (Professor at Harvard Business School) -
https://www.ted.com/talks/amy_cuddy_your_body_language_shapes_who_you_are