

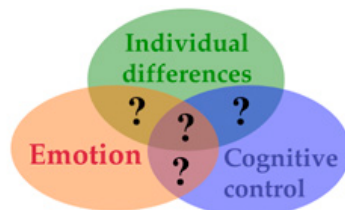
Cognitive neuroscience of discovery and innovation

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“Where do new ideas come from?

What psychological mechanisms underlie creative insight?”

Gick & Holyoak 1980

For research purposes...

Creativity is a swamp

Big

Messy

Teeming

Mysterious

Powerful

Oozing, unstable

Fresh & rotting

Toward a model of the swamp

phenomenon

mediators

moderators

For research purposes...

Islands of potential

Cog neuro of creativity and ...

- Analogical reasoning
- Semantic association, flexibility
- Novelty & reward
- Metacognition: insight, error monitoring
- Cognitive control: reflexive & reflective
- Inhibition & Impulsivity
- Intelligence
- Personality

What can cog neuro add uniquely?

(mind-reading is not possible)

- a) Measure multiple processes simultaneously
 - dual-process models
 - strategy differences
- b) Localization informs function
- c) Independent index of a psychological process
- d) Converging evidence at multiple levels

Recap: Where do ideas come from?
the brain in a context

Islands of potential

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