

Brain Function and Learned Helplessness

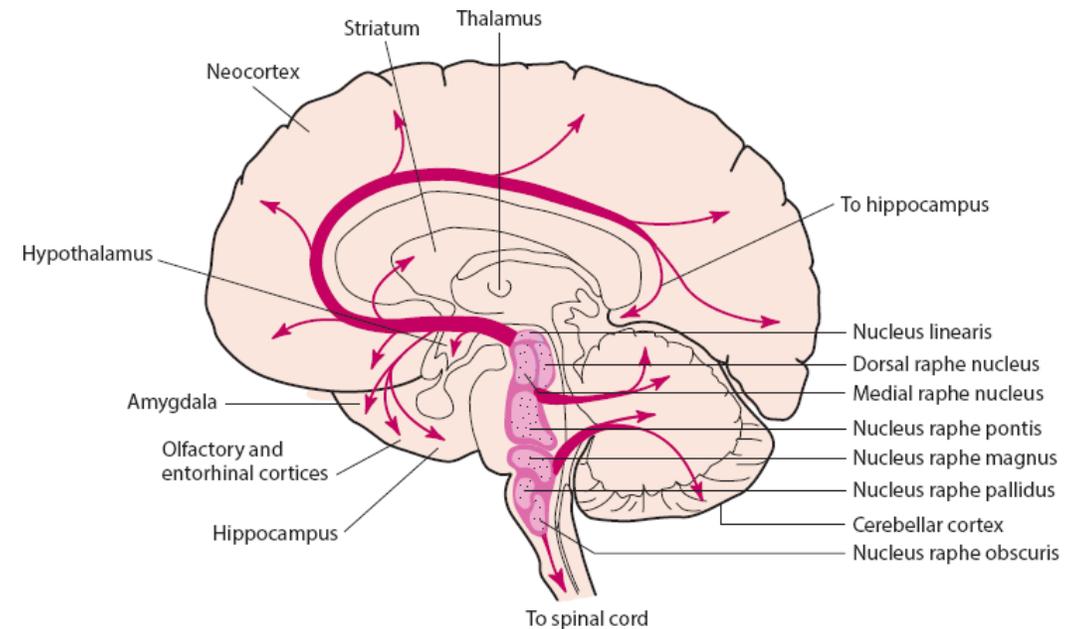
WINNING
— Words —

Science of Prospection

- Learned helplessness is a default position – it comes from the lower part of our brain – similar to reptiles –
- When reptiles are subjects to an attack – they curl up into a ball and hope that the event will pass
- This is what we do as a default position – using the lower part of our brain
- Reptiles do not have a frontal cortex but we do



- The frontal cortex (where learning occurs) gives us a repertoire of behaviour we can do to control bad events
- Another part of the brain is called the dorsal raphe
- When it is turned on it produces helplessness and panic in the lower part of the brain
- There is a circuit leading from the frontal cortex that turns off the dorsal raphe



Source: Eric J. Nestler, Steven E. Hyman, David M. Holtzman, Robert C. Malenka: *Molecular Neuropharmacology: A Foundation for Clinical Neuroscience*, 3rd Edition: www.neurology.mhmedical.com
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Study

- Rats learned they could escape the shock
- Researchers turned on their dorsal raphe
- They became helpless
- Conversely, rats that had inescapable shock were no longer helpless once the dorsal raphe was turned off

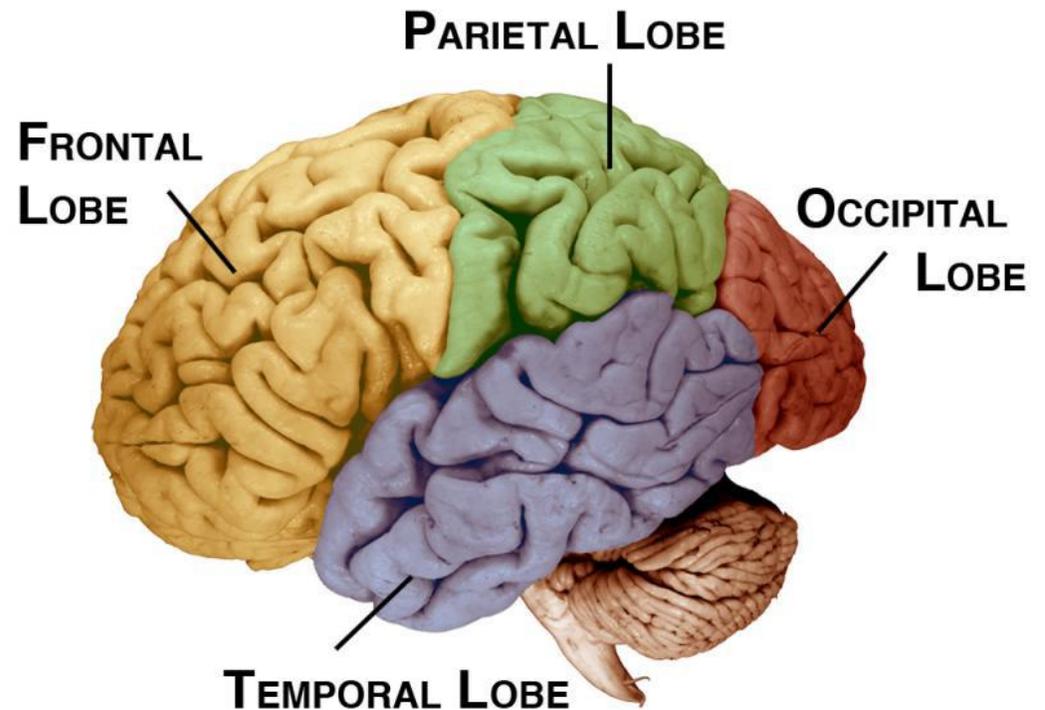


What Does This Mean?

- When bad events or trauma occur, you can never annihilate it, it's always going to be there
- What you can do is to buffer against it
- You can learn mastery
- You can learn control
- You can reframe the bad event to stop the occurrence of helplessness



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- Therapies that try to undo the past don't work
 - Therapies that build mastery and control and perception are our best armor against bad events
 - Using the frontal cortex is needed for this
 - Thinking from the back part of the brain (fight or flight does not)



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- Hockey analogy:
 - The difference between the team that fights to the end and the one that gives up
 - Wining team – the frontal cortex is firing on all cylinders to not give up
 - So much is happening in the brain all at once.



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- Somatizer: A person who converts negative psychological pain into physical pain
 - Rats were given a tumour and either got inescapable shock, escapable shock or nothing. The group that gets nothing - 50% of the animals gets a tumor and die and 50% fight it off and live.
 - The group that's helpless: 75% of the animals get the tumor and die,
 - The group that was not helpless: - gets the same bad event, but has control over
- 25% of those animals get the tumor.

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- Is physical health a real phenomenon?
 - Or is physical health merely the absence of physical illness
 - So why do we see mental health as the absence of mental illness
 - Mental health is optimism, positive emotions, strengths, meaning in life
 - This means psychological health is a real phenomenon



Optimistic Mind Associated with Healthy Heart

<https://blogs.scientificamerican.com/beautiful-minds/is-an-optimistic-mind-associated-with-a-healthy-heart/>