



The Brain's Emotional Systems, Mental Health, and Learning

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The Brain & Behaviour

- The brain governs our feelings, thoughts, and behaviour, through neuroanatomical connections and neurochemical interactions
- Emotions, thoughts and behaviour are interconnected in everyday life through:
 - front (prefrontal) to back (posterior parietal) &
 - top (dorsolateral prefrontal) to bottom (orbitofrontal-limbic) brain systems

The Brain's "Emotional Systems"

- Primary "emotional systems" in the brain are connected to our internal (body) sensations, thoughts, and external (environment) monitoring systems
- Emotional energy facilitates all voluntary behaviour
- Emotional systems are "wired to go" at birth
- Emotional regulation systems continue to change throughout life, through learning, life experience , and neuroplasticity in specific brain-systems

Emotional Control “Systems”

1. ***Automated***: “bottom-up” brain systems (e.g., amygdular-paralimbic), prominent hereditary influences, associated with infant “temperament”, moderated throughout development
2. ***Voluntary/Learned***: “top-down “ brain systems (e.g., dorsolateral prefrontal-subcortical), promoted through: executive skill capacities, good parenting, education, prosocial influences, & therapeutic interactions

Emotions & Mental Health

- Negative emotions (urges to explicit feelings) impair objective thinking and undermine mental health
- Mental health problems always include either negative, or dysregulated, or misguided emotions
- Personal success experiences decrease negative emotions and promote positive emotions
- Increased opportunities for success improves emotional functioning and mental health

Emotions, Motivation & Learning

- Strong positive and negative emotions promote long term conscious and unconscious memories through proximal brain connections
- Positive emotions also promote intrinsic motivation
- Positive motivation fosters memory and subsequent learning