

# Brain Function, Early Brain Development and Trauma Informed Care

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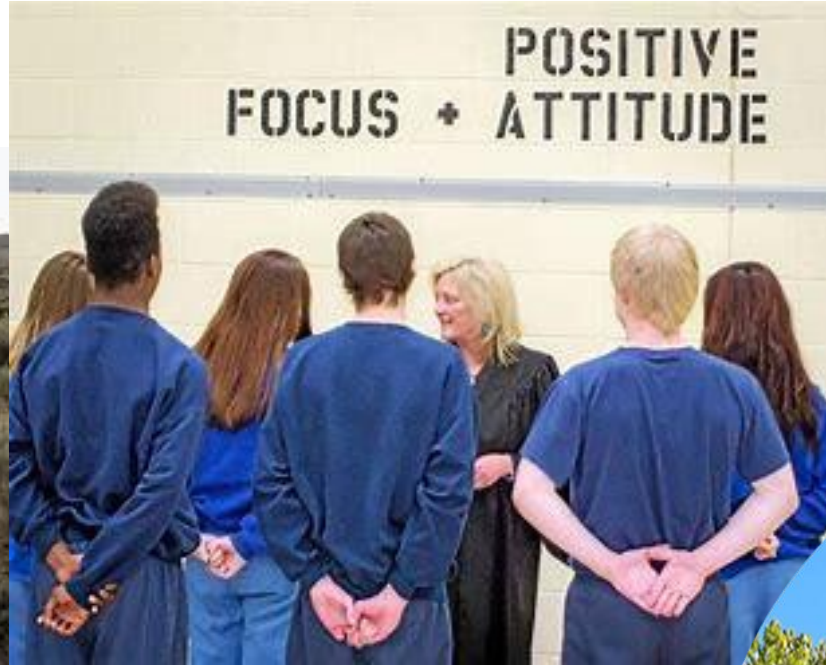
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Who  
I am . . .





# Where I've been . . .







Just another day doing the impossible.

The Neurosequential Model  
moves us from

the *certainty*  
that bad behavior is simple willful  
defiance

to being *curious*  
as to what happened to you  
that resulted in this  
behavior?

Curious about what?



Everything.

But  
especially  
the brain.

# Why do we care so much about the brain?

"The human brain is the organ responsible for everything we do. It allows us to love, laugh, walk, talk, create or hate.

For each of us, our brain functioning is a reflection of our experiences."

-Dr. Bruce Perry

“Kids do well if they  
~~want to~~  
can.”

-Dr. Ross Greene, The Explosive Child

“Parents do well if they  
~~want to~~  
can.”

-Michelle Maikoetter



“What happened to you?  
is so important in understanding  
what’s going on with you now.”

And. . .

Dr. Bruce Perry, *What Happened to You?*

**“What attention, nurturing touch, reassurance—what love didn't you get? Neglect is as toxic as trauma.”**

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**BRUCE PERRY**

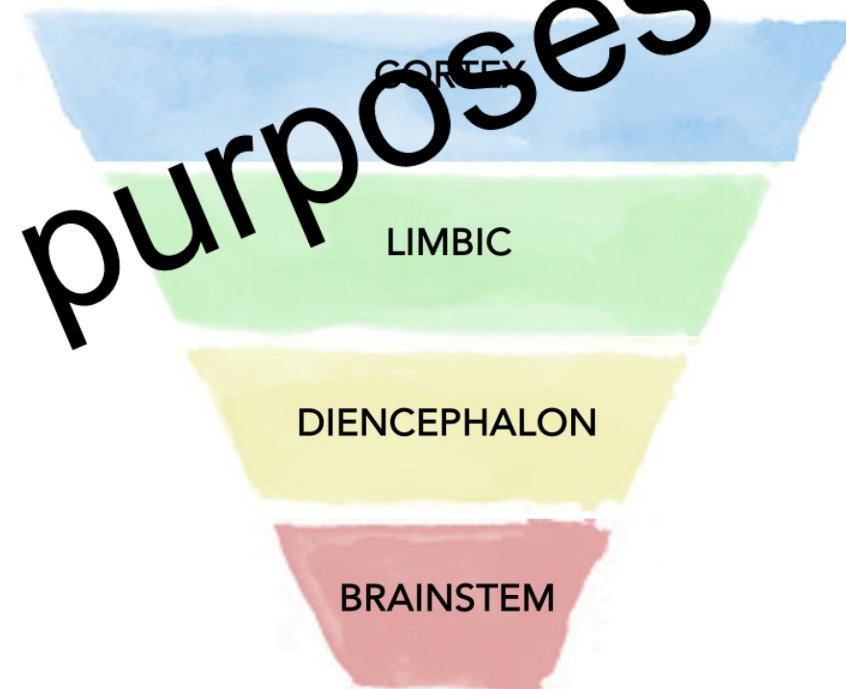
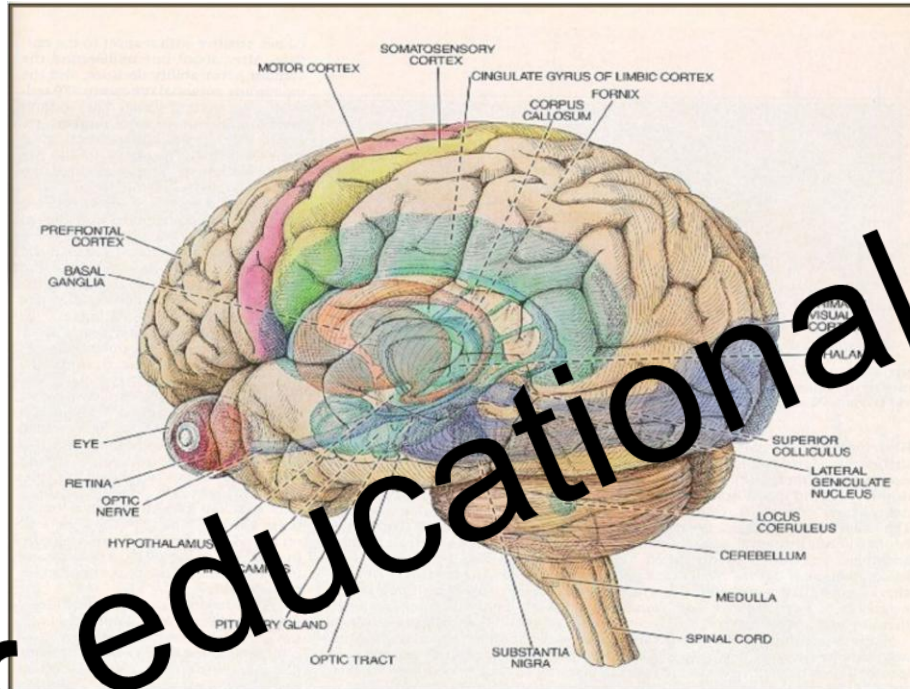
# What is Bruce Perry's Neurosequential Model?

Understanding how  
relationships

and  
experiences

affect brain development

# Heuristics of the Brain





# Sequential Neurodevelopment

The brain is underdeveloped at birth

The brain organizes from the “bottom” up...  
Brainstem to Cortex and from the inside out



- Organization and functional capacity of neural systems is sequential
- Experiences do not have equal “valence” throughout development

# Experiences – both good and bad

- Timing
- Duration
- Frequency

# Brain Mediated Functions

3 – 6 Years

## CORTEX

- Abstract Thinking • Creativity • “Thinking” • Language • Values
- Time • Hope • Impulse Control

1 - 4 Years

## LIMBIC

- Reward • Memory • Bonding • Emotions
- Mood/Affect • Empathy

6 Months – 2 Years

## Diencephalon

- Arousal • Sleep • Appetite
- Movement • Coordination

0 – 9 Months

## BRAINSTEM

- Temperature • Respiration
- Sensory Integration
- Attention/Arousal
- Cardiac

# Risk Factors to Healthy Development

- Difficult pregnancy
- Difficult birth
- Abuse
- Neglect
- Attachment issues
- Trauma
- Anything that causes severe, prolonged stress  
(DV, poverty, being “other”, chaos, transitions)
- Combination



# Developmental Trauma is *The Great Imposter*

Chaos, threat, attachment disruption, 'trauma' and neglect – complex developmental adversity – can impact physical, cognitive, social, emotional and behavioral functioning in complex ways, resulting in signs and symptoms that 'mimic' any of the DSM diagnoses. The result is a global misunderstanding of these complex individuals.

## DIAGNOSTIC IMPRESSIONS:

**AXIS I:**      Oppositional Defiant Disorder; R/O Attention Deficit Hyperactivity Disorder, Combined Type; Mood Disorder NOS; R/O Bipolar Disorder; Post Traumatic Stress Disorder; Reactive Attachment Disorder – Disinhibited Type; Primary Enuresis, Nocturnal Type; Sexual Abuse of Child as Victim; Physical Abuse of Child as Victim

**AXIS II:**      Deferred

**AXIS III:**    Primary Enuresis

**AXIS IV:**    Severe

**AXIS V:**      40

# NM Brain Heuristic

## CORTEX

- Abstract Thinking • Creativity • "Thinking" • Language • Values
- Time • Hope • Impulse Control

## LIMBIC

- Reward • Memory • Bonding • Emotions
- Mood/Affect • Empathy

## DENCEPHALON

- Arousal • Sleep • Appetite
- Movement • Coordination

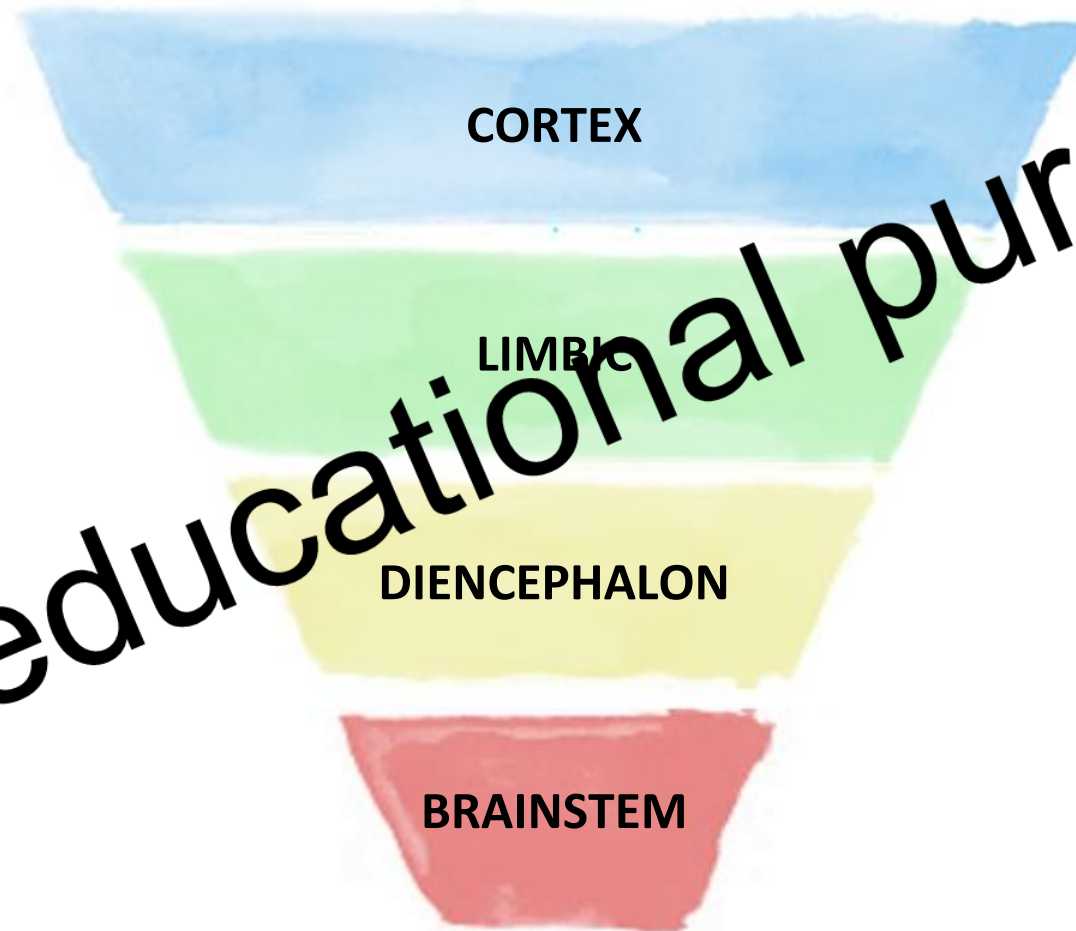
## BRAINSTEM

- Temperature • Respiration
- Sensory Integration
- Attention/Arousal
- Cardiac

Inside world:  
eat/drink/sleep  
Bathroom  
break



The brain is organized to act on  
incoming information before it feels and before it thinks  
about the incoming information



THINKS

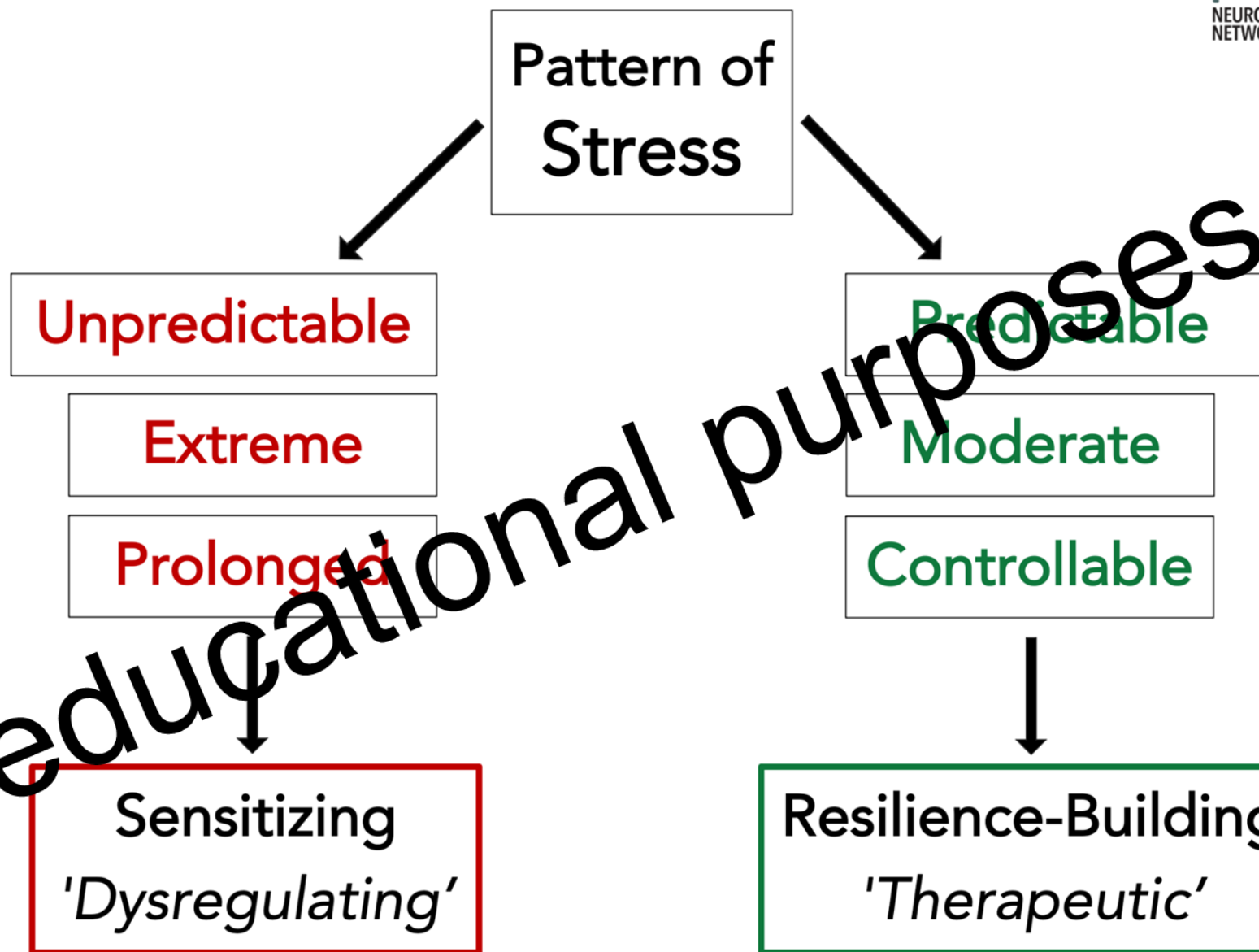


FEELS



ACTS

For educational purposes only



For educational purposes only

# Optimal Early Caregiving

- Present
  - Quantity matters
- Attentive
  - To the infant/child
- Attuned
  - Accurately interpret non-verbal cues
- Responsive
  - Respond to the needs of the infant





Our connectedness to our  
caregivers is the greatest buffer to  
any adversity.

-Dr. Bruce Perry



# The Tale of Two Different Brains



Typical  
9 year old

Functional Brain Map Value Key	
DEVELOPMENTAL	
Functional	
12	DEVELOPED
11	TYPICAL RANGE
10	
9	EPISODIC/EMERGING
8	MILD Comprmise
7	
6	PRECURSOR CAPACITY
5	MODERATE Dysfunction
4	
3	UNDEVELOPED
2	SEVERE Dysfunction
1	



Atypical  
9 year old

“...in order to understand trauma we need to understand memory.  
In order to appreciate how children heal we need to understand how they learn to love, how they cope with challenge, how stress affects them.”

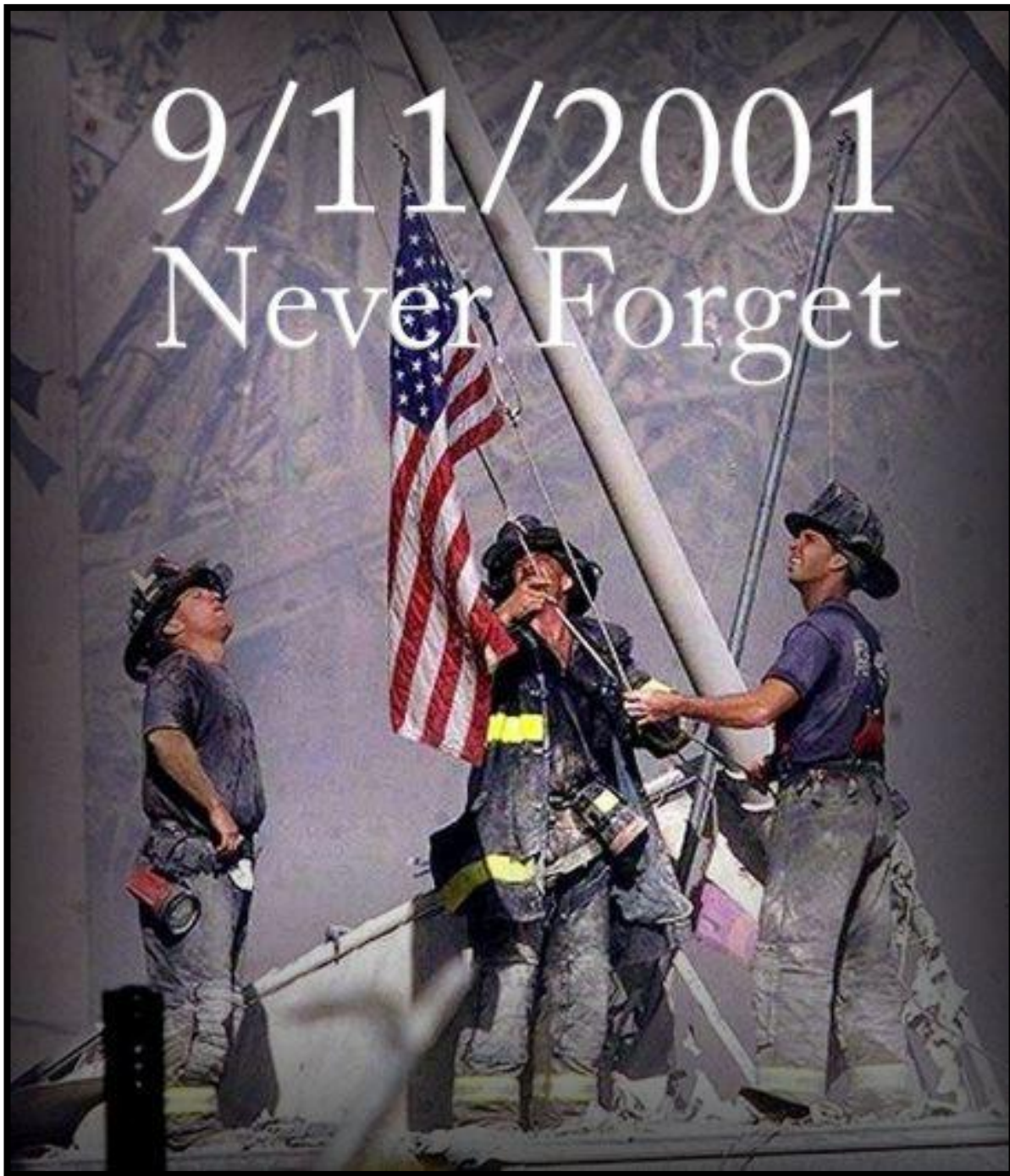
— Bruce D. Perry, [The Boy Who Was Raised As a Dog: And Other Stories from a Child Psychiatrist's Notebook](#)

# What is the brain's #1 directive?

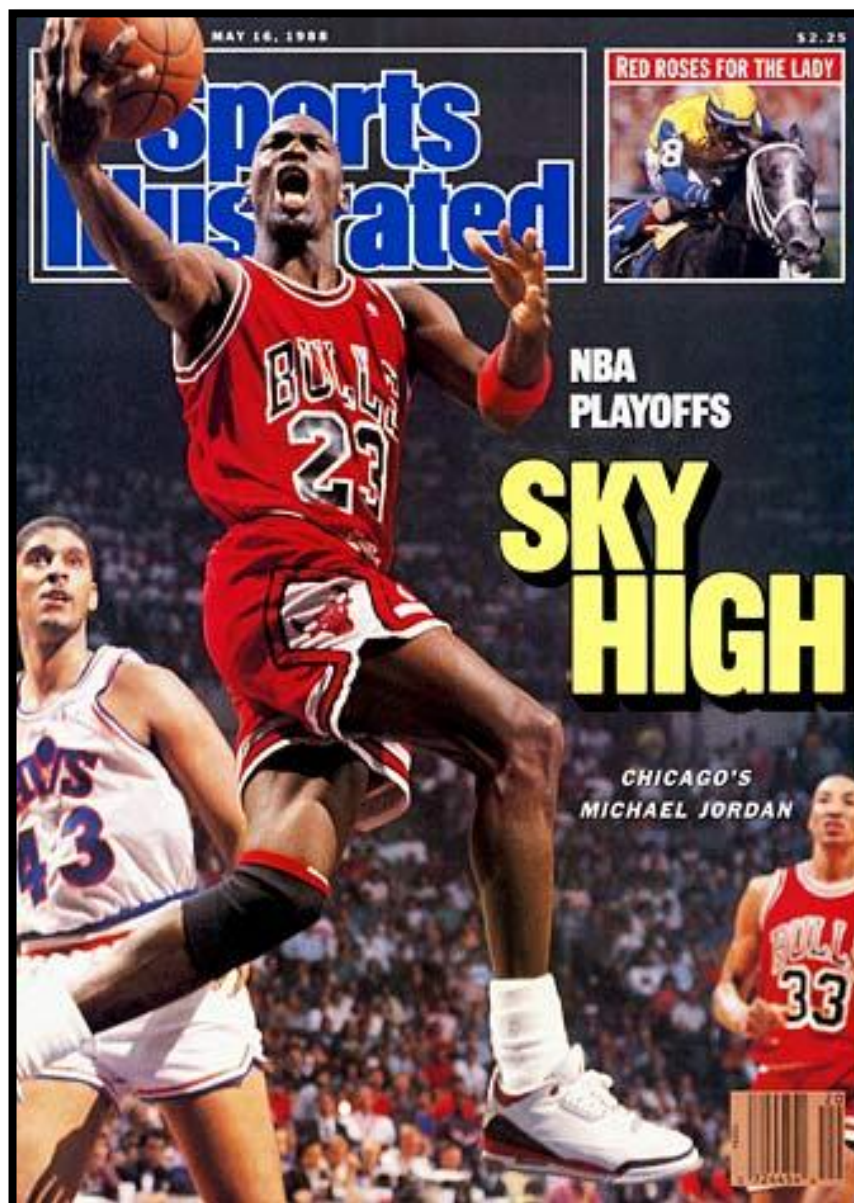
HINT: It's not for you to be happy

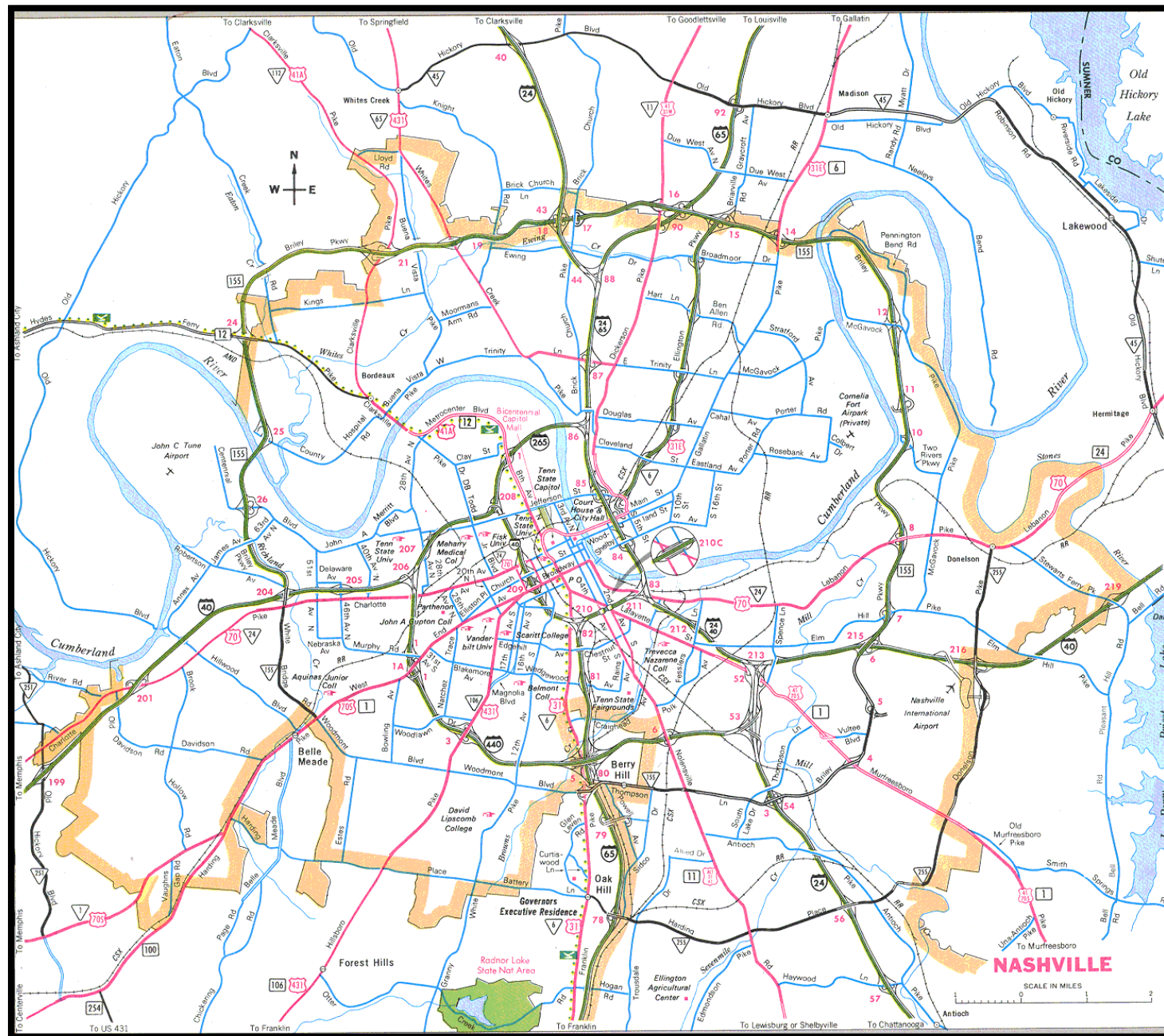


9/11/2001  
Never Forget











And our default response is . . .

**Suspicion**

(it's called the negativity bias)

**WHY?**



And we're always making up stories.

When I Grow up...



I want to be like mommy!

Our brains are  
pattern seeking  
and  
meaning making  
machines

WHY?





The brain must  
anticipate and make  
associations based  
on past experiences  
in order to survive.

It constantly and continuously  
tags incoming information as

Positive

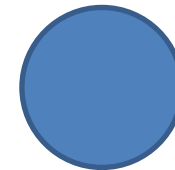


Negative



Or

Neutral



*Based on your past experiences  
and relationships.*

This is the basis  
of ALL learning  
– whether  
you're trying to  
learn or not.

(active or passive)

# When we feel threatened:



- Flock/Freeze – get more info
    - Social referencing
  - Fight or Flight?
- That won't work.
- Dissociate
  - Try both.

Simply put, do we

- Hit the gas
- Hit the brakes
- Do both.



# What does hitting the gas (hyperarousal) look like?

- Increased heart rate
- Increased muscle tension
- Yelling
- Hitting
- Cussing
- Threats
- Spitting
- Primitive aggression



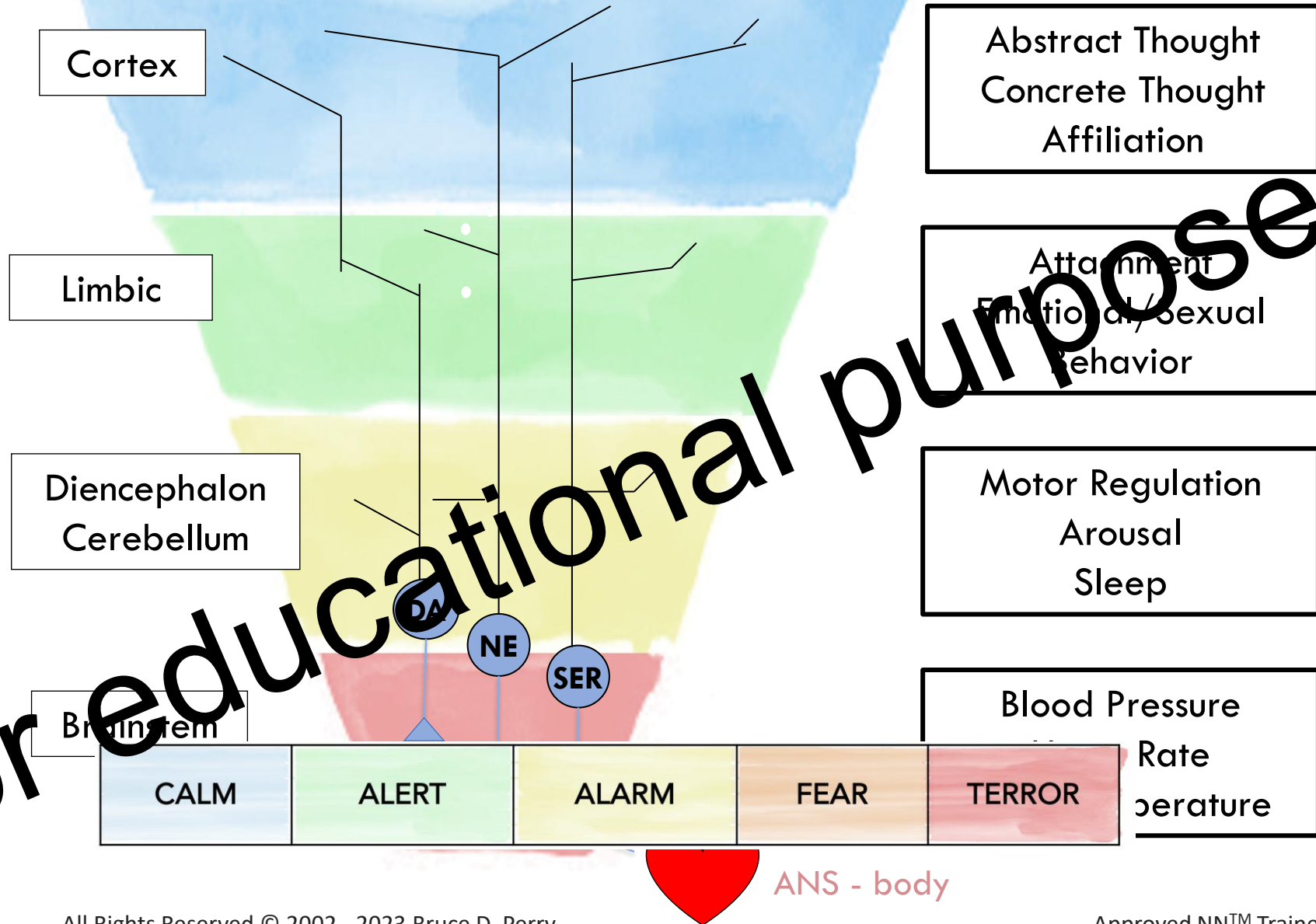
# What does hitting the brakes (dissociation) look like?

- Slowed heart rate
- Stillness or shutting down
- Robotic compliance
- Falling asleep/passing out
- Can't remember pieces of time, instructions, conversations
- Lots of physical ailments/complaints
- “in his/her own little world”

So, what is a threat?



It depends.



# State Dependent Cognition

State	Calm	Alert	Alarm	Fear	Terror
Cognition	Abstract	Concrete	Emotional	Reactive	Reflexive
Fidelity with which information is processed and stored	80%	60%	40%	30%	10%

# Sequence of Engagement

CORTEX  
REASON

LIMBIC  
RELATE

Diencephalon  
REGULATE

BRAINSTEM

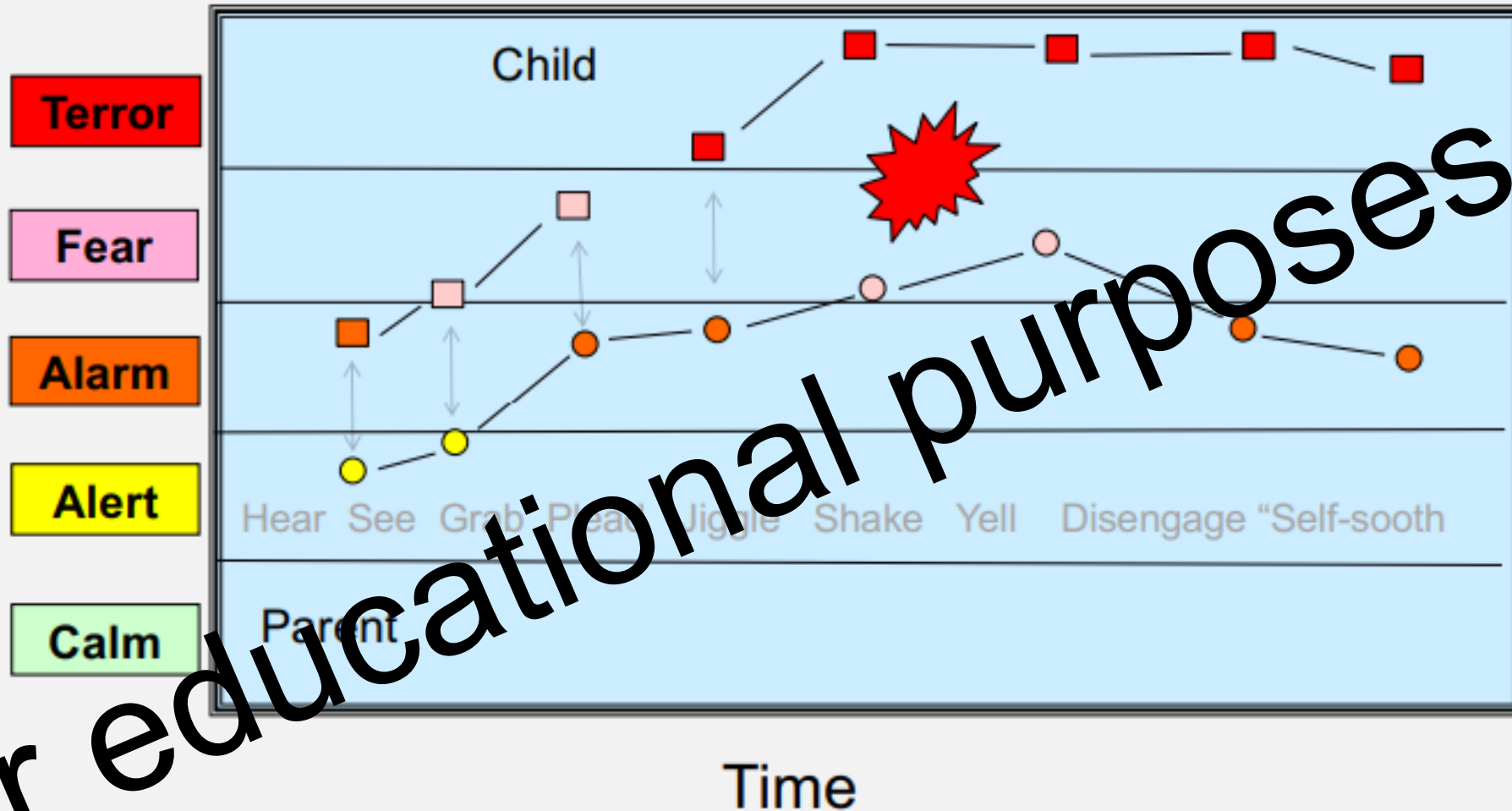
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***“When people have a hard time cognitively acting on an instruction they will default to a practiced behavior.”***

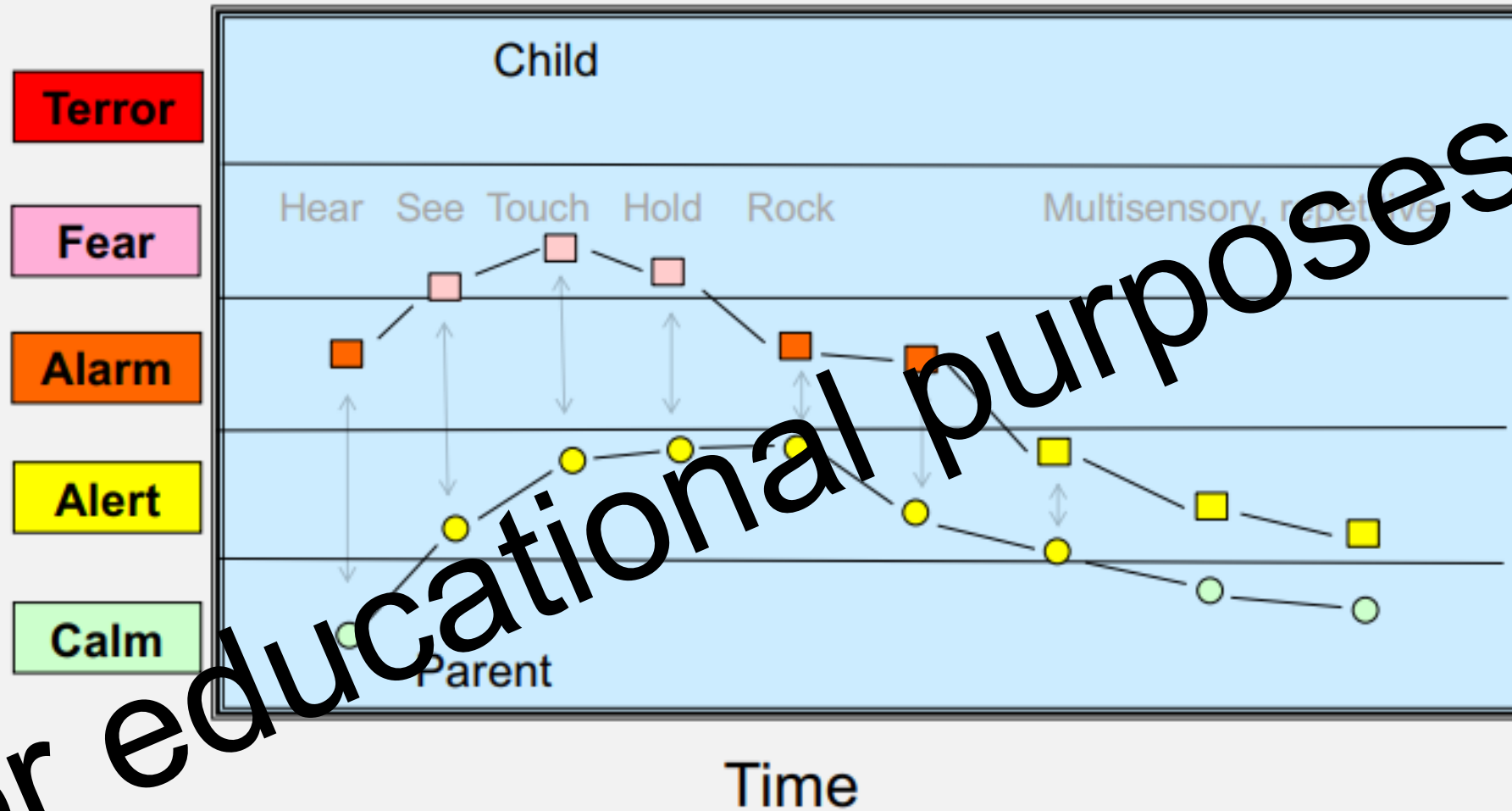
*– Dr. Bruce D. Perry*



## Co-dysregulation: Distressed child and anxious, reactive parent



## Co-regulation: Difficult-to-sooth child and well-regulated parent





Be the calm  
you want to  
see  
in your  
child(ren).

# What will help/work?

- Consistency (routine, structure, limits, supervision)
- Predictability
- A sense of control



External regulation helps  
internal regulation.

# STABLE RELATIONSHIPS with SUPPORTIVE PEOPLE



# Let's stay in touch!

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**Maverick Consulting, Training and Advocacy**

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You(I) will make lots of mistakes!

The healing is in the repair of the mistakes – the *repair of the relationship*.

Not perfectly....humanly.

# Questions?



# Free ONLINE RESOURCES:

<https://www.neurosequential.com/global-support>

CET/ThinkTV Education (PBS videos)

<https://www.pbs.org/video/episode-1-the-neurosequential-model-5prebi/>

Seven Slide Series:

<https://www.youtube.com/watch?v=uOsgDkeH52o&t=290s>

Free book study guide on the front page of our website:

<https://www.neurosequential.com/>

# The Neurosequential Model Network

[Neurosequential.com](http://Neurosequential.com)

[BDPerry.com](http://BDPerry.com)

[Handouts](#)

[www.bdperry.com/handouts](http://www.bdperry.com/handouts)

[Overview of the Neurosequential Model](#)

<https://youtu.be/910LNopJrHM>



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Info NMN