

---

# The Ecology of Resilience



## The Neuroscience of Amplifying Strengths

---

Threshold GlobalWorks (c) 2022

Laurie Leitch, PhD

# True or False..... Or ...“sort of”

- ✓ I have a self-care practice that supports my physical & emotional health
- ✓ I know that when challenges arise I have a support system to rely on
- ✓ If I learned a new way to tackle challenges I would be excited

# Today's Presentation Goals

- To offer a lens that **excites you** about ways to think about your life, your organization, and the vulnerable populations (children & adults) that you serve
- To describe the power of 2 of SRM's **core neuroscience-based concepts** for creating **coherence** in the design of policies, programs, and practices
- To explore how **neuroscience** can offer a roadmap of concepts (and skills) that can contribute to the health of your nervous system and the “nervous system of systems”

# What is an “Ecology” of Resilience?

- An orientation that incorporates an understanding of the interdependent layers/systems of influence that affect potential and positive outcomes;
- It includes the **individual-level** and **systems-level** factors that help deal with change and complexity in health-enhancing ways;
- It recognizes **the limitations** of intervening in just **one part** of a system.

# The Basic Building Block: Your Brain

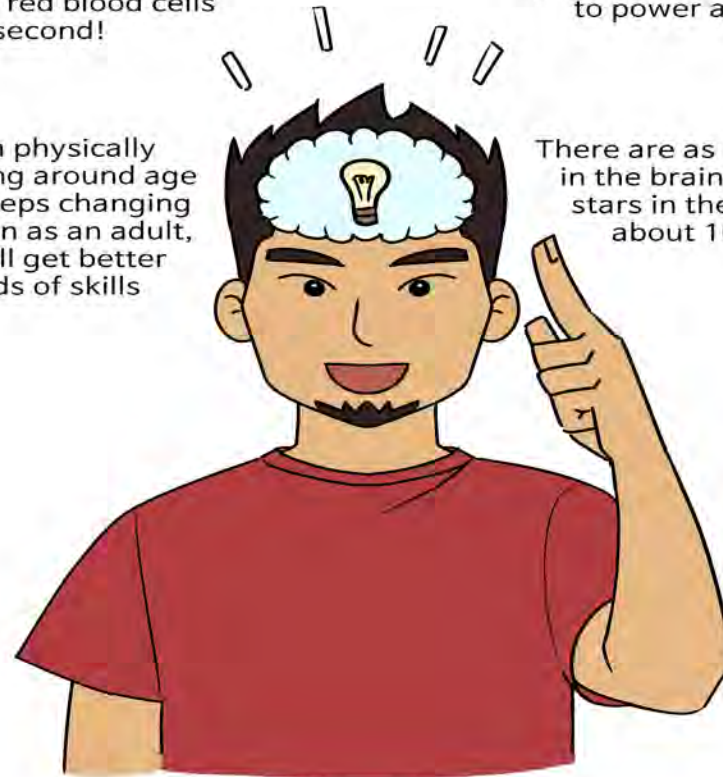
## Facts About Your Brain!

By design, our brains are all about growth and change—as is the whole human body. Your body makes about 2 million new red blood cells every second!

Do you know how powerful your brain is? It can produce enough electricity to power a lightbulb!

Your brain physically stops growing around age 18. But it keeps changing forever. Even as an adult, you can still get better at all kinds of skills

There are as many neurons in the brain as there are stars in the milky way: about 100 billion



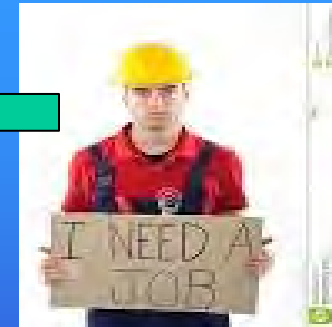
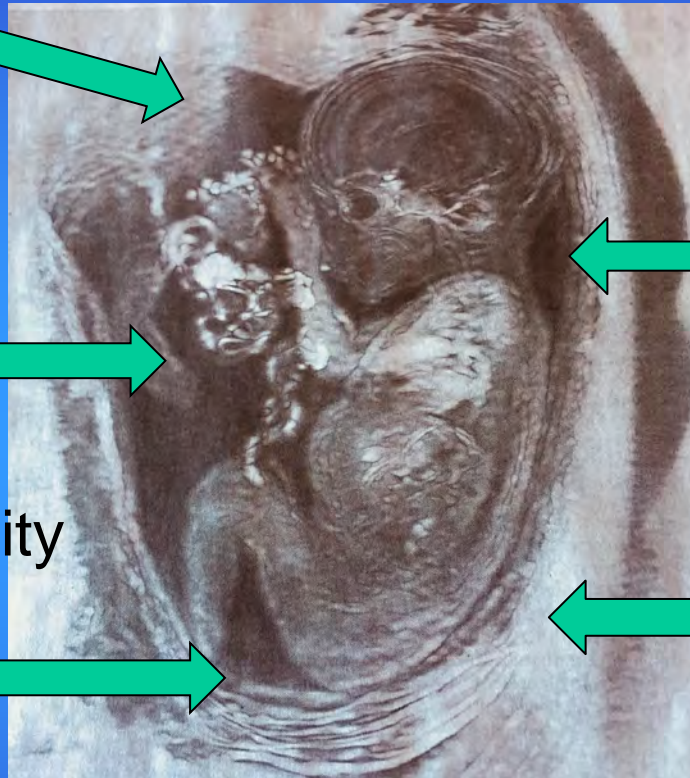
You have the power to change your brain

# We Have a Social Brain and it is shaped by many systems



Stress  
chemicals

Food scarcity



The human nervous system begins to be shaped in utero by other systems

# The Impact of Stress, Distress, & Trauma

- “The brains of children living in ‘marginalized communities’ show tangible alterations”
  - emotional regulation
  - cognitive function
- These effects can have a ripple effect across generations

( from: Cerebrum Dana Foundation.  
4/22)

- We also know that parents of special needs children can have PTSD

-in one study of hundreds of parents with children on the spectrum 18.6% met the criteria for PTSD.

( from:  
<https://disabilityscoop.com/2020/03/10> )

---

Fear can live in the bodies of children and adults as well as in the bodies of communities

# The Body As Storyteller

"Trauma has nothing to do with cognition. It has to do with the body being reset to interpret the world as a dangerous place."

van der Kolk, 2014





# The Good News is the brain can change for the better:

In ways that:

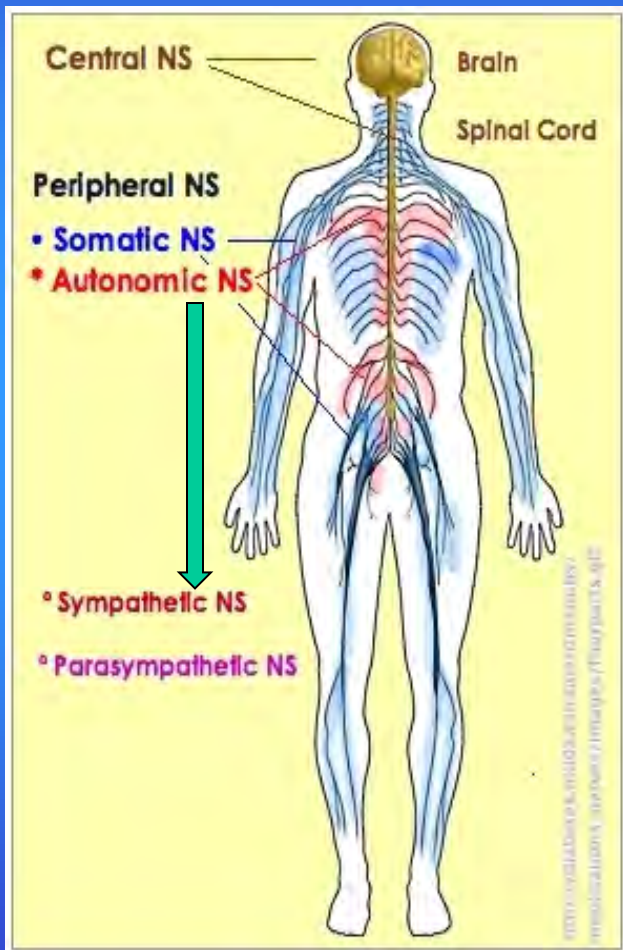
- increase self-regulation and decrease reactivity
- increase pro-social behaviors
- create a climate of health in the body by decreasing stress chemicals

because of  
neuroplasticity:

The brain's capacity to grow new neurons and prune away others



# The Human Nervous System: this is the system we have the most control over



SRM focus:

The **2 branches** of the ANS



✧ Sympathetic: activator



✧ Parasympathetic: calms

✧ As in all of the natural world there are cycles and rhythms in our human bodies

# Our Natural Balance:

All of us are wired with the potential to be resilient

We can learn

- 1) to stay inside the Resilient Zone or
- 2) return to it faster
- 3) deepen the Rzone through skills practice and positive experiences

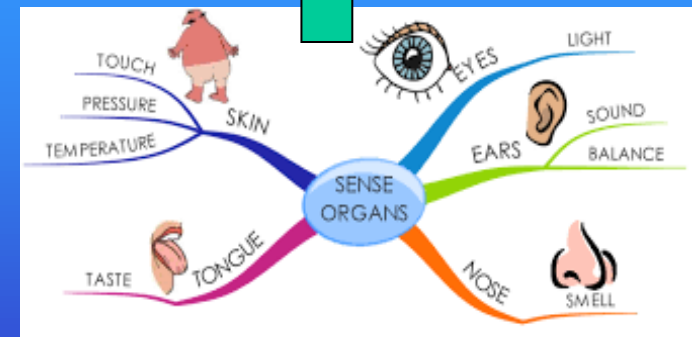
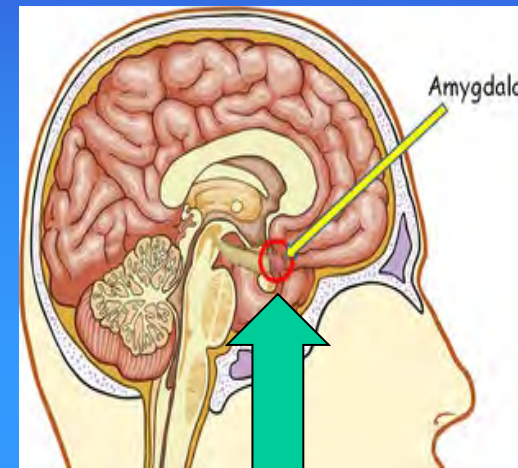


## The Science Behind Resilience:

Learning to control reactivity, decrease stress chemicals,  
and boost pro-social behaviors in children & adults

# A Key Player in Shaping Our Behavior: The Amygdala: Our Brain's Smoke Detector

- Has a “negativity bias”
- Translates sensations from the outside world
  - What's unexpected/novel?
  - Is there a threat?
- It can become mis-calibrated
- assesses safety: below our level of consciousness
  - It creates patterns from highly charged emotional memories such as fear & terror that can become “triggers”



# Stressful Event

or

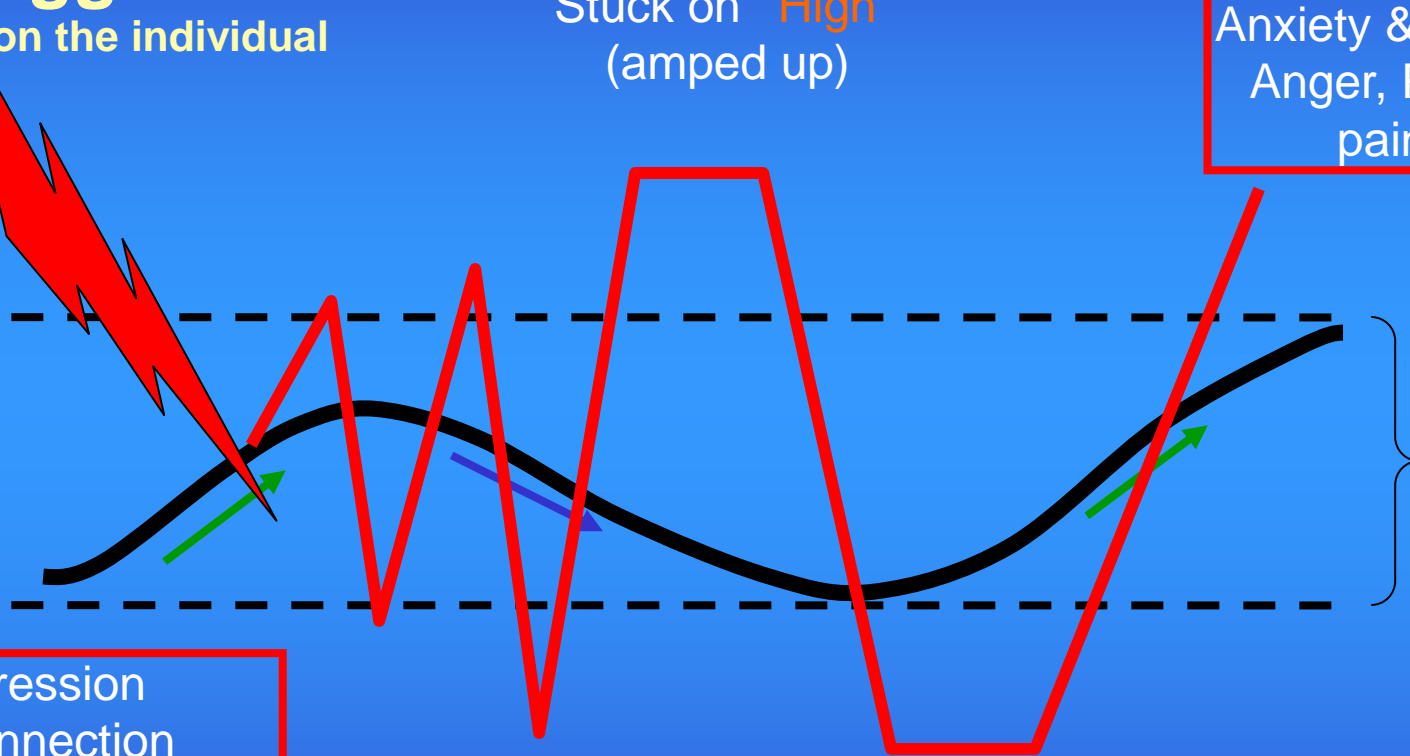
“Triggers”:

Impact on the individual

Bumped out of Resilient Zone

Stuck on “High”  
(amped up)

Hyperactivity  
Hypervigilance  
Mania  
Anxiety & Panic  
Anger, Rage  
pain



Resilient Zone

Depression  
Disconnection  
Exhaustion/Fatigue  
Numbness

Bumped out of Resilient Zone

Stuck on “Low”  
(no “juice”)

# “Brain Food”

2 interdependent essentials that the nervous system must have in order to do its best & stay in and deepen the Rzone

## 1. Safety

When there is a sense of safety, better relationships can be created

Without a sense of safety stress chemicals build up, toxify the body, and shut down clear thinking

## 2. Attachment

When there are positive relationships, the amygdala “relaxes” its vigilance

When the amygdala relaxes, better relationships can be created

# Safety in the Body Comes First

## The Autonomic Nervous System:

- ✓ Influences every organ
- ✓ Mobilizes us
- ✓ Calms us
- ✓ Can get “out of whack”

## The Amygdala:

- ✓ A key influence in our perceptions of safety
- ✓ Wired to scan for novelty, especially “threatening” novelty
- ✓ Must be **inhibited** to function properly
- ✓ Can become miscalibrated

# Attachment: Shaping Resilience

- Attachment to caring individual(s) shapes the nervous system
- Bonding begins during gestation
  - Access to information and resources
  - Neighborhood & Community programs

## A systems-level example of attachment:

- Our assessments need to take into account the degree to which families know how to provide and to access **safety** and **attachment-oriented** services/experiences
- As providers how do we **advocate** for those in the community?



---

# Expanding the Nervous System Lens: thinking ecologically

The processes at the individual level also  
characterize the systems level

Including the the need for Safety and  
Attachment

# SRM: Expanding Resilience from Individuals to Systems of All Sizes

## Resilient Zone: Systems-Level:

Developing “cultural software” that creates the capacity for principled, embodied & generative work teams **And communities**

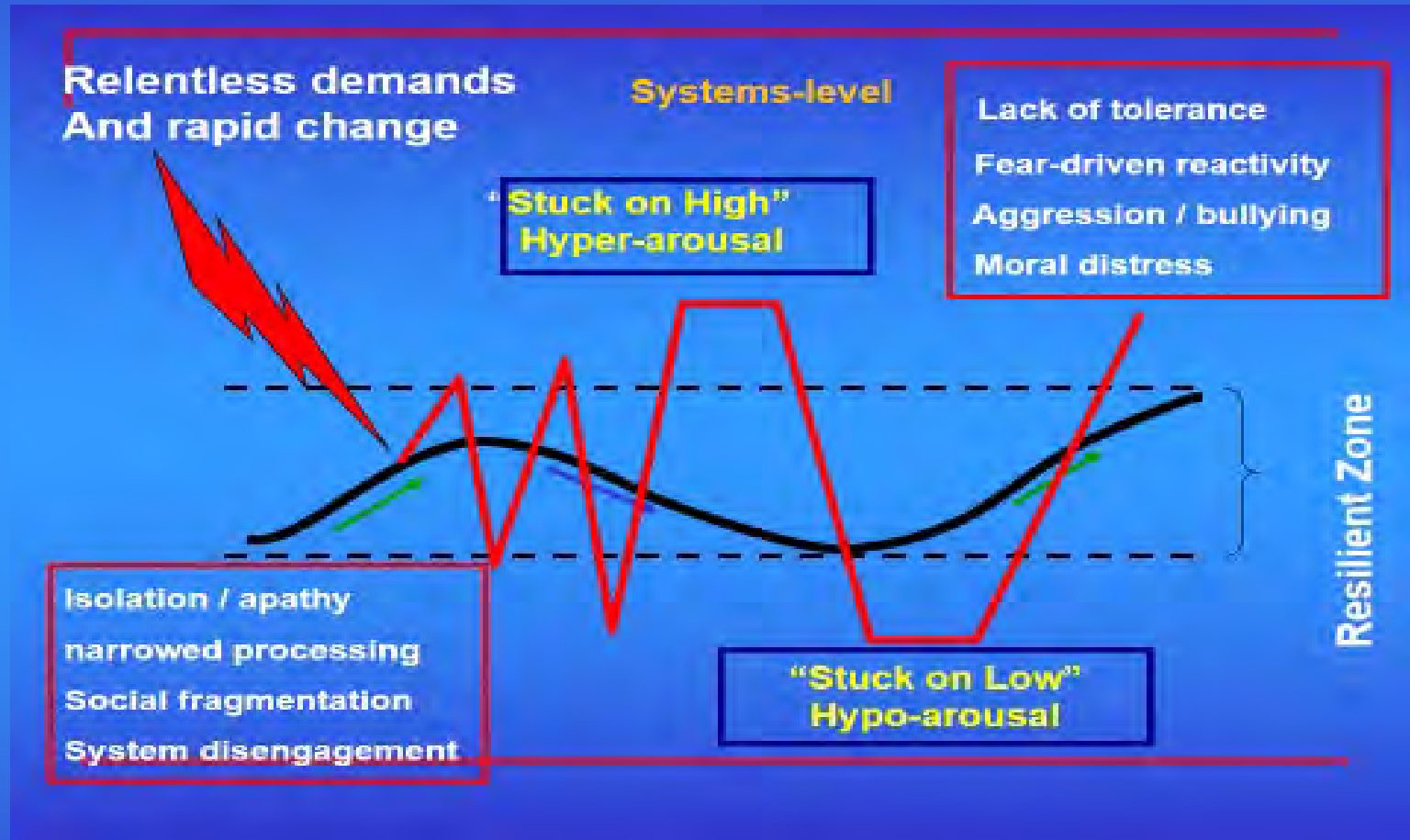


## Foundation of **Social** Resilience in Systems:

Creating workplace and community climates of safety and attachment

Organizational plasticity

# Dysregulation: A Systems Lens



\*\*\*Add the impact of Covid & national-level challenges

# Safety: Examples in homes, schools, and communities

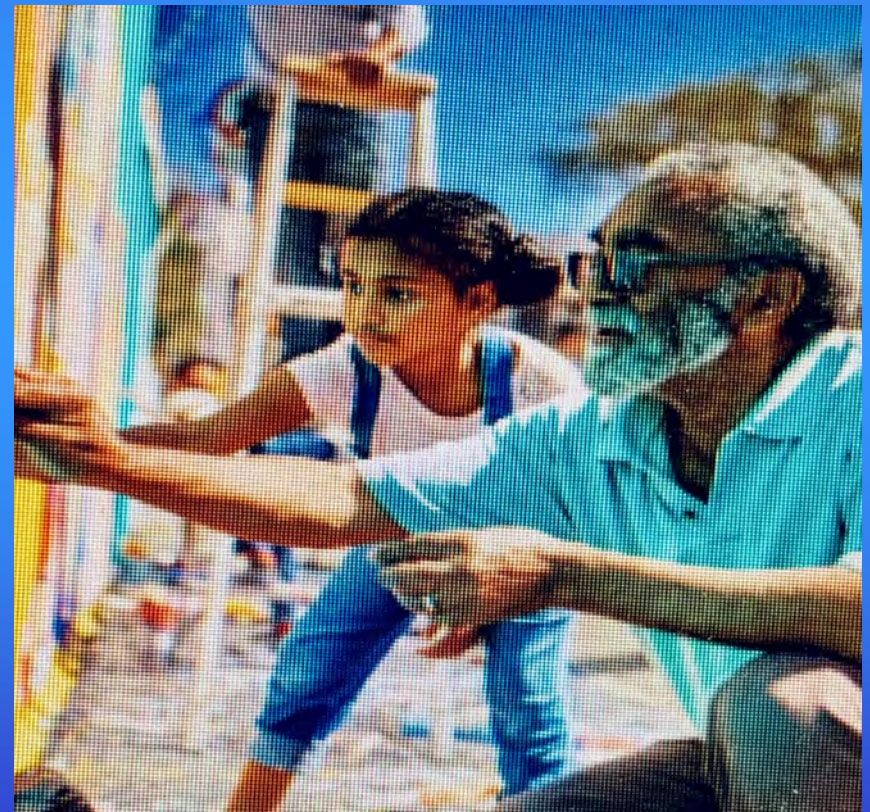
- Pre and post-natal classes for new mothers (inc. “spoiling,” corporal punishment, the role of healthy food)
- Kids and Cops programs and After-school homework centers
- Workers who are sensitive to the signs of distress and trauma in kids, parents (& selves) and have tools to deal with them
- City and State-level policies that support local-level dignity, positive attachments, and safety

# Ecological Approaches with Children:

How are children integrated into our

Such as: communities?

- Responsible adult supervision
- Opportunities for empowerment
- Clear boundaries and expectations
- Developmentally-appropriate activities
- Being known & reinforced for strengths



# We Are Each **Wired** for Resilience...and We Need the Proper :”Brain Food”



- The message is ageless: safety and attachment build and support resilience.
- Practical, positive & productive...  
and it applies to systems of all sizes

# Ecology: A Story of Interdependence

The biological story is that the caterpillar eats many times its weight per day, and then when it forms a chrysalis, it goes into a quiescent state. At that point the precellular entities called **imaginal discs** start to form. They're not full-fledged cells yet, and when they first appear **the immune system actually wipes them out**.

**So long as the discs are independent and separate they are snuffed out** as if they were foreign bodies. But as the metamorphosis goes on, more and more discs are created, and soon they start coming faster and clustering together and the immune system just breaks down. At that point the body of the caterpillar begins to turn into a **soupy nutrient fertilizer** that nourishes the discs as they turn into full-fledged cells. These cells develop into the butterfly....a real chemical transmutation.

Elisabet Santouris

