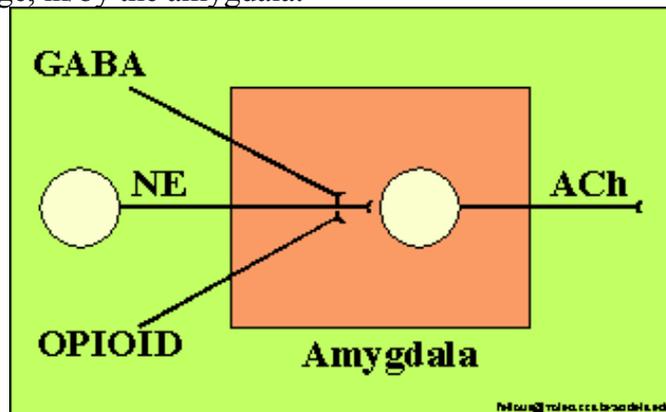


Emotion: Region Level: Amygdala



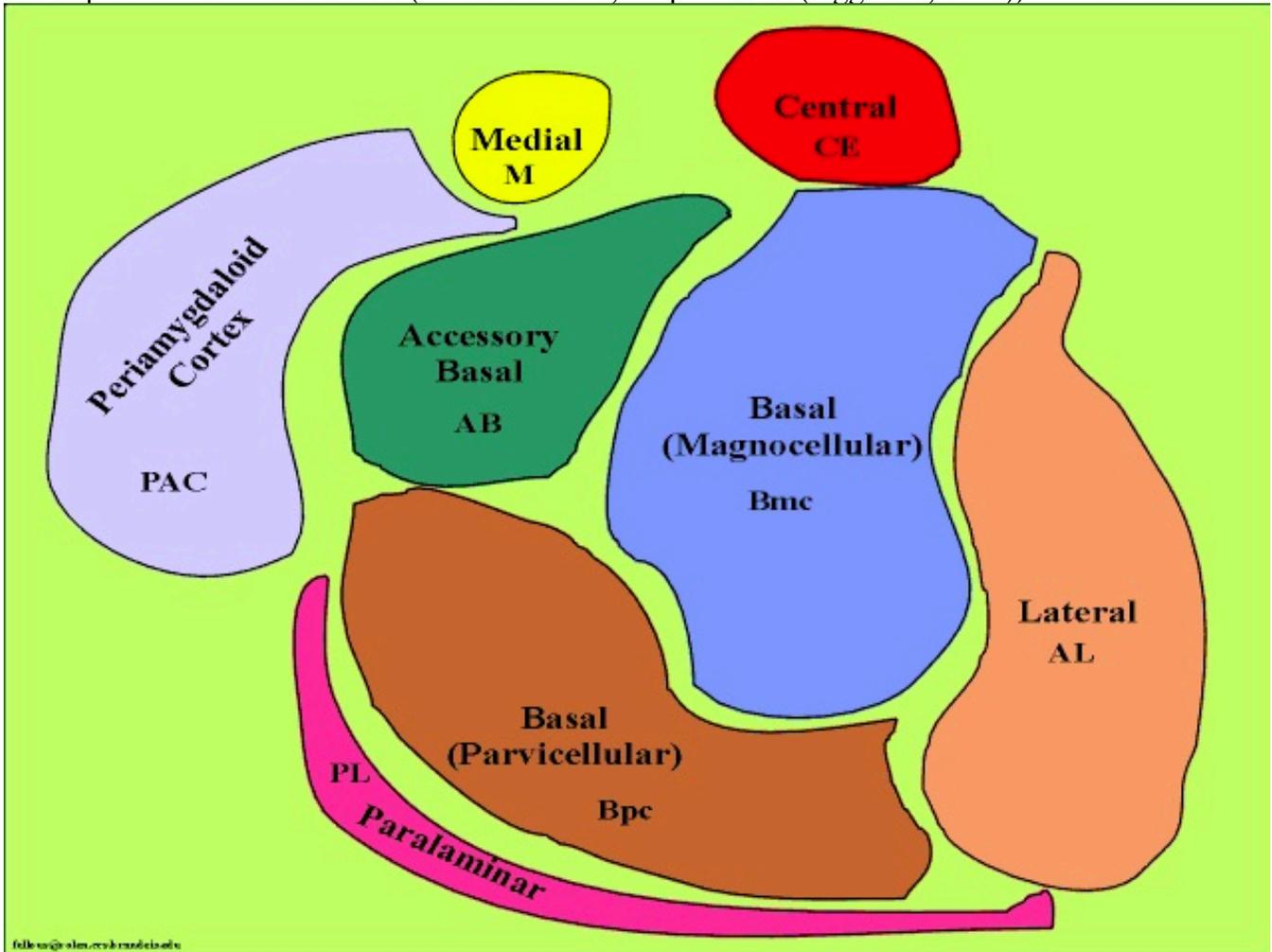
- Amygdala and Sensory processing:
 - A sensory gateway to the emotions (Aggleton & Mishkin 1986).
- Amygdala and Memory:
 - Fear Conditioning: (LeDoux 1991b)(Davis 1992)
 - (McGaugh et al 1990; McGaugh et al, 1991): Involvement of the amygdaloid complex in neuromodulatory influences on memory storage.

Several neurochemical systems have been identified (Adapted from (McGaugh 1992)) and influence memory storage, in/by the amygdala:



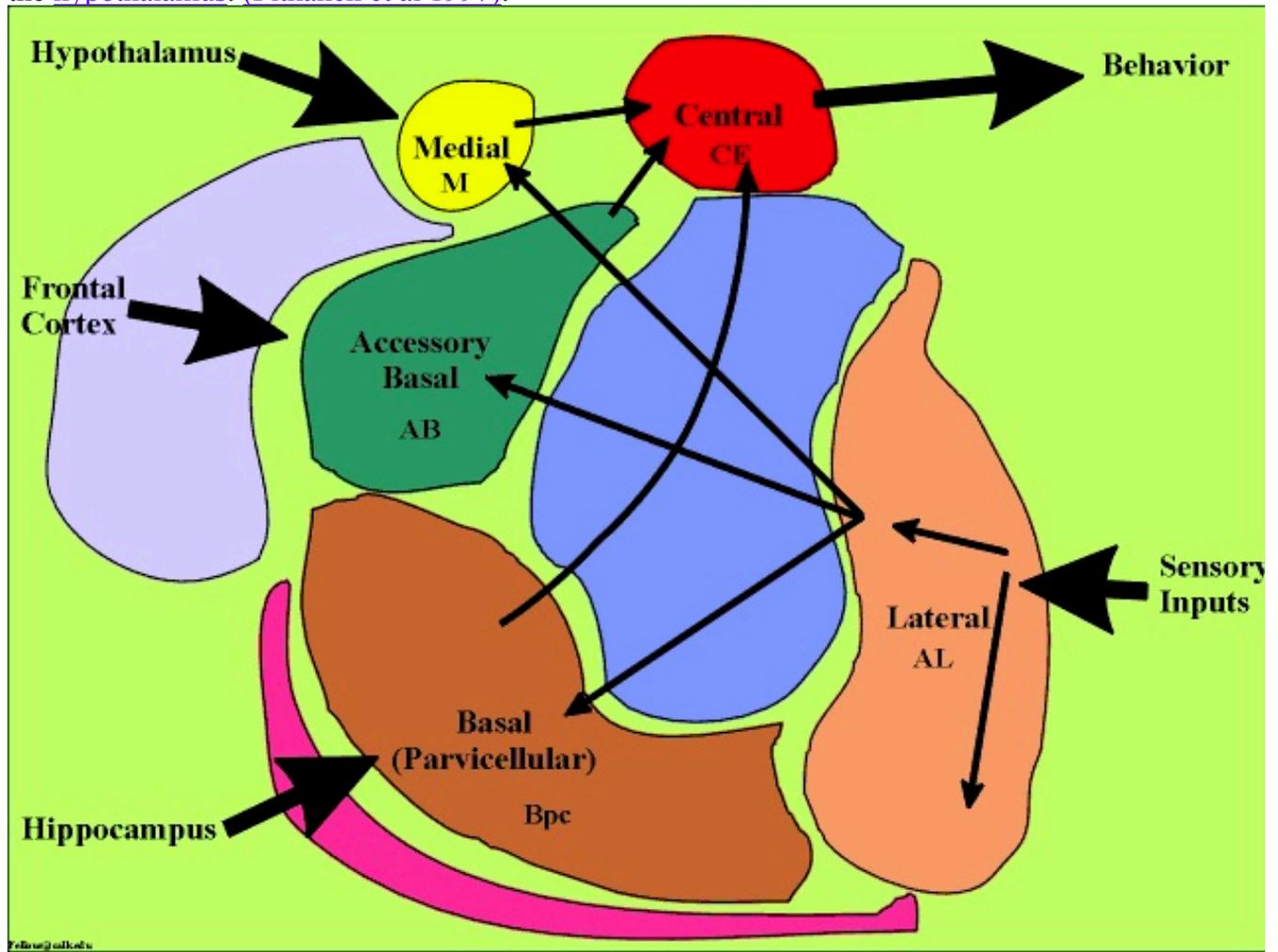
- Amygdala and Emotion:
 - Bilateral lesions of the amygdala produce tameness, abnormal exploratory and sexual behaviors, and incapacity to learn aversive stimuli ([Weiskrantz 1956](#), [Kluver-Bucy, 1939](#)).
 - Monkeys voluntarily work to obtain electrical brain stimulation of the amygdala ([Rolls et al. 1980](#))
 - Emotion and the Amygdala: (LeDoux 1992).
 - The role of the amygdala in conditioned fear: (Davis, 1992) - The startle reflex.
 - The functional aspects of amygdala lesions in humans: A comparison with findings from monkeys: (Aggleton, 1992).
 - Kindling and the Amygdala (Cain, 1992): Electrical stimulation of the amygdala.
 - Part of the [LeDoux](#) circuit.
- Amygdala: General
 - Locate it [on a MRI Slice](#).

- Locate it [on a Rat Brain](#) Slice (sagittal section).
- An Exploded View of its nuclei (coronal section, adapted from (Aggleton, 1992)):



- Lateral nucleus (AL) neurons receive sensory information from the thalamus and cortex. It is a site of convergence of CS and US pathways in fear conditioning, hence a possible site of synaptic modification underlying learning (Romanski et al 1993).
- Recent studies aim at elucidating the internal connectivity of the amygdaloid complex, and understand the nature of its computation. The information pathway seems to consist in a common entry point (the lateral nucleus), several parallel streams to other nuclei (Medial, accessory basal, or basal, for example) and a common output point (the central nucleus). Each of the internal streams are modulated by other brain structures such as the [hippocampus](#), the [frontal cortex](#) or

the hypothalamus. (Pitkanen et al 1997).



Editor: Jean-Marc Fellous



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