

# *The Carter–Jenkins Center presents*



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# **ON HUMAN AGGRESSION and Youth Violence**

## **Part IV**

### **Thoughts About Violence Prevention**

**By**

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# Prevention of Aggression

-As we have seen in a previous lecture the prevention measures suggested by the W.H.O., addresses the issue mostly, once the problem is there or has occurred. What is needed, is to address the conditions, situations, factors , etc., in human development, that tend to create these problems i.e., what creates the conditions under which human beings develop inappropriate aggression and/or are unable to control it. Normal aggression in itself is necessary and not a bad thing. It has helped the human species to survive.

# Prevention of Aggression

- We believe that what triggers inappropriate, maladaptive aggression is a very complicated problem, influenced and provoked by a multiplicity of variables and situations. The problem given human nature will never be totally solved. Yet, we believe too, that many of the abnormal developmental processes leading to forms of maladaptive pathological aggression could be remedied.

# The limbic system: emotions and aggression

- The limbic system only exists in mammals, the only animals capable of a wide range of emotions
- It is a very complex brain structure dealing with emotions and related behaviors \*
- It comprises many brain nuclei that communicate with each other, with other parts of the brain, and more specially the hypothalamus
- These various nuclei, try at the same time to inhibit each other, in influencing the hypothalamus

\* Much of this info is taken from Sapolsky's Biology and Human Behavior (TheTeaching Comp)

## Basic Mammalian Structures

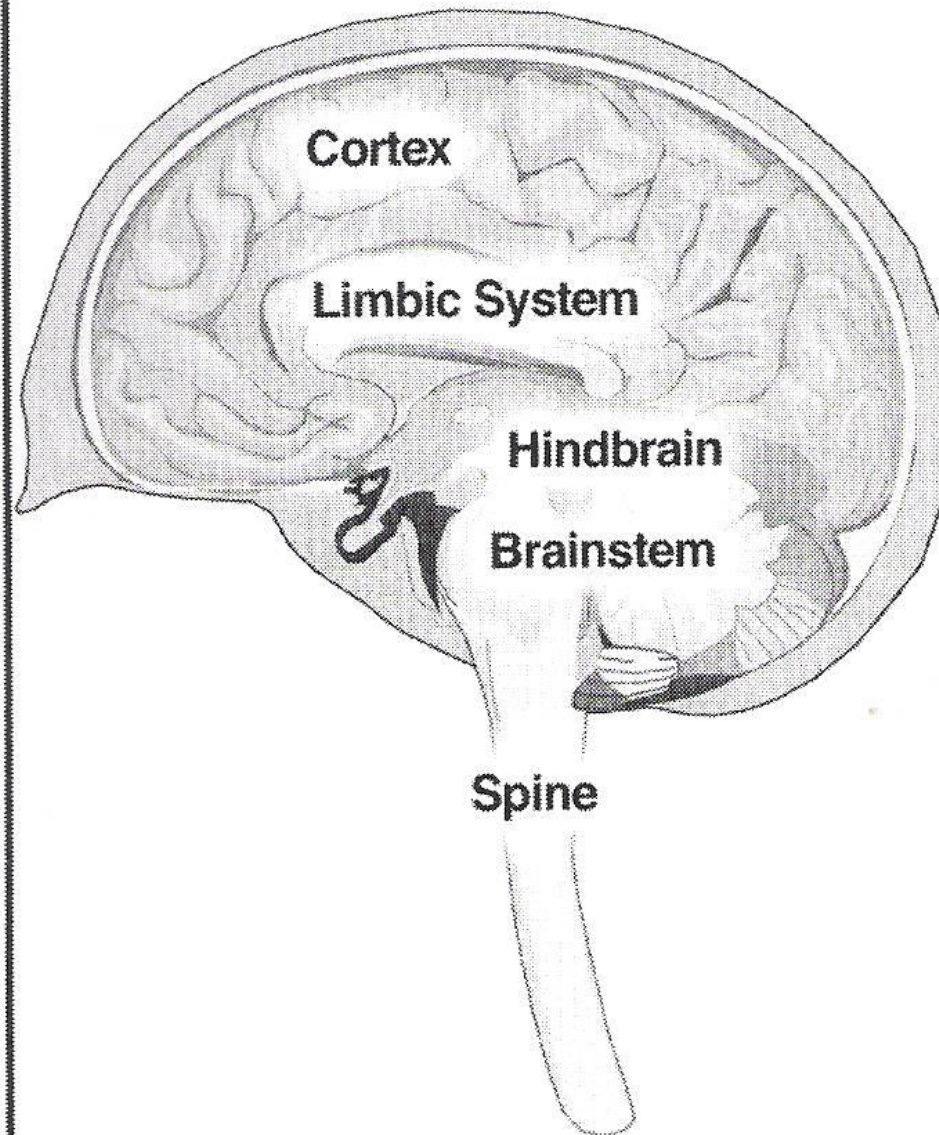


Diagram from Sapolsky's Lectures on Biology and Human Behavior.  
The Teaching Company,

# The limbic system: emotions and aggression

- The structures comprising the limbic system are: the amygdala, hippocampus, septum, cingulate cortex and gyrus, hypothalamus, mammillary bodies, thalamic nuclei and the frontal cortex
- The amygdala and septum have roles in aggression. The septum works in opposition to the amygdala trying to control aggression (oppose each other)
- The frontal cortex, among its many functions, plays a significant role in inhibiting inappropriate social behaviors...tends to go for the right thing. It restrains the amygdala \*



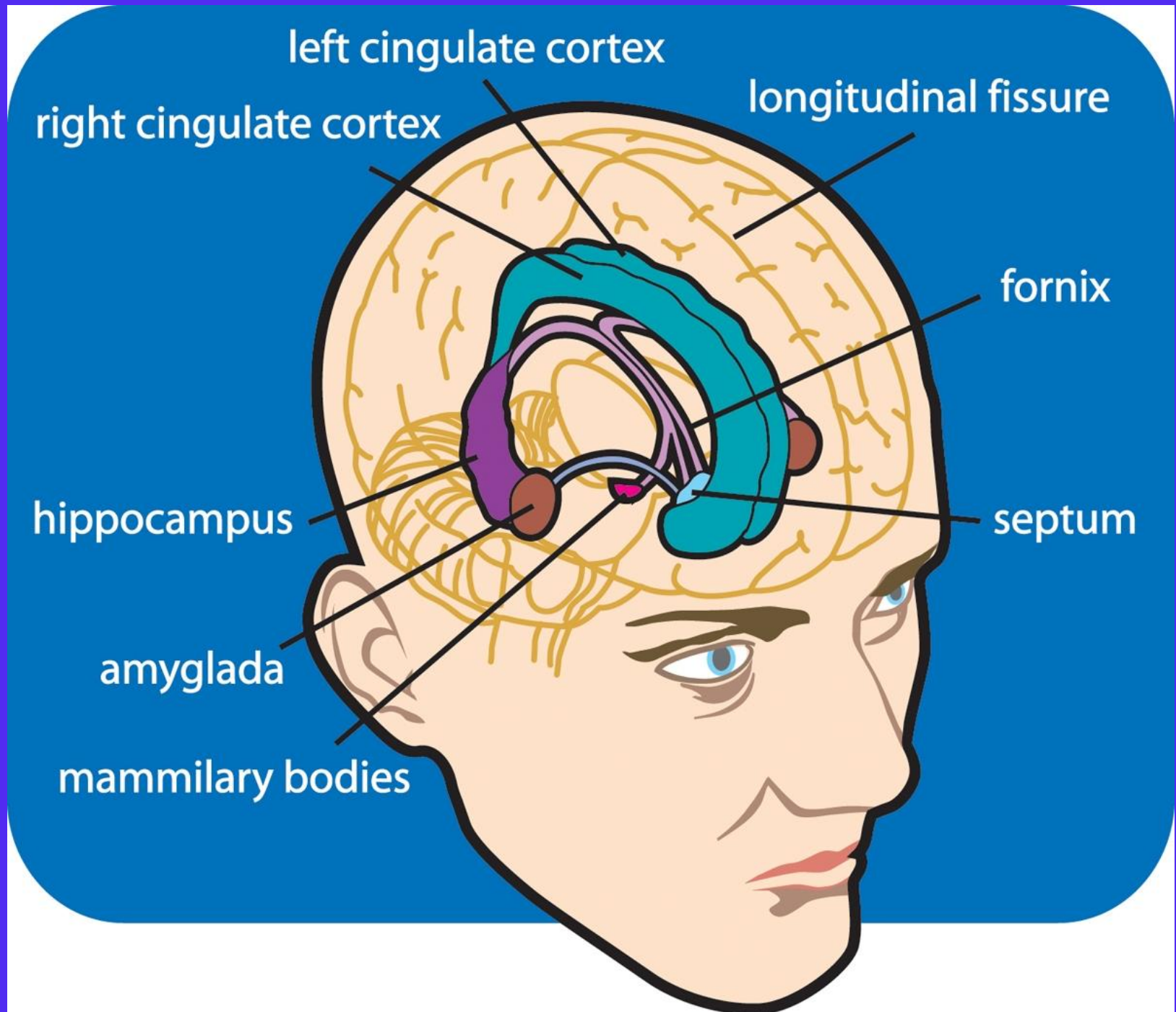


Figure 6d

Connections of the  
Limbic System

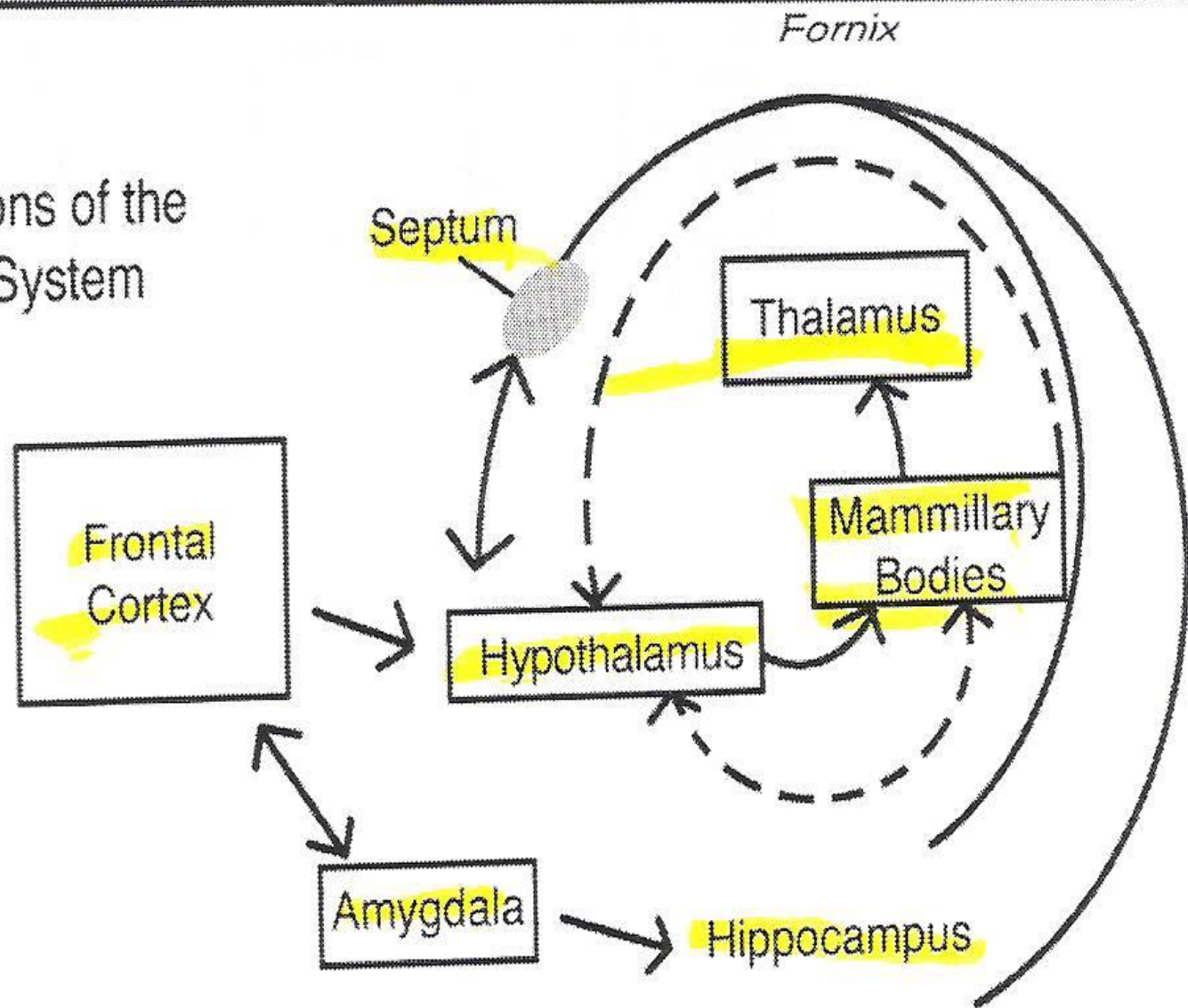
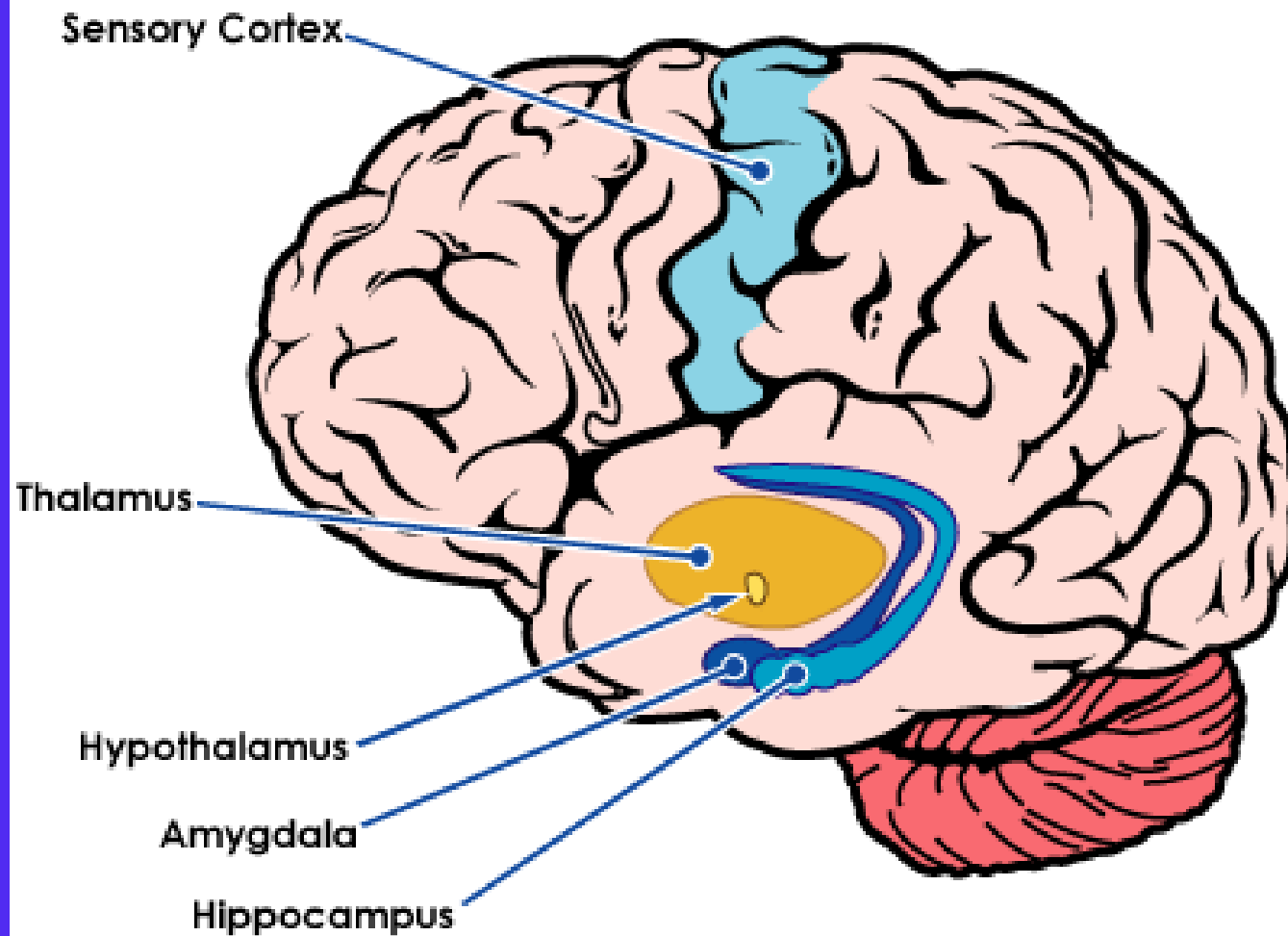


Diagram from Sapolsky's Lectures on Biology and Human Behavior.  
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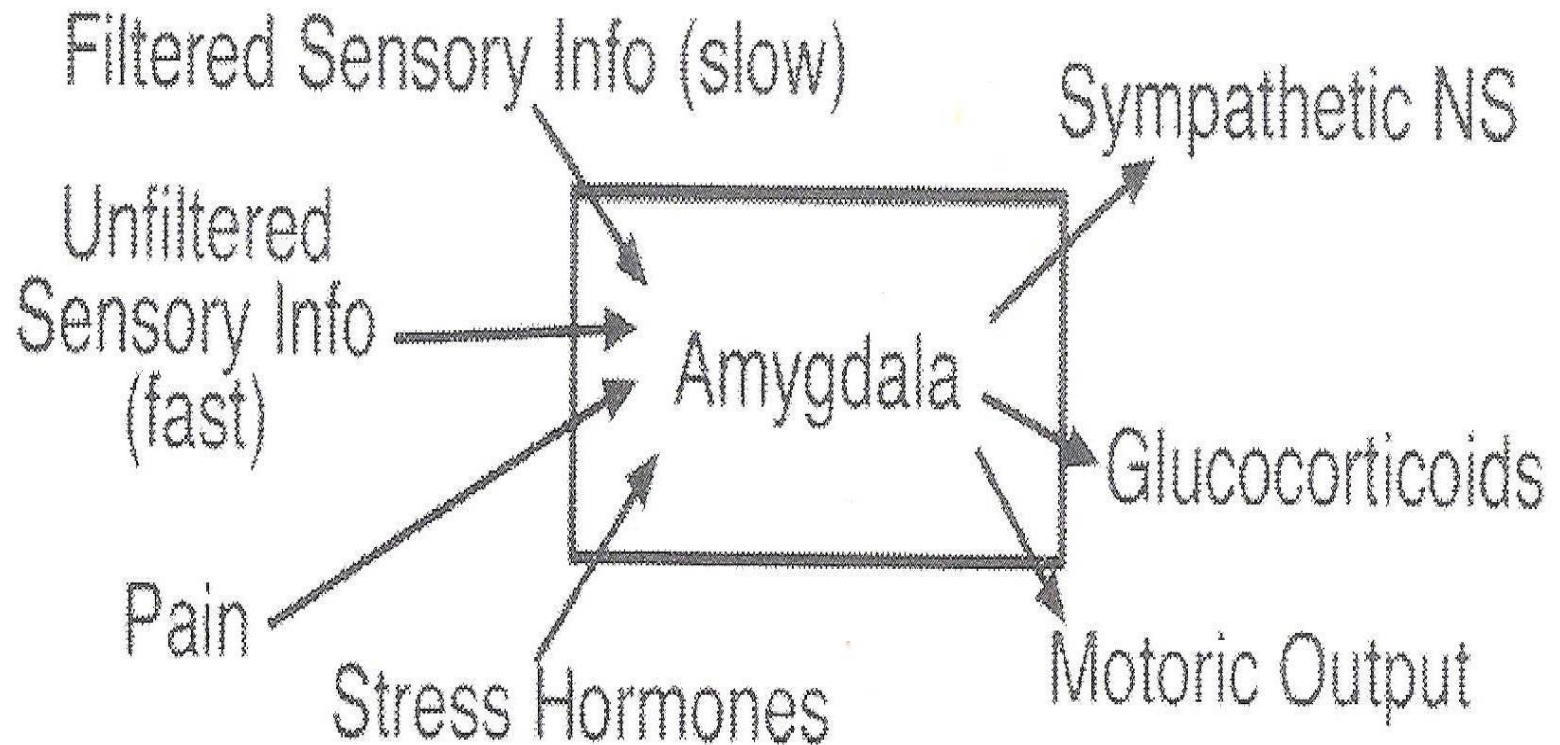
## Parts of the Brain Involved in Fear Response



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Figure 19a

## Inputs and Outputs of the Amygdala



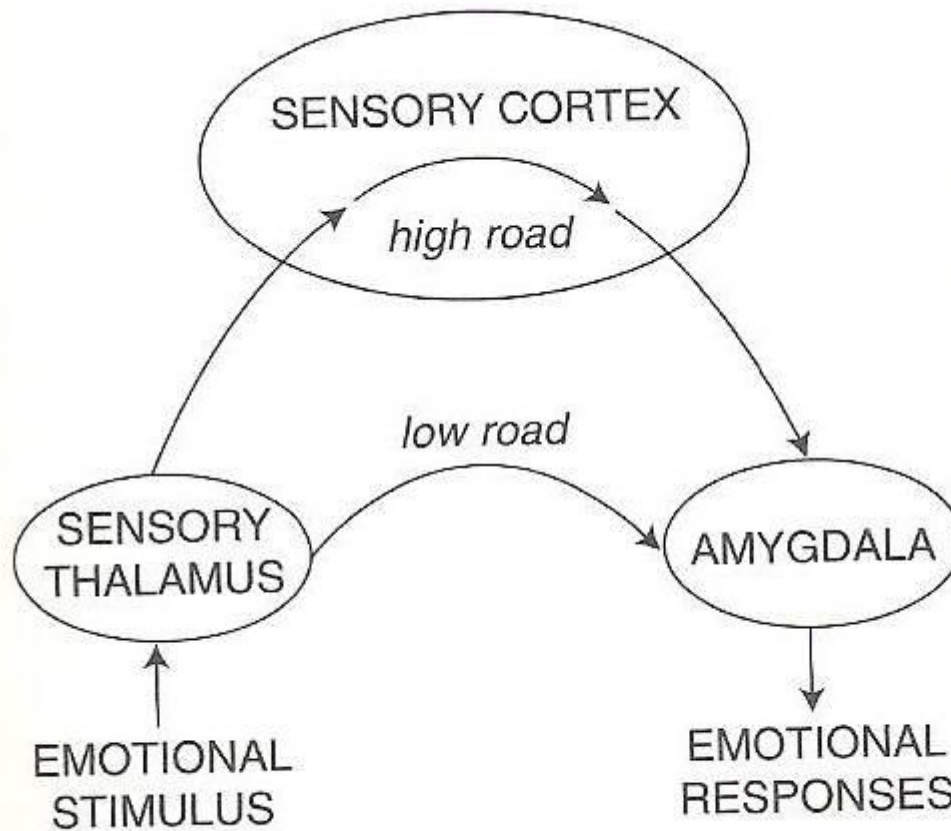
# **The limbic system: emotions and aggression**

- The amygdala sends projections to the frontal cortex to do the easier thing.**
- Serotonergic projections go to frontal cortex, inhibiting impulsive behavior. Low serotonin levels are associated with impulsive, thoughtless behavior.**
- Dopamine projections go to the frontal cortex as well (from the ventral tegmentum). They help the frontal cortex, to hold out to do the right thing**

# **The limbic system: emotions and aggression**

- **Fear, stress, pain, rejection and frustration decrease dopamine transmission and stimulate aggression**
- **Testosterone role on aggression apparently is limited**
- **Glucocorticoids release in moment of distress, can disrupt the frontal cortex, leading to bad decisions**
- **We need now to address how very early experiences and stimulation can and do contribute to the development of the brain or lack of it...**
- **We need to address as well the issue of the role of the “mind” on brain function and on aggression**





Adapted with permission from J. LeDoux, *The Emotional Brain* (New York: Simon & Schuster, 1996).



## ■ Corpus Callosum

Thought to be involved in problem solving and creativity, this **bundle of nerve fibers** connects the left and right hemispheres of the brain. During adolescence, the nerve fibers thicken and process information more and more efficiently

## ■ Prefrontal Cortex

The CEO of the brain, also called the **area of sober second thought**, is the last part of the brain to mature—which may be why teens get into so much trouble. Located just behind the forehead, the prefrontal cortex grows during the preteen years and then shrinks as neural connections are pruned during adolescence

## ■ Basal Ganglia

Larger in females than in males, this part of the brain acts like a **secretary to the prefrontal cortex** by helping it prioritize information. The basal ganglia and prefrontal cortex are tightly connected: at nearly the same time, they grow neuron connections and then prune them. This area of the brain is also active in **small and large motor movements**, so it may be important to expose preteens to music and sports while it is growing

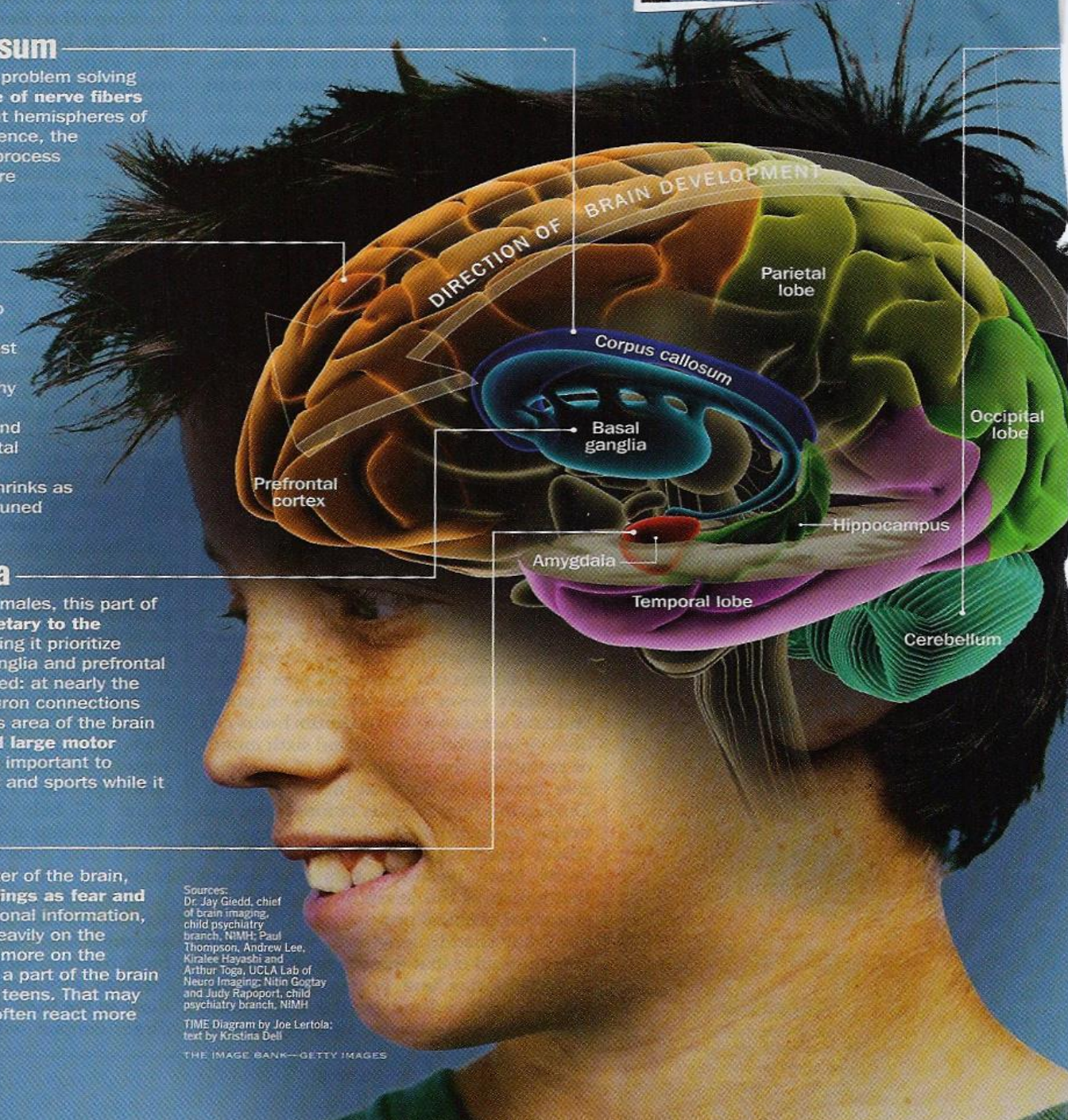
## ■ Amygdala

This is the emotional center of the brain, home to **such primal feelings as fear and rage**. In processing emotional information, teens tend to rely more heavily on the amygdala. Adults depend more on the rational prefrontal cortex, a part of the brain that is underdeveloped in teens. That may explain why adolescents often react more impulsively than adults

Sources:  
Dr. Jay Giedd, chief  
of brain imaging,  
child psychiatry  
branch, NIMH; Paul  
Thompson, Andrew Lee,  
Kiralee Hayashi and  
Arthur Toga, UCLA Lab of  
Neuro Imaging; Nitin Gogtay  
and Judy Rapoport, child  
psychiatry branch, NIMH

TIME Diagram by Joe Lertola;  
text by Kristina Dell

THE IMAGE BANK—GETTY IMAGES





# Brain and Mind Interactions

- The computer metaphor.:

  - a) The Hardware in computers & humans

  - b) The Software in computer & humans

- The issue of mind and brain interaction:

  - we develop cultures, religions, philosophical, political systems and can transmit that information to the next generations. Ex. of Muslim extremism...

# **The Role of the family in preventing aggression**

- Family role in Brain, Ego functions and Super-Ego Development...**
- Family role in the development of Object Relationships.:**
  - a) Need satisfaction type...**
  - b) Object Constancy type...**
- Family role in the development of Empathy...**

# **The Role of the family in preventing aggression**

- Family role in providing Healthy Models for identification.:**
  - a) Process starts at Family Level...**
  - b) Continues at Community Level...**
- Family role in the development of Ego Ideals...**

# **The Role of the family in preventing aggression**

- Family role in Education (general and in schooling)...**
- Family role in teaching controls over impulses...**
- Family role in setting and teaching limits, in teaching right from wrong, in rewarding good behavior, restricting or punishing bad behavior...**

# **The Role of the family in preventing aggression**

- Role played by high rates of divorce...**
- Role played by alcohol, drugs and promiscuity in dysfunctional families...(abuse, neglect, identifications, etc)**
- Role of Gangs in substituting for very dysfunctional and meaningless families...**

# Other factors

- The role of poorly thought out welfare...
- Increasing welfare has not led to a reduction of violence nor a strengthening of the nuclear family but just the contrary...
- The role of governments...
- The role of politicians...

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# *The End*

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