

Affective Neuroscience:

Understanding emotion by looking to the brain



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What tools do I use?



Why the brain?



- **Damage provides critical tests of theory**
 - Stoics (3rd Century B.C.E.)
 - ✦ Emotion gets in the way of pure reason
 - ✦ If we can rid ourselves of emotion, than we would make the right decisions
 - David Hume (1739):
 - ✦ “Reason is, and ought only to be the slave of the passions, and can never pretend to any other office than to serve and obey them.”
 - ✦ We are moral *because* of emotions
 - Test case
 - ✦ Orbitofrontal damage

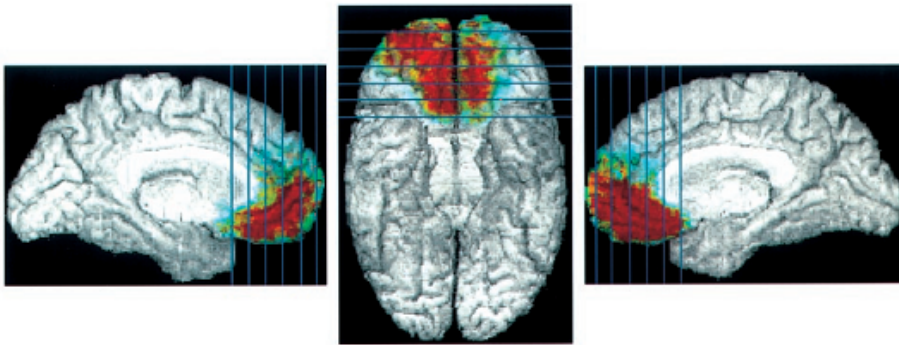
PHINEAS GAGE

A Gruesome but True Story About Brain Science



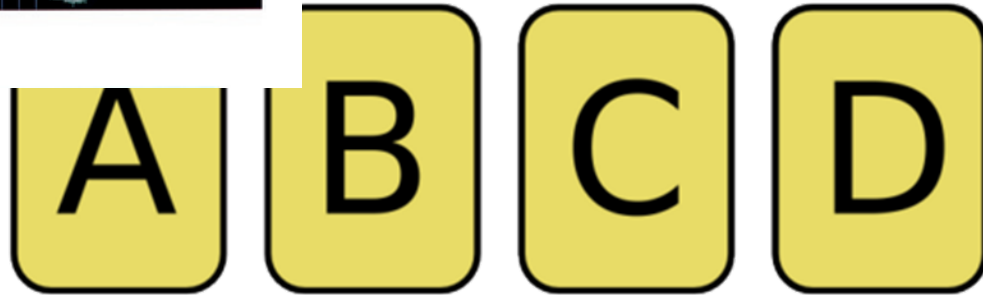
by JOHN FLEISCHMAN

<http://www.youtube.com/watch?v=X4fGlny5cPg>

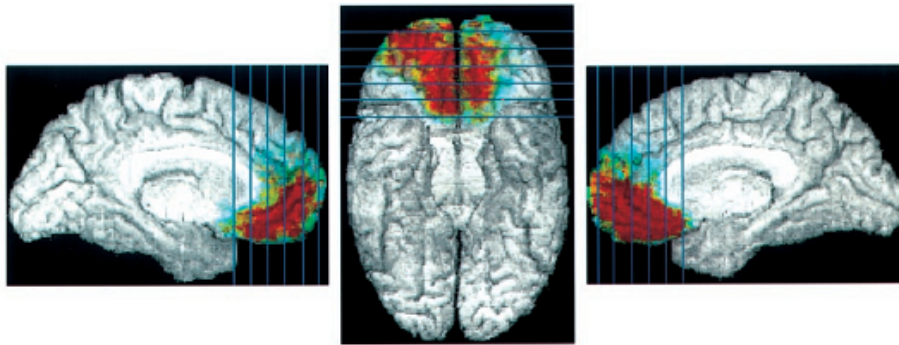


Bad Decks

Good Decks

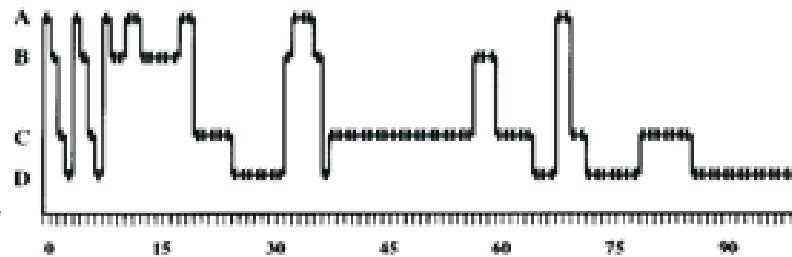
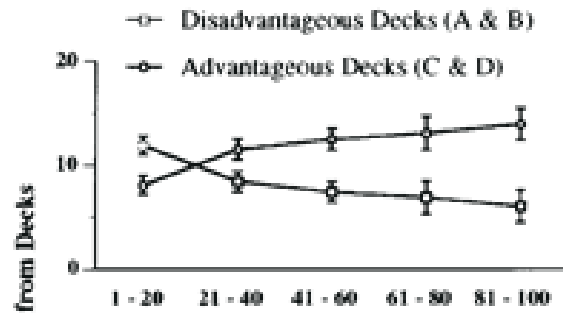


	A	B	C	D
Gain/Deck:	\$100	\$100	\$50	\$50
Loss/10 cards:	\$1250	\$1250	\$250	\$250
Net/10 cards:	-\$250	-\$250	\$250	\$250
Rewards/10 cards:	5	1	5	1



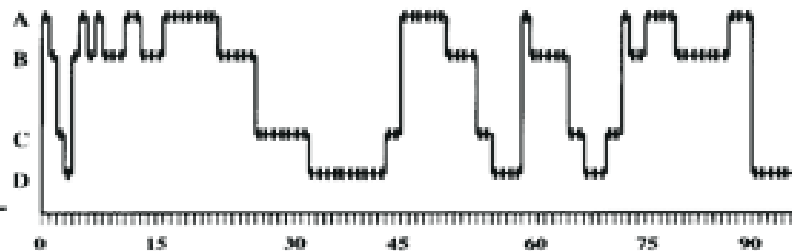
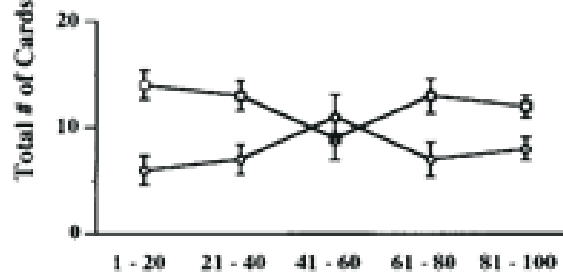
NORMAL CONTROL

A TYPICAL CONTROL



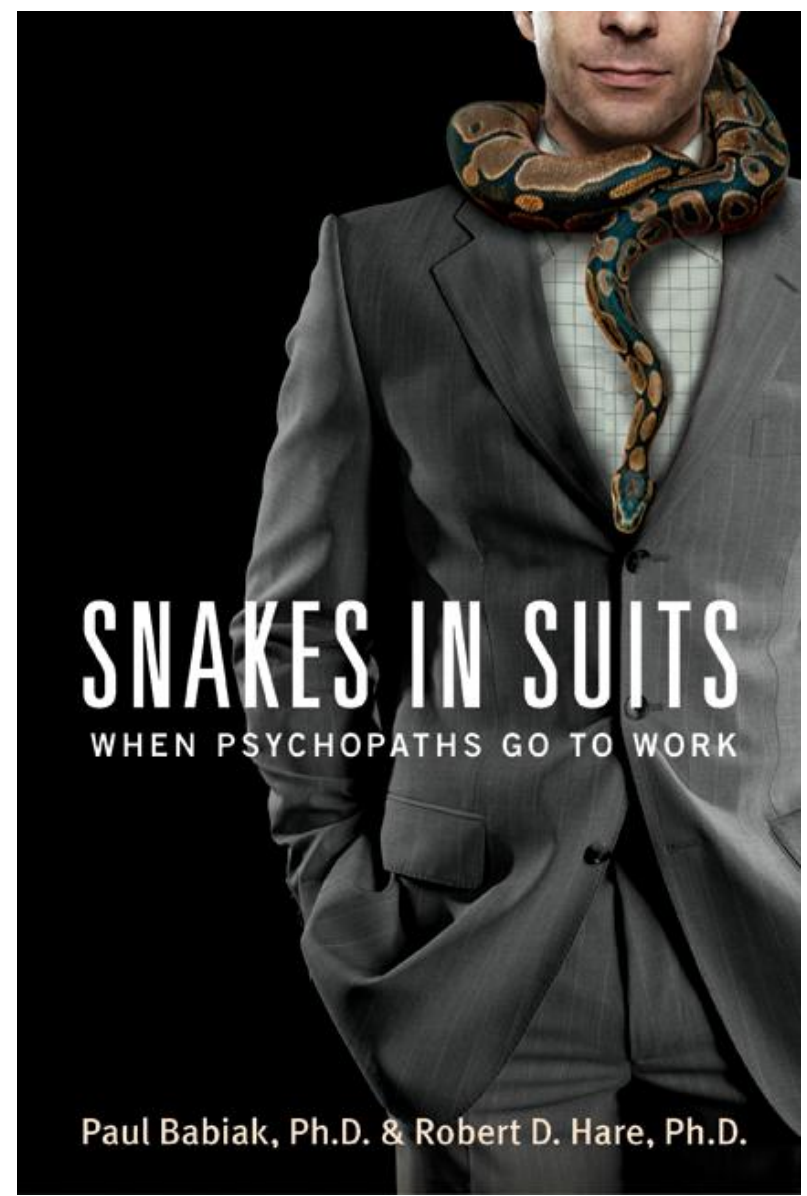
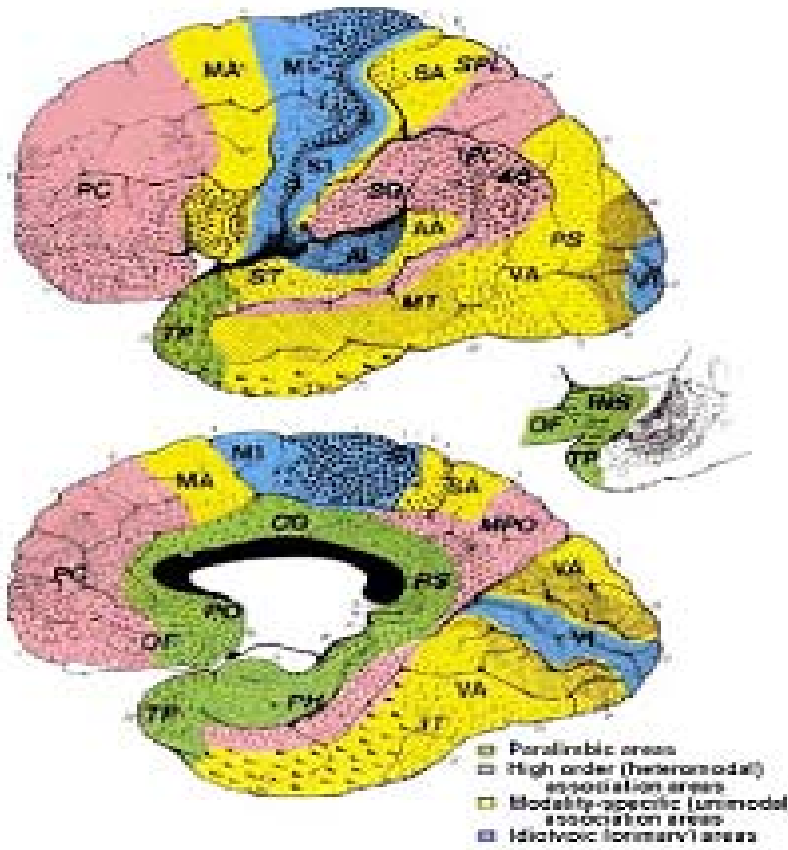
VM PATIENTS

A TYPICAL VM PATIENT



Order of Card Selection from the 1st to the 100th Trial

Trial Number



SNAKES IN SUITS

WHEN PSYCHOPATHS GO TO WORK

Paul Babiak, Ph.D. & Robert D. Hare, Ph.D.

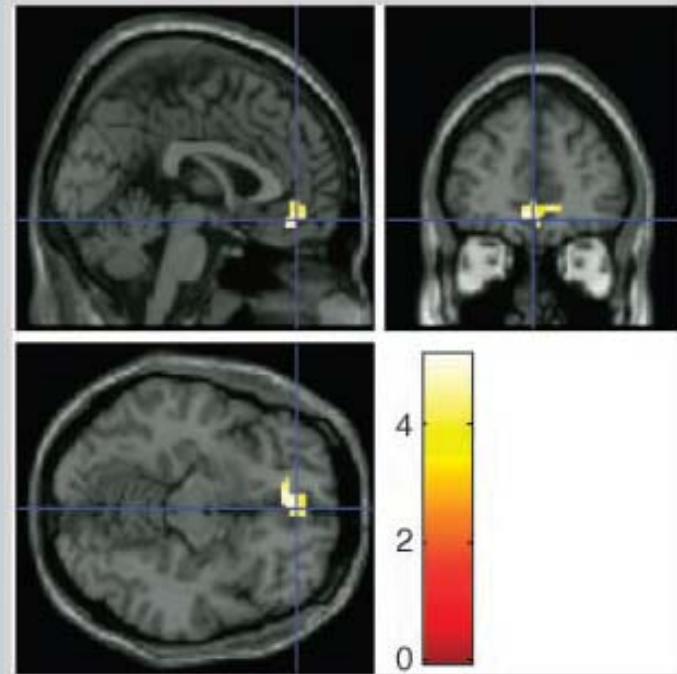
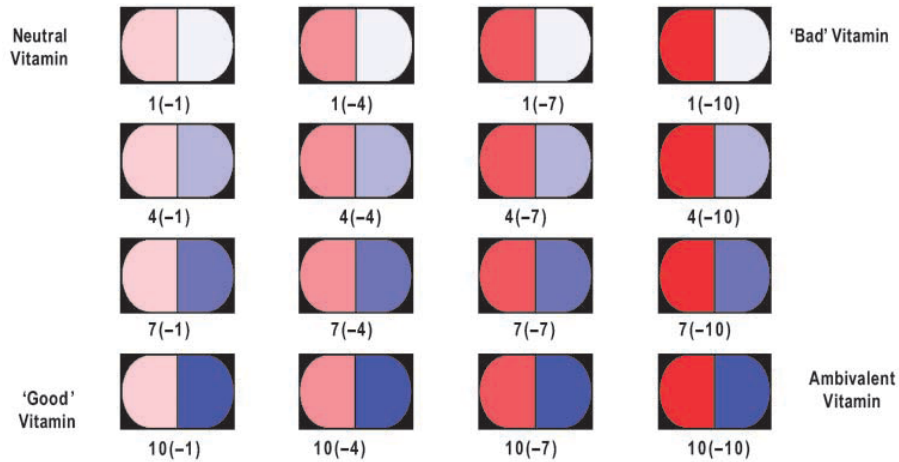
Human Neuroscience without Damage



Decision Making Tasks



A Presented Stimuli



Hypotheses of Hate



- **Extreme Dislike**
 - Bottom-up emotional response
 - Greater responses in amygdala/limbic system
- **Cognitive Responses**
 - Mental frame that shape emotions
 - ✦ Moral Emotions
 - Up-regulation via PFC of amygdala responses
 - Down-regulation of positive
 - ✦ Unable to feel positive
 - ✦ Feelings of emotional certainty

How do you develop a research question?



- Read
- Read
- Read outside of the primary field
 - The same big questions are being asked over and over
 - ✦ Philosophy: Value
 - ✦ Social Psychology: Attitude
 - ✦ Cognitive Science: Affect
 - ✦ Neuroscience: Reinforcement
 - ✦ Literature: Hopes, dreams, fears

How do you develop a research question?



- **Trust your gut**
 - If you are going to do research, you want it to be a passion
 - Sleepless nights
 - “Find what bugs you.” – Jordan Peterson
- **Look for anomalies (strange things)**
 - What doesn't fit what you expected to happen?
 - ✦ Science is supposed to move forward by rejecting old ideas
 - Avoid square pegs in round holes
- **Think bigger**
 - Theory of prejudice explains specific behavior
 - Theory of preferences explains prejudice, and other behaviors
- **... but don't lose your specific interest (e.g., prejudice)**

How do you develop a research question?



- **Is there a larger framework that can explain divergent ideas?**
 - What causes people to be attracted to one another?
 - ✦ Birds of a feather flock together
 - ✦ Opposites attract
 - Self evaluation maintenance
 - ✦ Want complementarity on core things
 - ✦ Want similarity on peripheral things
- **Think about intro text book**
 - 1/3 Person A says X
 - 1/3 Person B says Y
 - 1/3 Brilliant Person C says both
- **Look for your “both”**

Questions?

