

1. Neurosciences discoveries parallels Creative art therapies practices
2. Therapy is a learning process: pic of LTP, change in neurons
3. Brain parts for brain functions: pic of the brain with functions: cognition, memories, emotions, senses
4. These functions interact: brain images with pic showing structures taking care , linking functions
5. Conditioning, associations of event and emotions/ sensations: pic that represent this concept
6. Fear example, fear reaction and associations
7. Splitting: right and left differences
8. Dissociation/ overreaction
9. Verbaltherapy/ Body therapies
10. Psychodrama: new association- new meaning
11. Dramatherapy: projection- less dissociation
12. Metaphor

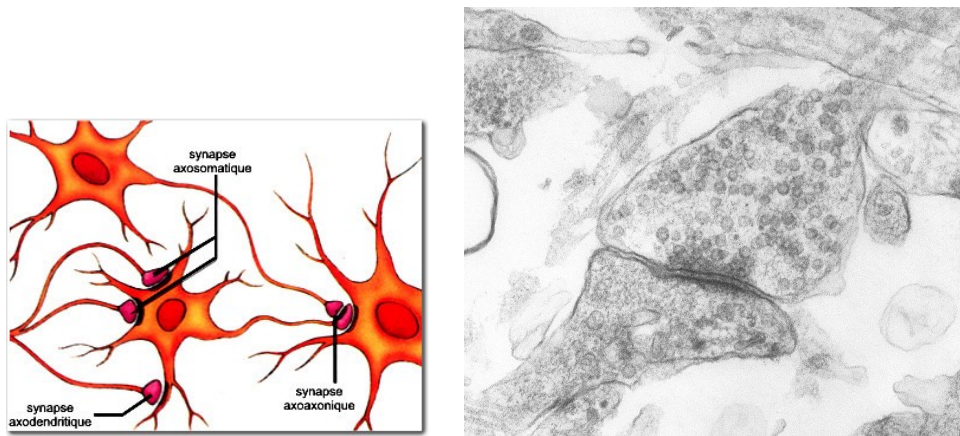
### **1. Neurosciences' discoveries parallel Creative art therapies practices**

Cognitive psychology	Memory.....	Psychotherapy
Neurobiology	Emotions.....	Creative art therapies
Neuropsychology.....	Cognition.....	Psychoanalysis
neurophysiology.....	Sensations.....	Body therapies

Hippocrates describes each of our individual moods , “pleasure, merriment, laughter and amusement, as of our grief, pain, anxiety and tears , is none other than the brain

Riley is an art therapist who directly says that “when the concepts of neuropsychology guide the treatment, the road map is not hard to follow and (her) clients and (herself) travel it together ”

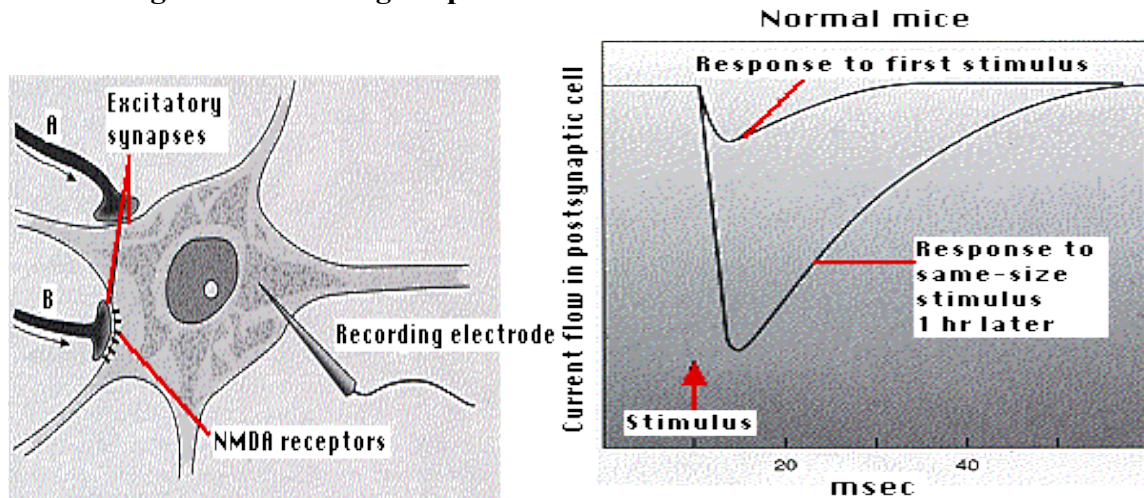
## 2. Therapy is a learning process



Each interaction with the environment impacts on neuronal tissues through communication of neurones, dendrites, axons and neurotransmitters. Plastic changes can be observed when learning occurs.

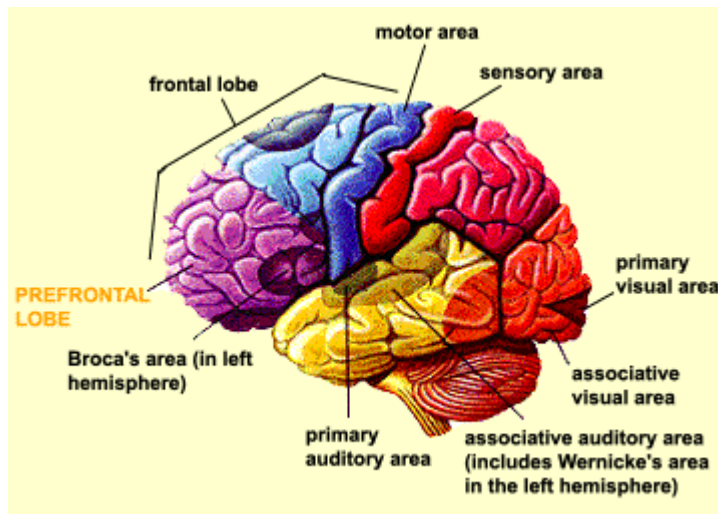
Therapy targets changes in behaviour, perception and emotional reactions that are the results of experiences and traumas. Neurobiological discoveries show that biological changes underlines those apparent changes.

## 3. Learning is a neurobiological process



Depending on plastic changes, the individual will not react the same way to the stimulus. Behaviour, perceptions and emotions depend on those neurobiological changes.

#### 4. Brain structures take care of the different human functions.



Specific brain areas have been recognised as being involved in specific functions such as sensations, memory, language, emotions, cognition, attention. However, the areas and functions are strongly interconnected. Synesthesia is when different sensory areas are connected.

#### 5. Selective treatment of the information

Look at the chart and say the COLOUR not the word

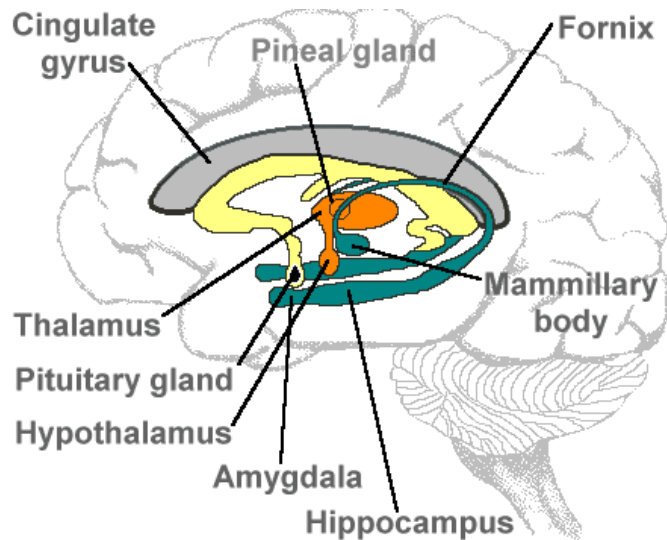
**YELLOW BLUE ORANGE**  
**BLACK RED GREEN**  
**PURPLE YELLOW RED**  
**ORANGE GREEN BLACK**  
**BLUE RED PURPLE**  
**GREEN BLUE ORANGE**

##### **Left - Right Conflict**

**Your right brain tries to say the colour but  
your left brain insists on reading the word.**

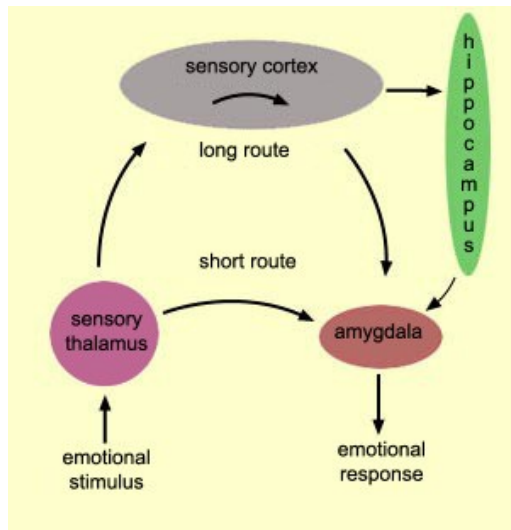
Left and right hemisphere treat the information differently. When the left hemisphere takes care of verbal treatment, the right hemisphere is more specialised in emotive treatment.

## 6. The limbic system

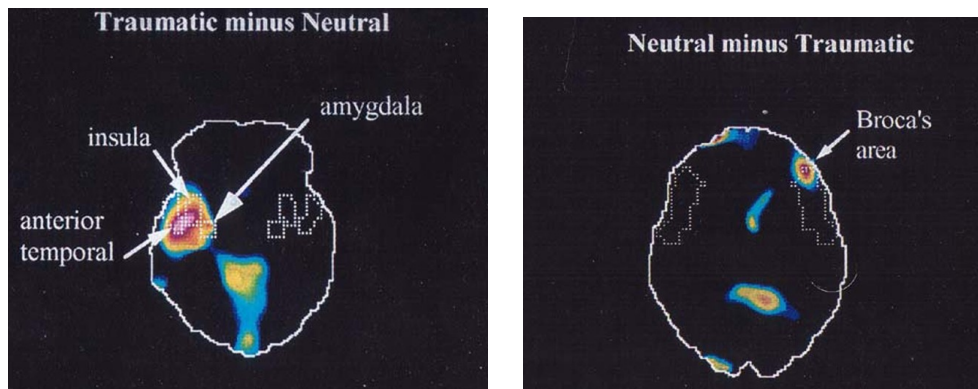


The limbic system is the anatomic system taking care of the emotion treatment. It is connected to areas involved in emotional and physiological responses (hypothalamus, amygdala), and also involved in memory (mammillary body) and associations to environmental cues (hippocampus).

## 7. Traumatism and emotional treatment

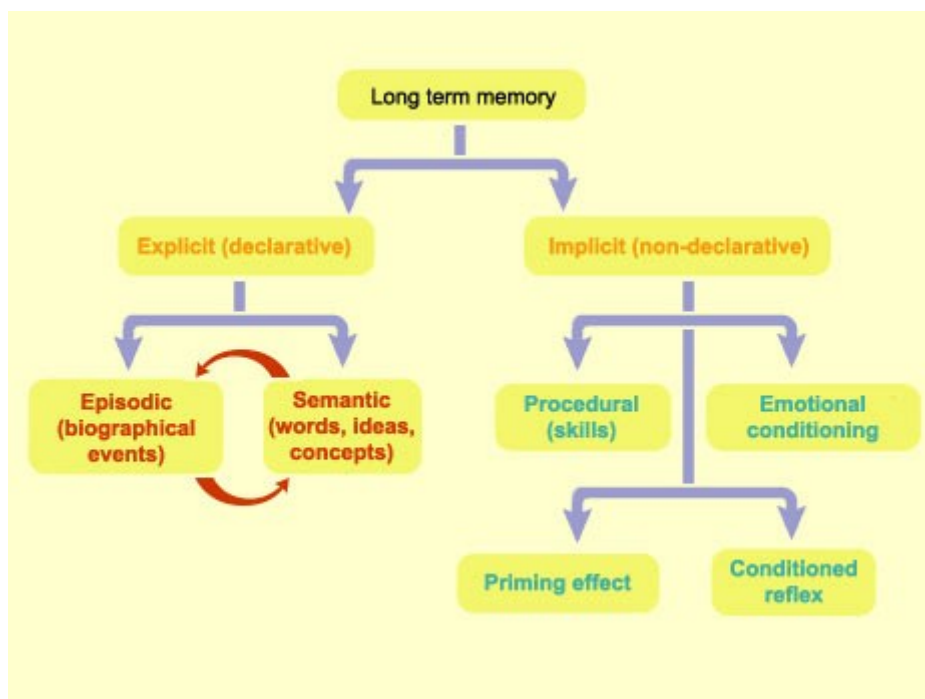


Under stress, there is an adaptive response from the individual so as to react quickly, this response overpasses the hippocampus and therefore the association of the emotional response with environmental cues: when the stress response isn't associated to a specific context, it may occur in very different circumstances.



In trauma, the event is recorded with the amygdala, it becomes an emotional memory, the verbal area (Broca) cannot treat the information: there is creation of a “speechless terror (1988, Van der Kolk) but also a “true emotional memory (Ledoux)

### 8. Somatic and emotional memories



Under stress the event is recorded in explicit memory, it is an emotional conditioning. The event is recorded but cannot be verbalised. When traumas weren't recorded verbally, they cannot be worked through verbally either. Here is the importance of Body therapies.

Somatic/emotive memories are those memories that are recorded under somatic/emotive systems. Psychosomatic issues can be seen as a symptom.

## 9. Creative art therapies take care of somatic and emotional memories

Verbal therapies and somatic therapies complement each other so as to take care of every aspect that needs to be worked through. Creative art therapies involve a large part of somatic treatment.

Dance therapy and kinesthetic memory

Music therapy and audio memory

Art therapy and visual and sensory memory

Psychodrama is the *integration* of the somatic/emotional treatment and verbal and intellectual treatment:

In Psychodrama, there is the possibility of creating a new association between a specific situation and an emotional reaction. A new perception of the context offers the person new possibilities to react and feel.

In Dramatherapy, one doesn't directly work with the traumatic emotional event but with stories so that the stress reaction isn't reactivated. Work is done at a metaphorical level.

A metaphor is the association between an image, meaning and emotions. When one works with metaphors it is actually the associations to meanings that change!