

November 2022

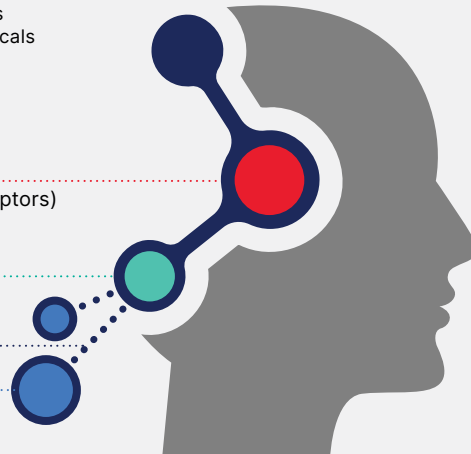
When confronted with the myth that extrinsic rewards crowd out intrinsic motivation, reference academic research, motivational theory, and empirical evidence to set the record straight.

Effective rewards create emotion, over time, this helps build new and stronger connections in the brain between the stimuli (reward) and desired learning, behaviors and memory.

► **Every living thing with a spinal cord possesses sensory cells, neural (brain cells), and muscle cells. These cells communicate through electrical pulses and chemical reactions.**

■ Stimulus
 ■ Interneurons
 ■ Transmitters
 ■ Neurochemicals

- Electric signals from sensor cells
 Arrive at Brain Cell Dendrites (Receptors)
- Travel to Cell Body
- To the Axon Terminals
- Where neurochemicals (serotonin, dopamine) in the Synaptic Cleft cause action in a muscle cell



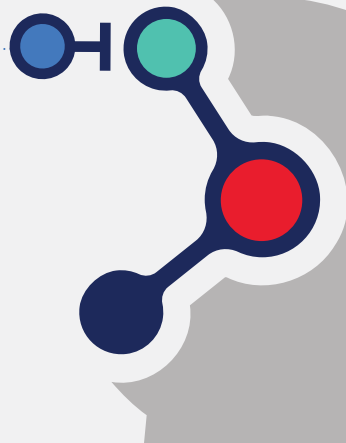
“Interneurons” decide what’s important and what’s not. They let the signals of the former pass from brain cell to muscle cell, while blocking the latter.

Where a stimuli (i.e., reward) is novel and/or triggers emotion, it is more likely to be prioritized by interneurons.

The resulting chemical reaction activates recessive genes which create proteins causing the growth of new synaptic connections. Over time, these form long-term memory and behavior change.

► **Habituation**

● **Habituation** leads to an almost complete shutdown of synaptic transmission



■ Stimulus
 ■ Interneurons
 ■ Transmitters
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► **Learning/Memory**

● Where stimulus is impactful and memorable it creates more Neurochemical reactions resulting in the creation of more active terminals between brain cell (neuron) and muscle cell (behavior) and, therefore lasting behavior change.



■ Stimulus
 ■ Interneurons
 ■ Transmitters
 ■ Neurochemicals

References

Eric R. Kandel (2006. In Search of Memory: The Emergence of a New Science of Mind. W.W. Norton & Company, New York