The Brain in the Palm of your Hand

(From *Parenting from the Inside Out*, by Daniel Seigel and Mary Hartzell)
Adapted by Suzanne Smitha and Jody McVittie

Your Wrist and Palm:

Brain Stem - responsible for survival instincts: flight, freeze or fight; Autonomic ("automatic") functions

Your Thumb:

Mid brain - where we store and integrate memories, hold fears.

Your Fingers over your Thumb:

Cortex – perception, motor action, speech, higher processing and what we normally call "thinking,"

Your Fingernails: (this is approximately behind your eyes in your head)

Orbitofrontal cortex/ pre-frontal cortex – a primary integration center for the brain, almost like a "switchboard" that makes sure messages get where they need to go.

Documented functions of the pre-frontal cortex are:

- Regulation of body through autonomic nervous system
- Emotional regulation
- Regulation of interpersonal relationships
- Response flexibility
- Intuition
- Mindsight
- Self Awareness – autonoesis
- Letting go of fears (only in lab animals so far)
- Morality

What happens when you are stressed, overwhelmed, or trying to deal with traumatic or painful memories? The pre-frontal cortex shuts down; it no longer functions. (This is temporary, thank goodness!) You have flipped your lid. You can't use most of those 9 functions above. And you can't learn without them. So you need to calm down and bring the orbitofrontal cortex back into functioning.

Mirror Neurons: the "monkey see, monkey do" neurons that pay a key role in social interaction, connection and learning.

Go to: http://www.pbs.org/wgbh/nova/sciencenow/3204/01.html
To see an excellent 14 minute Nova episode on Mirror Neurons.

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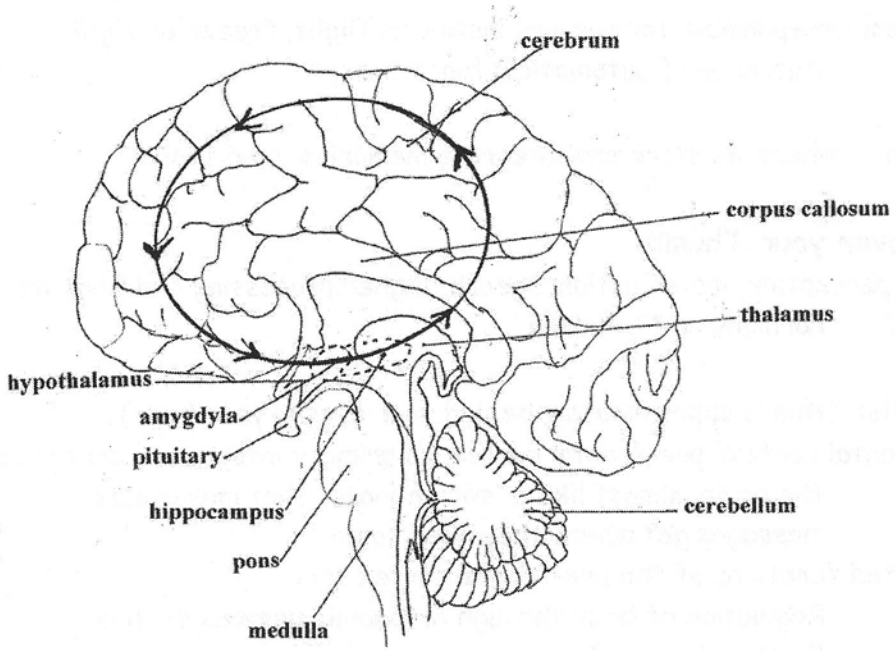
The Brain functioning WITH the prefrontal cortex :

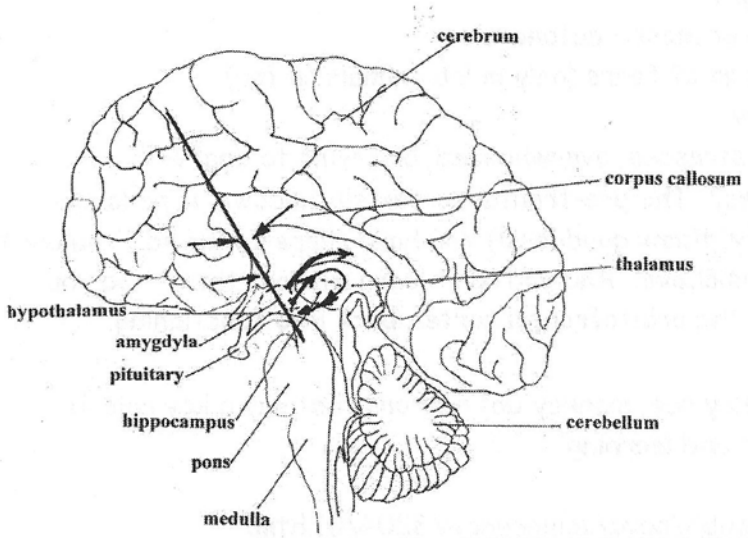
Integrative functioning (the high road)



Integrative functioning: "A form of processing information that involves the higher, rational, reflective thought process of the mind. High-road processing allows for mindfulness, flexibility in our responses and an integrating sense of self awareness. The high road involves the prefrontal cortex in its processes." Siegel and Hartzell, *Parenting from the Inside Out*.

The brain functioning WITHOUT the pre-frontal cortex:

Non- integrated function (flipping your lid, the low road)



"Low road functioning involves the shutting down of the higher processes of the mind and leaves the individual in a state of intense emotions, impulsive reactions, rigid and repetitive responses and lacking in self reflection and the consideration of another's point of view. Involvement of the prefrontal cortex is shut off when one is on the low road." Siegel and Hartzell, *Parenting from the Inside Out*.

Drawings adapted from Siegel and Hartzell, Parenting from the Inside Out. P. 157