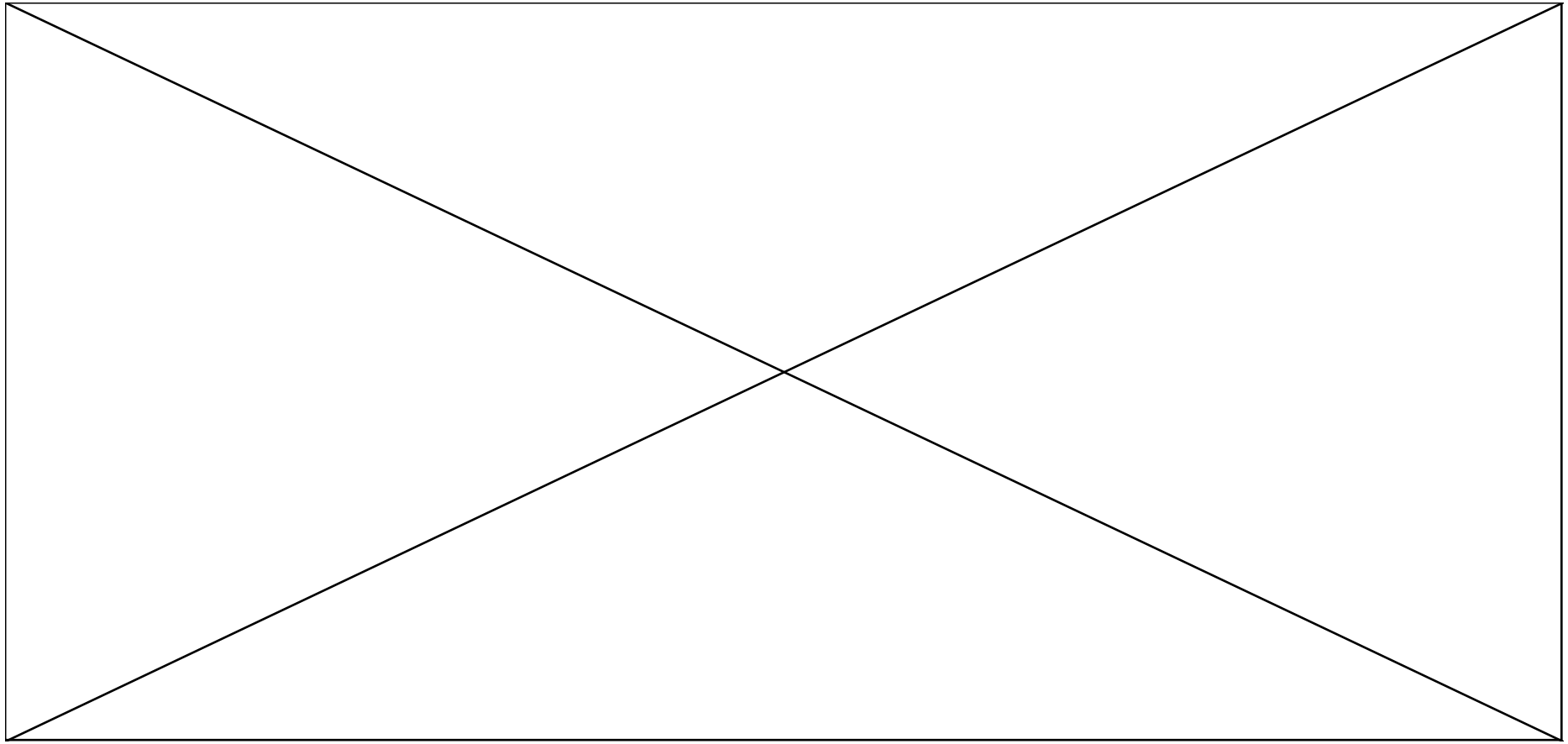
# THE INTERSECTION OF FEAR, TRAUMA & VIOLENCE

DR. ALISHA MORELAND-CAPUIA, M.D.

DR. ALISHA MORELAND-CAPUIA, JANUARY 9TH 2015 WHAT WORKS CONFERENCE



# VIDEO PRESENTATION: “I’m afraid”

# WE CAN ALL RELATE TO FEAR OR BEING AFRAID

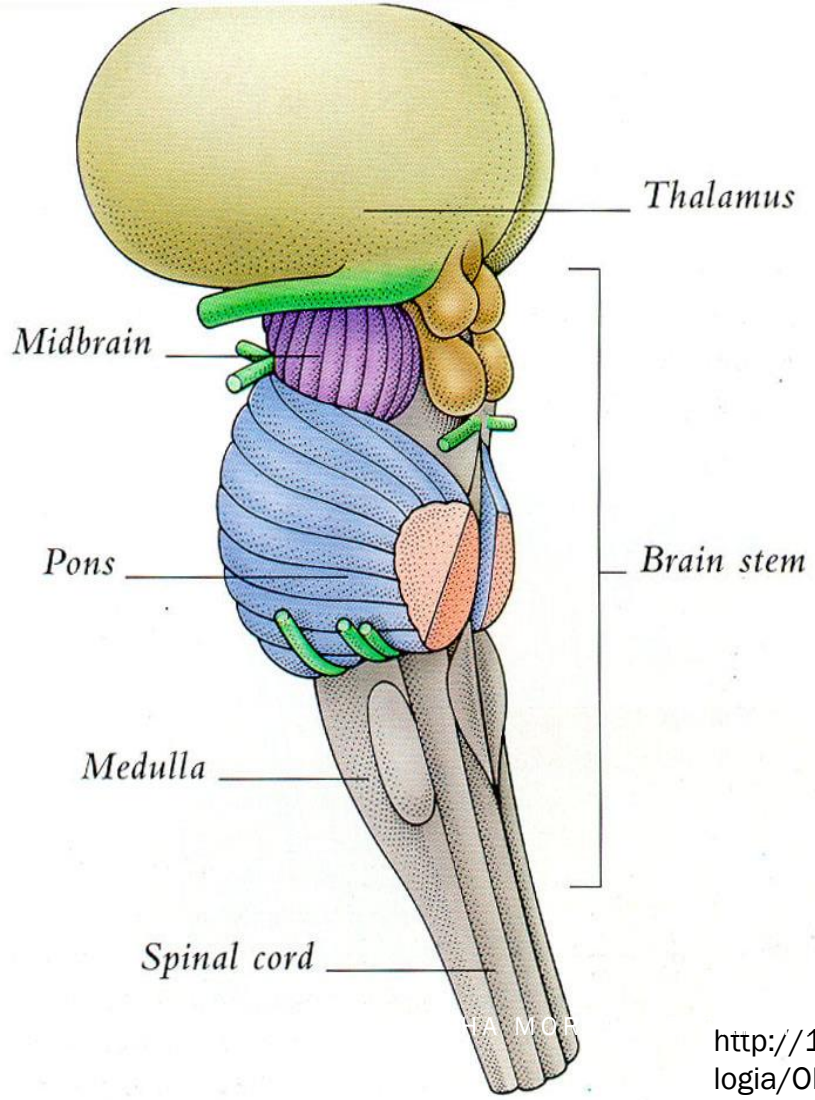
Afraid of the dark as children

Afraid of the light as adults

FEAR

Fear is a natural response shared by all human beings. The fear response stems from all human's natural proclivity towards survival.

# BRAINSTEM: "SURVIVAL CENTER"- THE PRIMITIVE BRAIN




Brain stem contains centers that regulate several functions that are vital for survival; these include blood pressure, heartbeat, respiration, digestion, and certain reflex actions

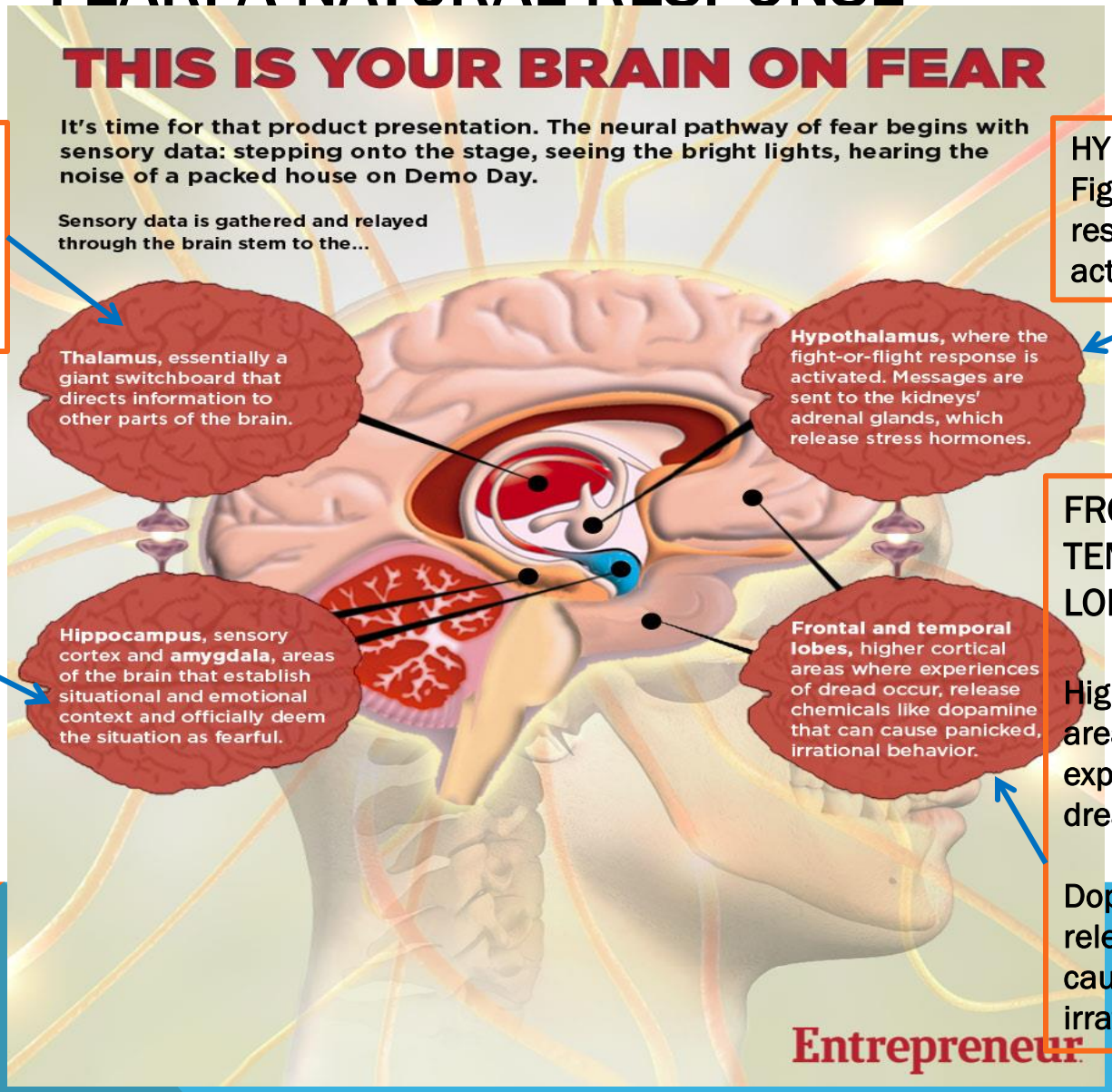


http://163.178.103.176/Fisiologia/neurofisiologia/Objetivo_9/brain.html

# FEAR: A NATURAL RESPONSE

**THALAMUS**
Giant switchboard, directs information to other parts of the brain

**HIPPOCAMPUS**
Sensory cortex and AMYGDALA– gives context to the situational and emotional aspects of fear



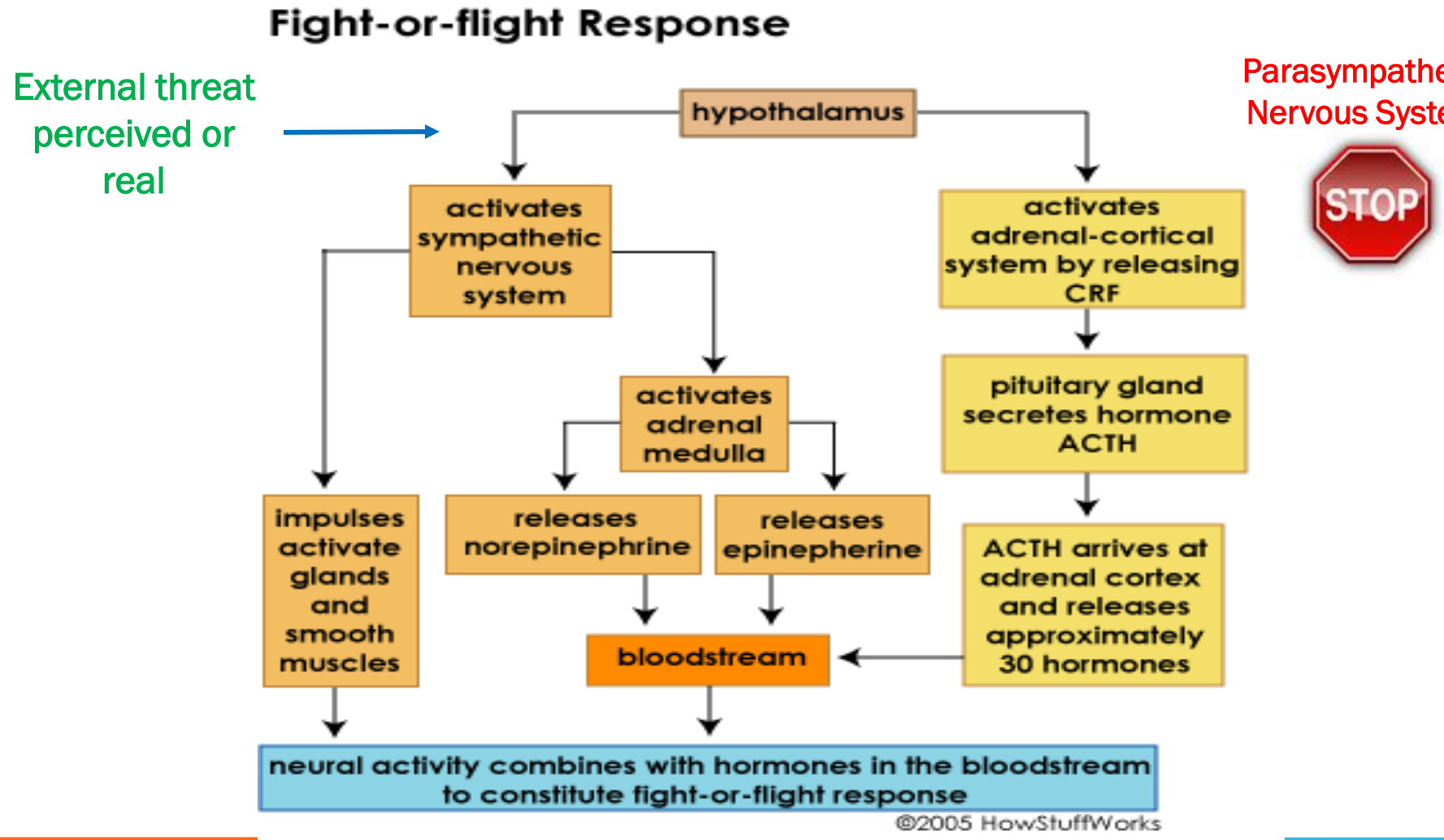

**HYPOTHALAMUS**
Fight-or-Flight response is activated.

**FRONTAL & TEMPORAL LOBES**

Higher cortical areas where the experience of dread happens

Dopamine is released & can cause panicked, irrational behavior

http://ridiculouslyefficient.com/this-is-your-brain-on-fear-infographic/

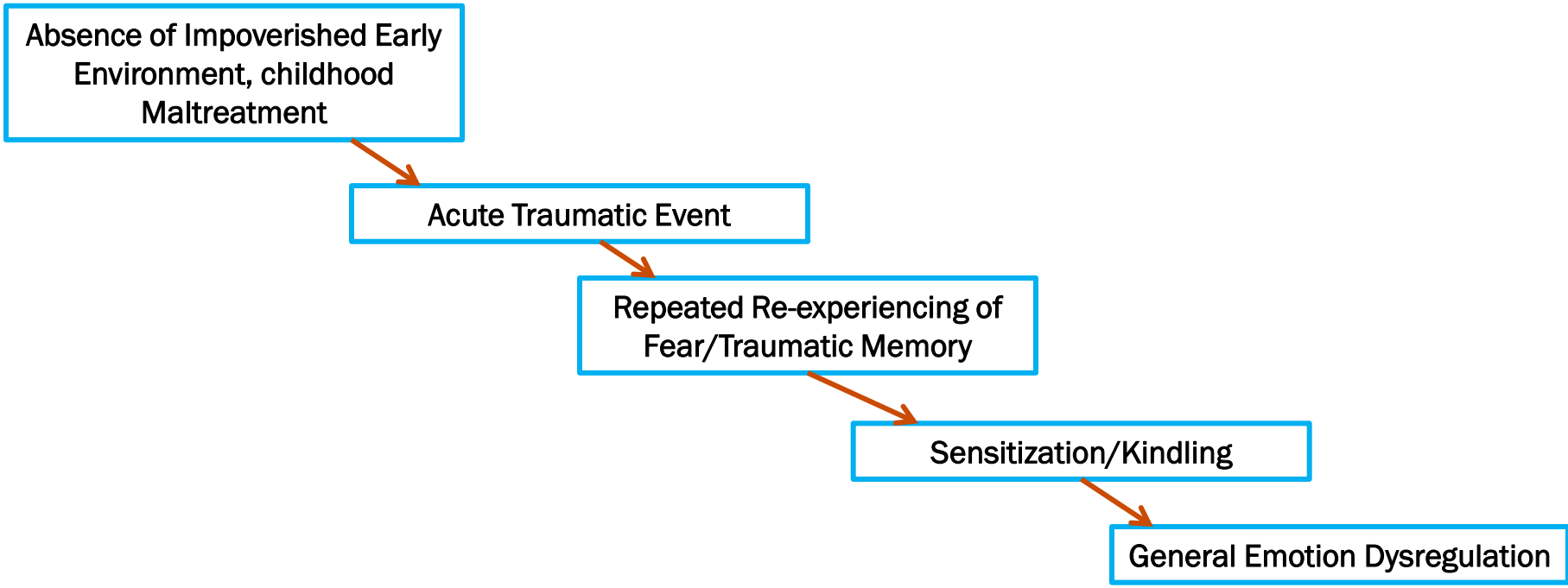



The fear response is meant to be time limited, once the fear trigger is eliminated, the fear response should subside. What happens when you live in a constant state of fear?

# WHAT HAPPENS WHEN FEAR IS UNWOVEN??

# FEAR CONDITIONING THROUGH STRESS SENSITIZATION & KINDLING

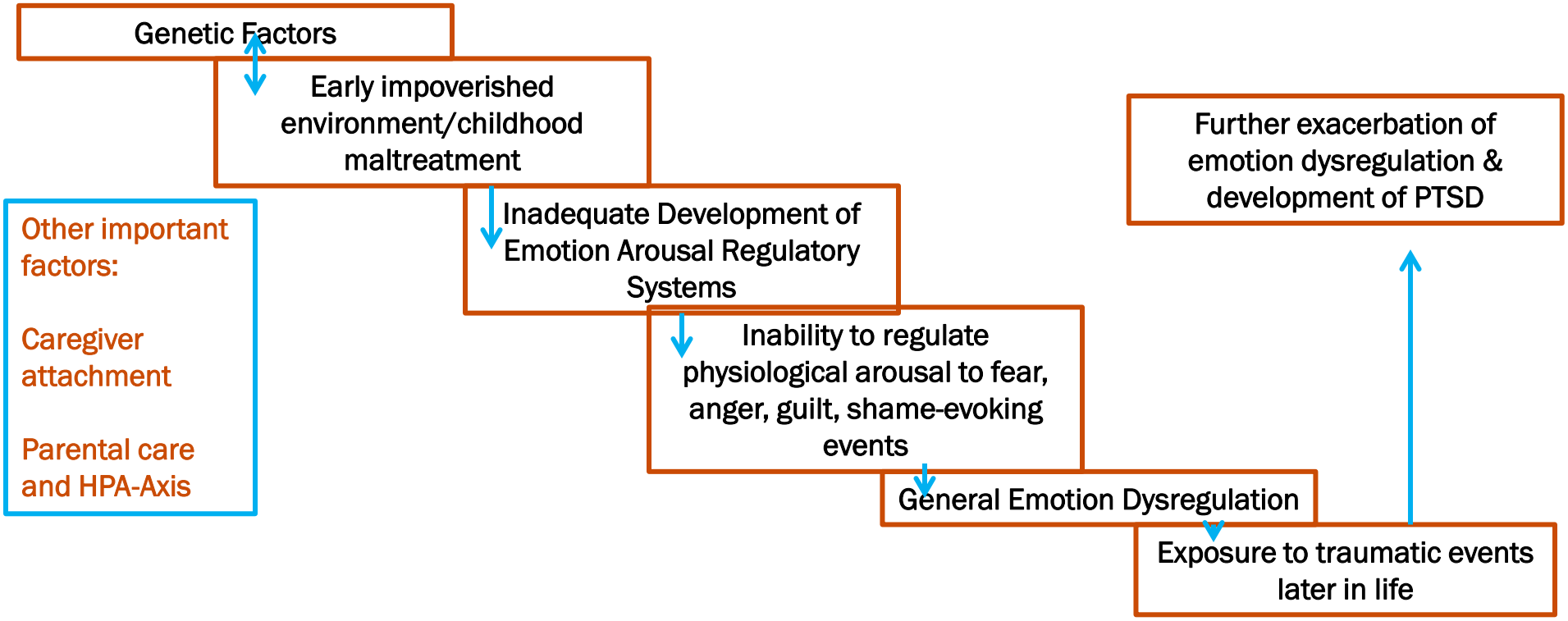
PATHWAY 1: Lanius et al. (2010)




Lanius et al. (2010). Fear Conditioning and early life vulnerabilities: two distinct pathways of emotion dysregulation and brain dysfunction in PTSD. European Journal of PsychoTraumatology, Vol 1 (2010)

# EARLY LIFE VULNERABILITIES

PATHWAY 2: Lanius et al. (2010)




Lanius et al. (2010). Fear Conditioning and early life vulnerabilities: two distinct pathways of emotion dysregulation and brain dysfunction in PTSD. European Journal of PsychoTraumatology, Vol 1 (2010)

# STRESS SENSITIZATION

According to Milad et al. (2009)

Stress sensitization = failure of the extinction of conditioned fear

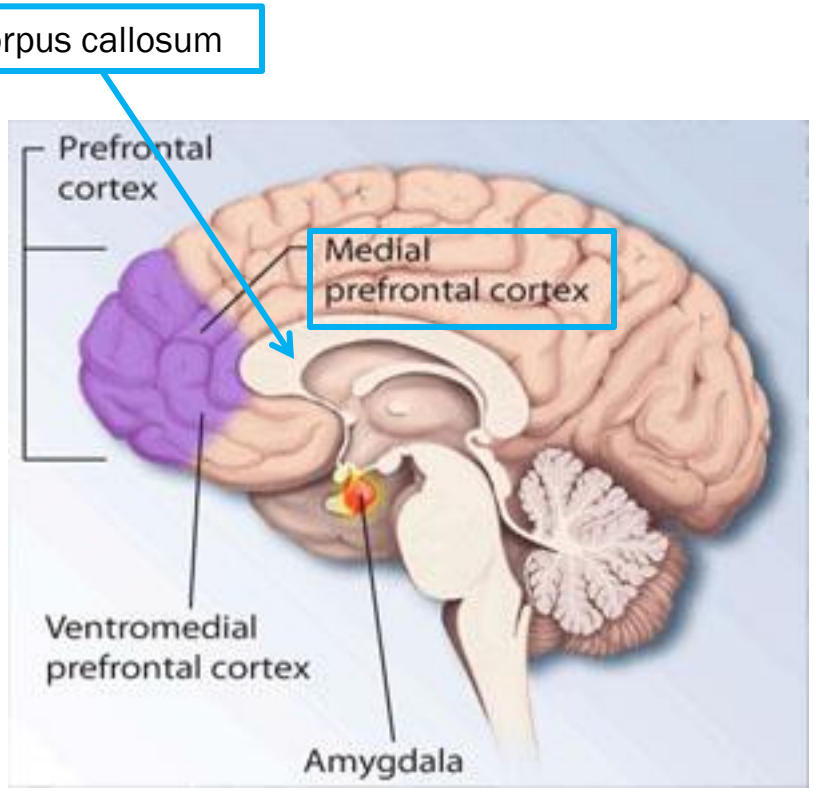
In other words, living in a constant state of fear, learned maladaptive behavior… may lead to stress sensitization

Milad,M.R. et al. (2009). Neurobiological basis of failure to recall extinction memory in post traumatic stress disorder. Biological Psychiatry, 66(12), 1191-1194.

# THE BRAIN & FEAR CONDITIONING

## PREFRONTAL CORTEX

- Planning complex cognitive behavior
- personality expression
- decision making
- moderating social behavior



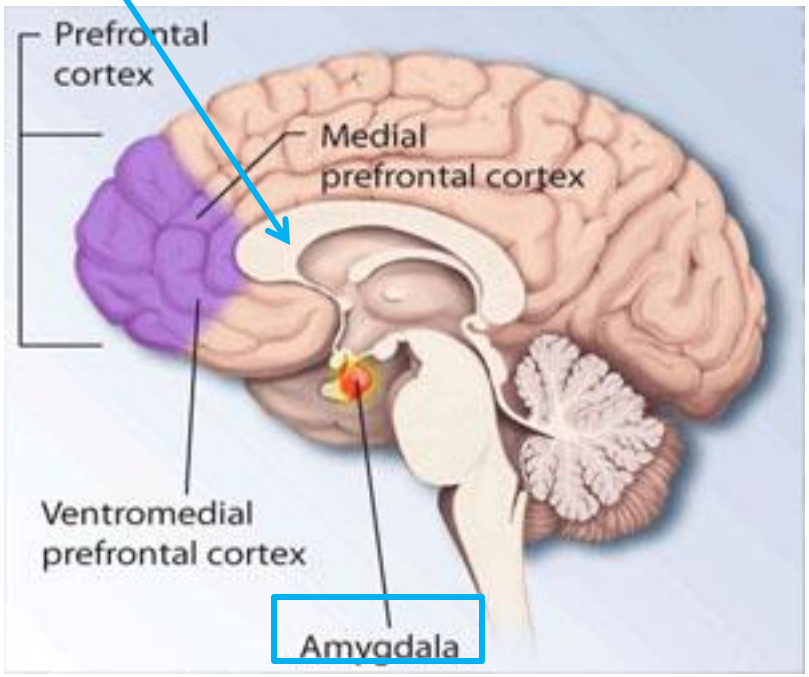

## MEDIAL PREFRONTAL CORTEX (MPFC)

- Involved in decision making AND
- Retrieval of remote long term memory
- Theorized to help us learn associations between context, location, events and corresponding adaptive responses (namely emotional)

# THE BRAIN & FEAR CONDITIONING

## AMYGDALA

- Responsible for Processing of memory, decision making and emotional reactions
- Modulates memory consolidation (which happens over time)
- Has a role in aggression



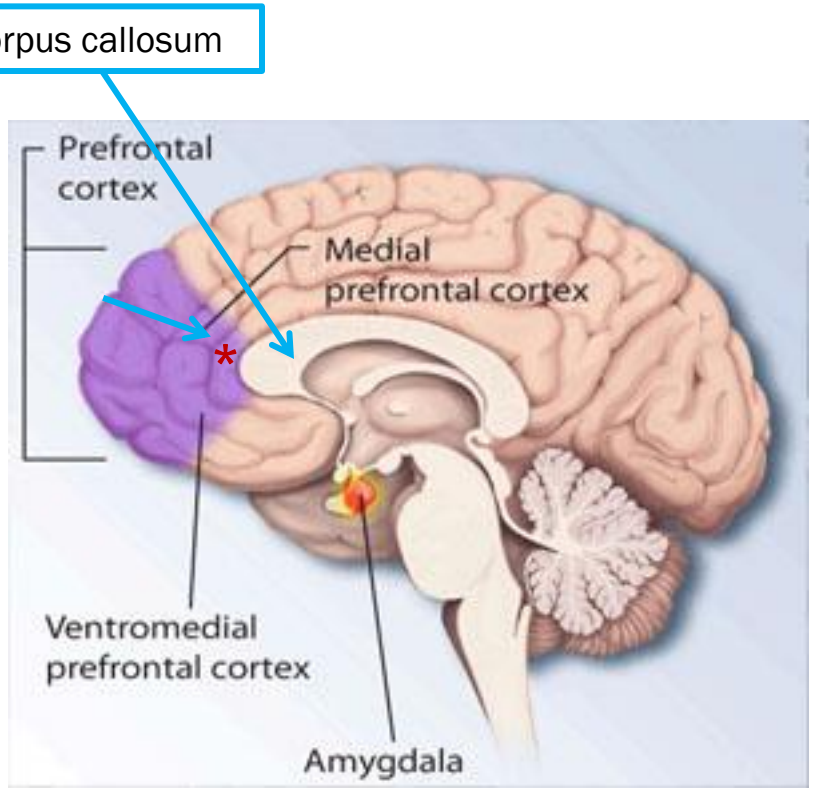

Amygdala activity at the time of encoding information correlates to the retention for that information.

Translation:
We all tend to remember what happened to us when there is a robust emotional response attached to the memory of the event

# THE BRAIN & FEAR CONDITIONING

## ANTERIOR CINGULATE CORTEX (ACC)

- ❑ Responsible for autonomic function (i.e. blood pressure, heart rate)
- ❑ Early learning
- ❑ Problem solving
- ❑ Rational cognitive functions
- ❑ Reward anticipation
- ❑ Decision making
- ❑ Empathy
- ❑ Impulse control
- ❑ Emotion




Dorsal aspect of the ACC is connected to the Prefrontal Cortex and plays a role in cognition

Ventral aspect of the ACC is connected to the Amygdala and plays a role in emotion

# THE BRAIN & FEAR CONDITIONING

Studies by Shin et al. (2009 and 2010) show…

- Changes in how the Medial Prefrontal Cortex (MPFC) and the Anterior Cingulate Cortex could modulate the Amygdala response (a checks and balance loss)

- Decreased responsiveness to the MPFC and the ACC led to disinhibition of the Amygdala

- Another way to understand the fear response unchecked, unwoven….

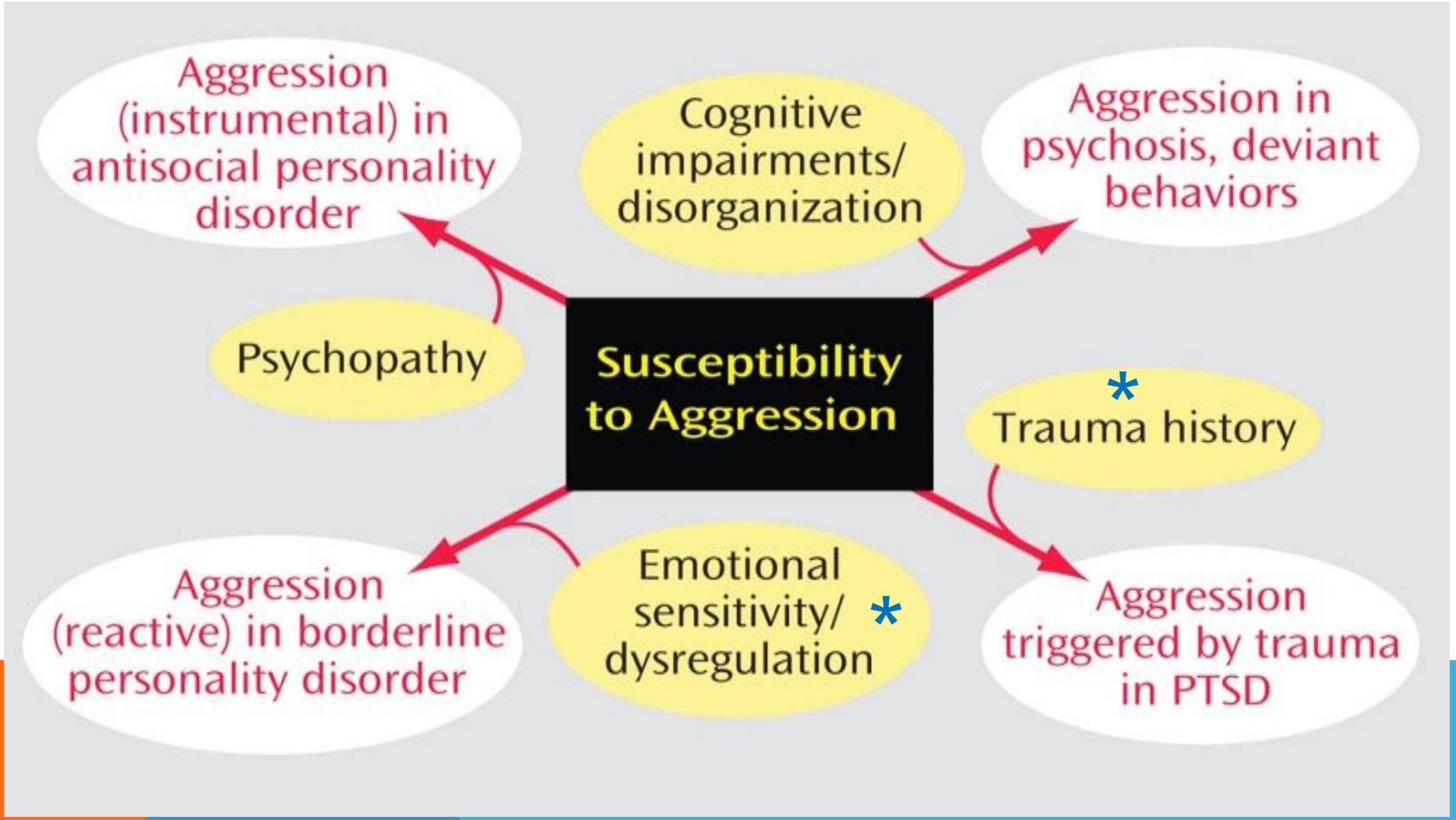
Shin et al. (2010). The nuerocircuitry of fear, sress and anxiety disorders. Neuropsychopharmacology, 35(1), 169-191.

# NATURAL FEAR RESPONSE UNCHECKED = TRAUMATIZATION

*"Traumatization occurs when both internal and external resources are inadequate to cope with external threat."*

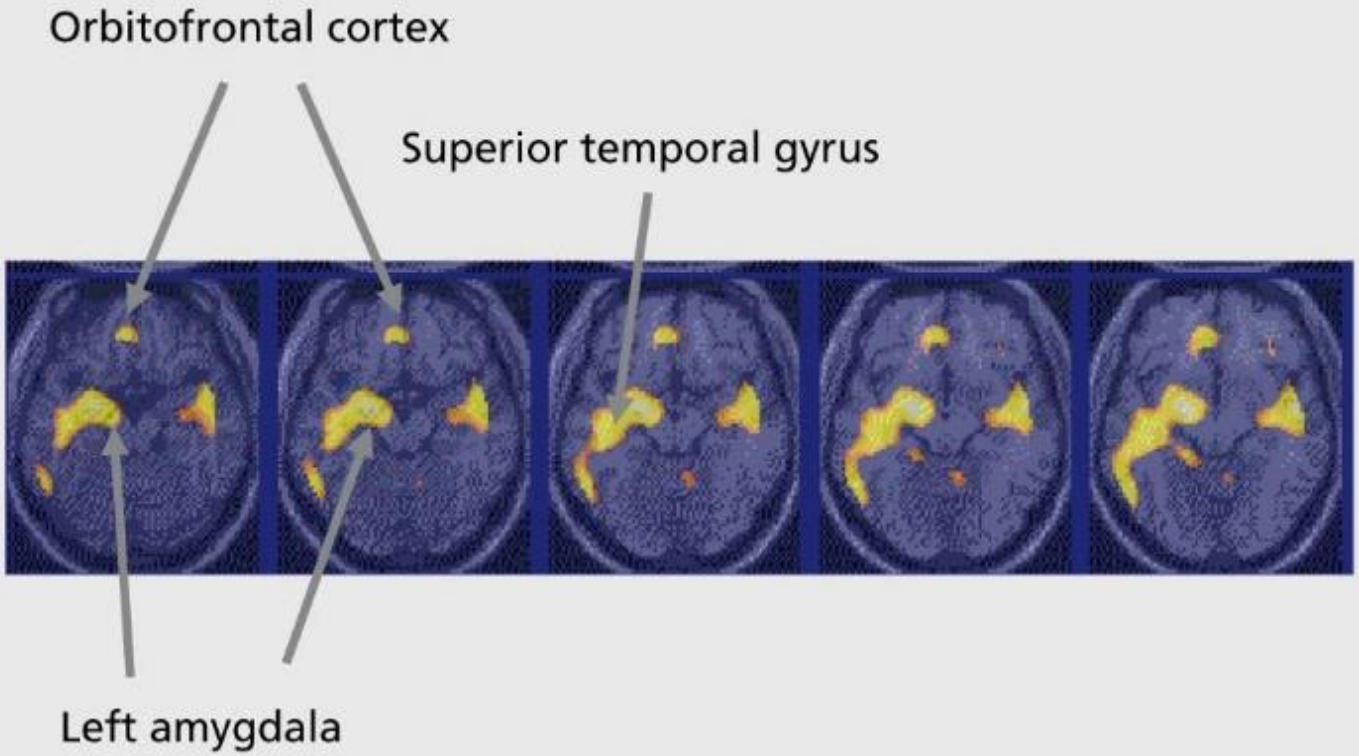
*-Van der Kolk, 1989*

# TRAUMATIZATION UNCHECKED CAN LEAD TO AGGRESSION




Larry J. Siever, M.D. Neurobiology of Aggression and Violence. Am J Psychiatry 2008; 165:429-442

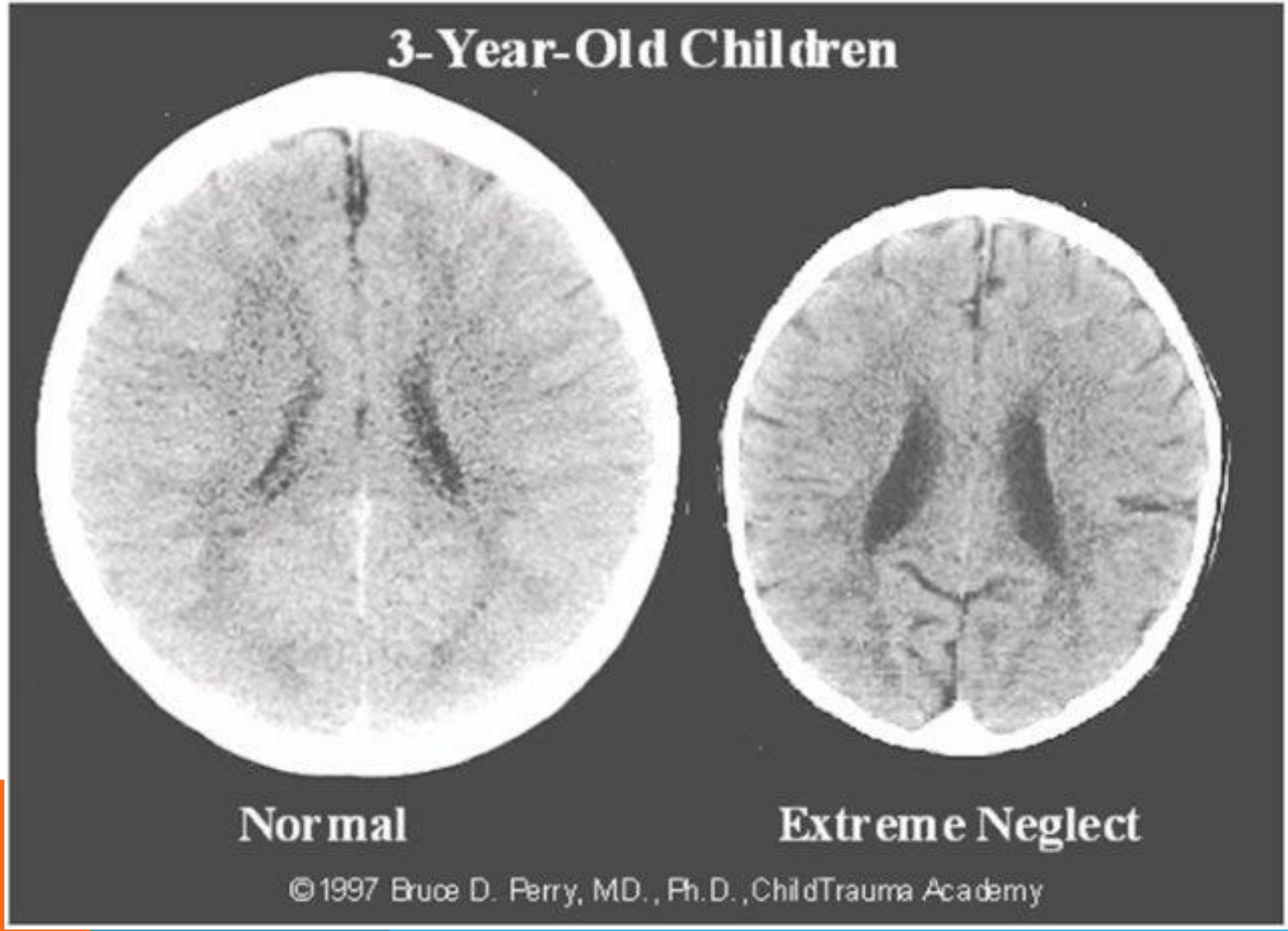
# Increased blood flow with fear acquisition versus control in abuse-related PTSD




Yellow areas represent areas of relatively greater increase in blood flow with paired vs unpaired US-CS in PTSD woman alone, z>3.09, *P*<0.001



J. Douglas Bremner, MD. Traumatic stress: effects on the brain. Dialogues Clin Neurosci. 2006;8:445-461


3-Year-Old Children
Normal
Extreme Neglect
©1997 Bruce D. Perry, MD., Ph.D., ChildTrauma Academy

# WHAT DOES IT MEAN TO BE TRAUMA-INFORMED?

- Understanding the neurobiological, social, and psychological aspects of trauma (as outlined in prior slides)
- Changing the way you pose questions: instead of "what's wrong?" ASK "what happened?"
- Check underlying assumptions

# BEING TRAUMA-INFORMED

- Builds greater capacity for empathy (increases ones capacity to mentalize)
- Restores a sense of basic humanity
- Inherently renders you culturally-responsive

# DR. MAYA ANGELOU

*'I am a human being, therefore nothing human can be alien to me.'*

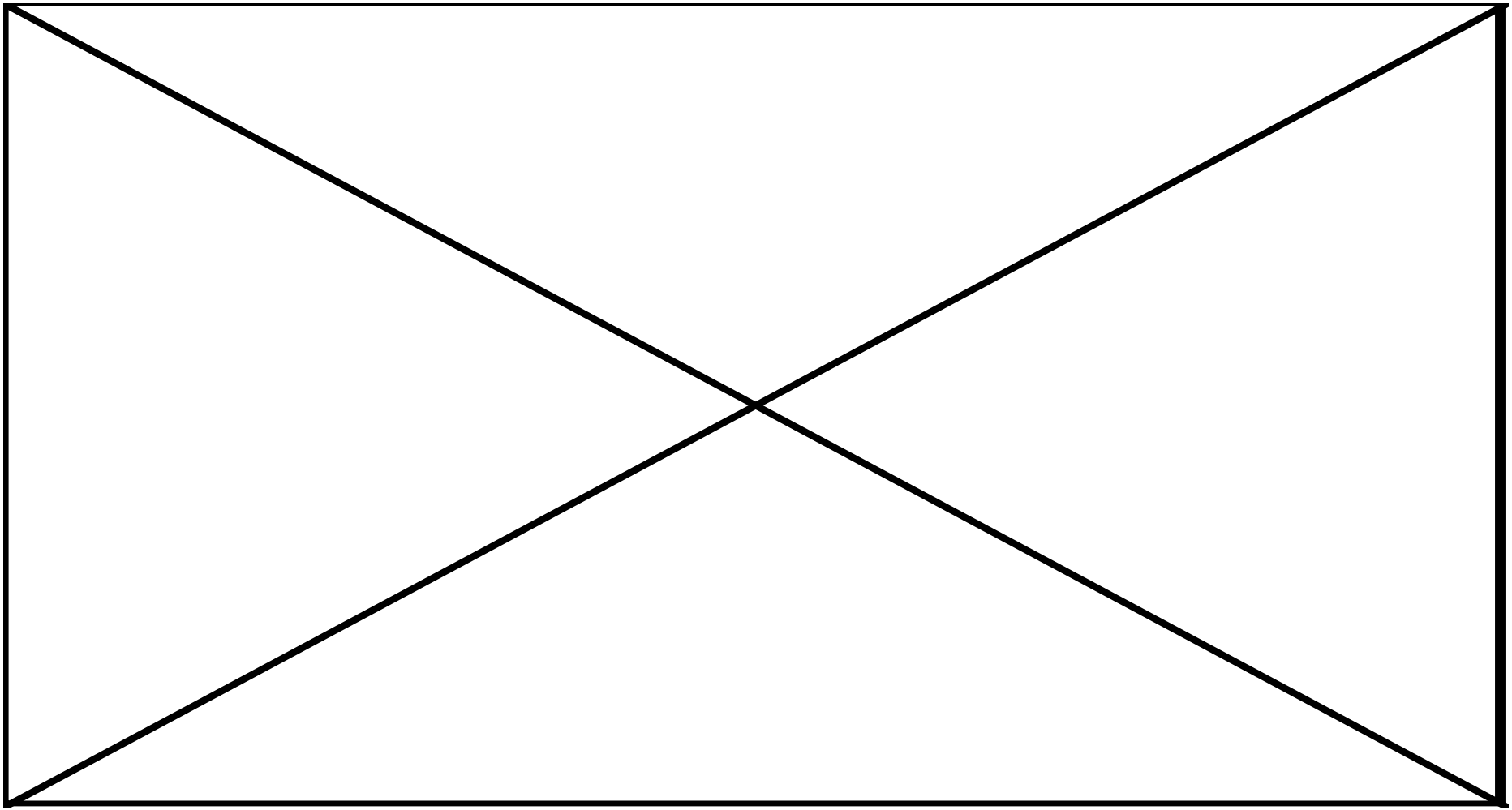
# WHY THE ROCKY MOMENT?

## Rocky is just like….

Without intervention: fear-laden, traumatized, aggressive Children become fear-laden, traumatized, aggressive Adults

# RECOMMENDATION(S)

- Change the way systems engage clients – being concerned with “what happened?” instead of “what is wrong.”
- Institute Trauma-Informed systems of care
- Launch Trauma-Informed Institutions/Organizations
- Create Trauma-Informed people



# VIDEO PRESENTATION

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# QUESTIONS?????


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