

Decision Science: How Do People Make Choices?

Julie S. Downs
Dept. of Social & Decision Sciences
Carnegie Mellon University

Decision Inputs

- “Dual process” models
 - Reason vs. intuition
- Account for psychological phenomena
 - Explain systematic biases
 - Describe normal decision making

Intuition

- We make intuitive judgments:
 - quickly
 - automatically (can't turn it off)
 - effortlessly
 - emotionally
 - with associative processing
 - with parallel processing

Reason

- We make reasoned judgments:
 - slowly
 - controlled (only when we try to)
 - effortfully
 - without emotion
 - with deductive processing
 - with serial processing (no multi-tasking)

Evolutionary Metaphor

- Cortical matter overlaid on primitive neural systems
- We behave *as if* both are in action



Dual Processes

- Intuitive (emotional) reactions first
 - Can't suppress them
 - Evolutionarily adaptive
- Reasoning only when called upon
 - Requires immediate resources
 - May require education or training

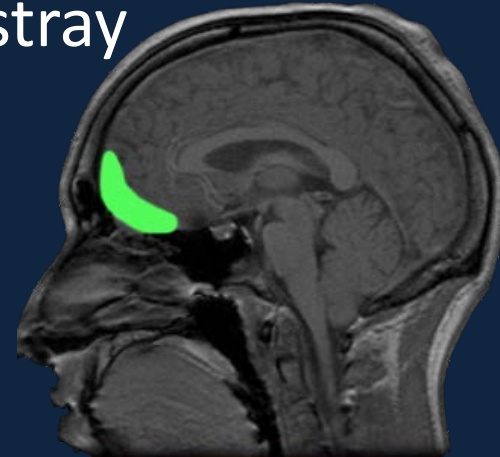
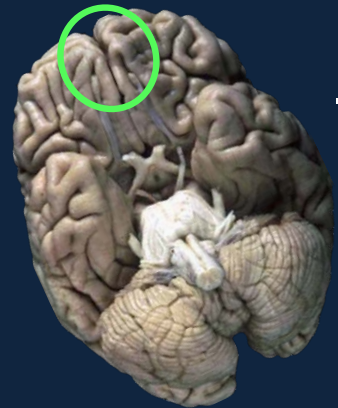
Education and Training

- Well learned skills can become intuitive
 - Reading
 - Driving
 - Scientific reasoning
- Hard to appreciate other perspectives
 - That others don't know what you know
 - “Curse of knowledge”



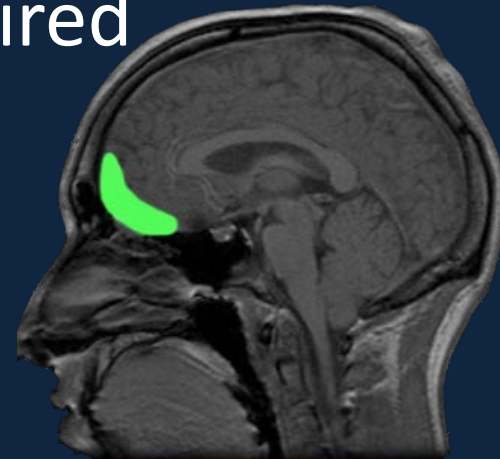
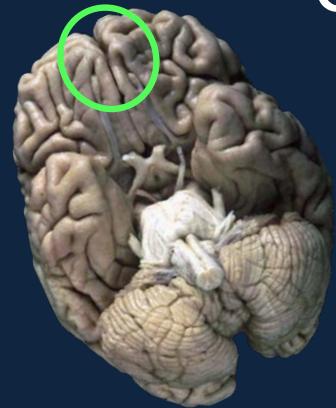
Which Works Better?

- Reasoned system can identify bias
 - But requires limited resource of attention
- Emotion can guide decisions
 - Carryover emotions can lead us astray
 - But we rely on related emotions



Emotion In Decisions

- Patients with VMPFC damage
 - Don't experience emotions
 - Make Decisions Differently
- Cognition intact; decisions impaired
 - Paralyzed by simple choices
 - Not guided by apprehension



Making Choices

- How do people approach choices?
 - In light of dual systems
 - Must consider the relevance of emotions
 - Social norms, trade-offs, origin of preferences
 - Translating preferences into choice

Constructed Preferences

- People have some stable preferences
 - Evolutionary drives
 - Past or vicarious experience
- Use cues to construct others on the fly
 - Norms, salience, mere exposure
 - Especially for unfamiliar ones
- Expectation shapes experience

Multiple Options

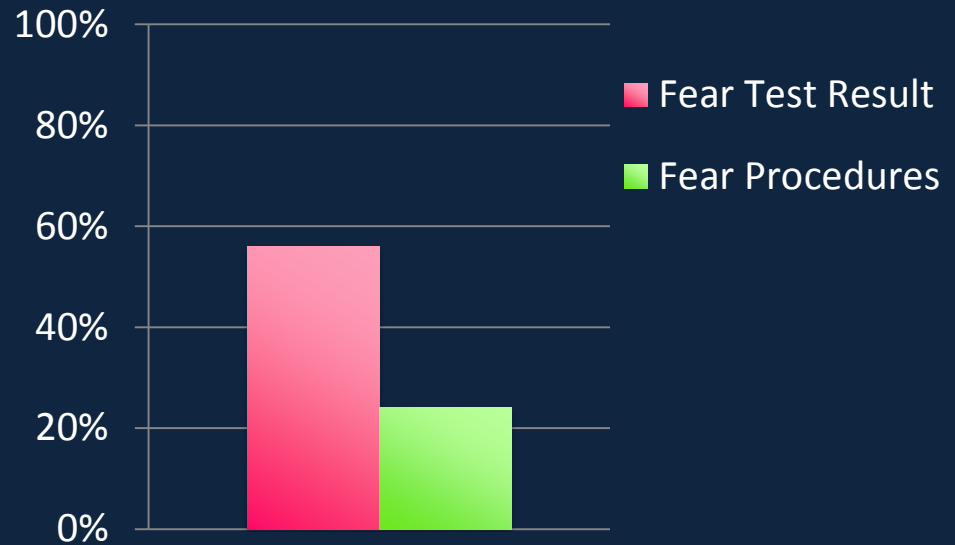
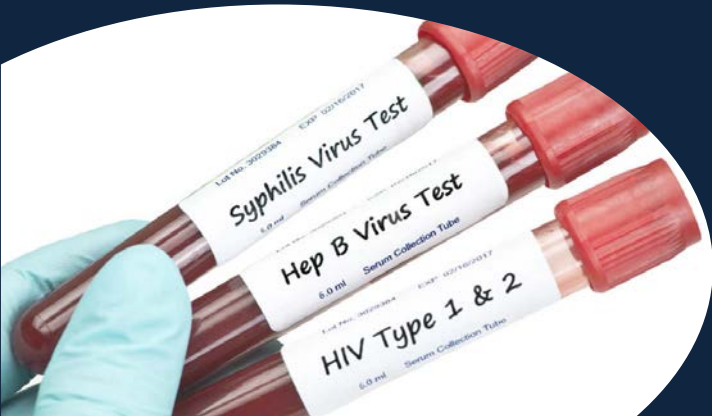
- Possible problems
 - Too little choice: can't get the best option
 - Too much choice: with dozens of options, it's hard to distinguish them
 - Complicated presentation: makes it hard to prioritize what's truly important

Deferring a Choice

- Single option
 - Choice becomes one of deferral or refusal
- Two reasons people defer a choice
 - No option is good enough
 - Uncertainty about which is the best
- Trade-offs
 - Deferring doesn't feel like a choice (but is)

Social Norms

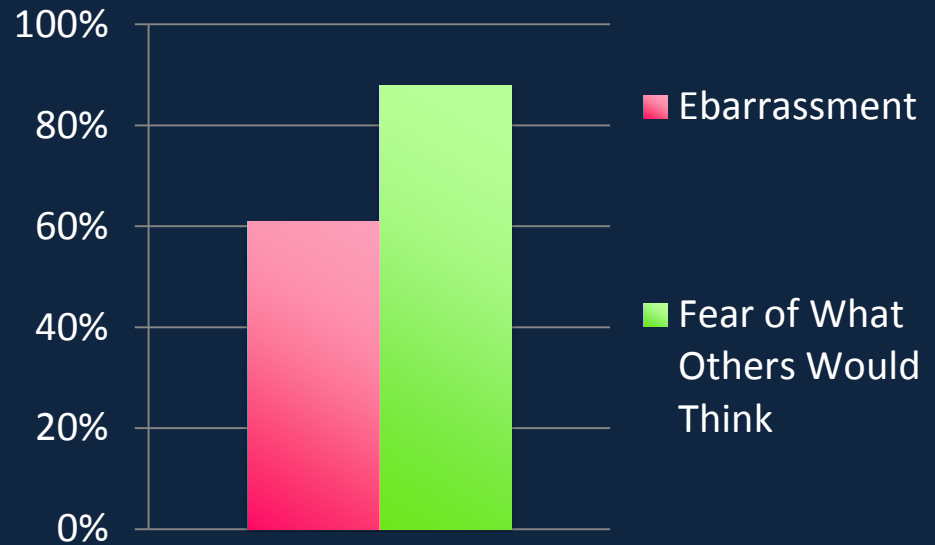
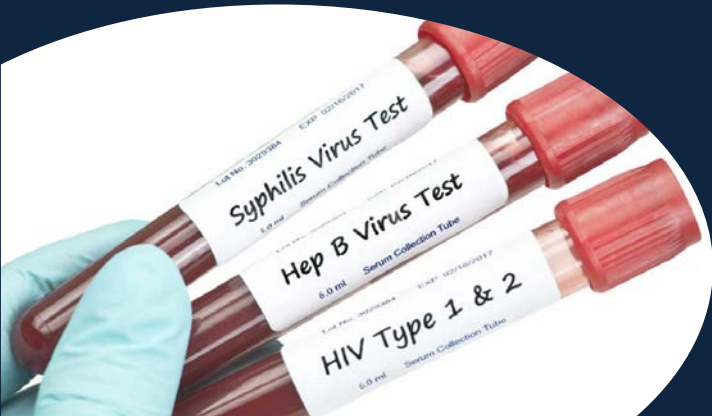
- People avoid or delay STI testing
 - Fear of health consequences
 - Test itself



Barth KR, Cook RL, Downs JS, Switzer G, Fischhoff B (2002).
Journal of American College Health

Social Norms

- But social meaning is more dissuading
 - What would it “mean” to take the test



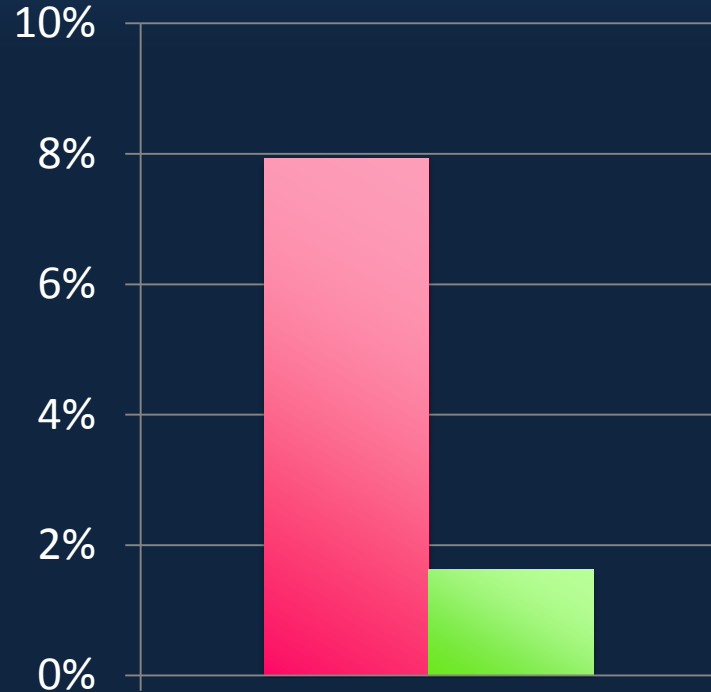
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Social Norms



Percent of Marked Pieces

Stolen



- Many people remove wood...
- Please don't remove wood...

Generating Options

- Important to assess population needs and values
 - Especially if divergent from expert opinion
- Consider norms and beliefs
 - Some beliefs may respond to education
 - Others may be better managed by providing options more suited to them

HIV Prevention Choices

- Relevant social norms
 - HIV may be highly stigmatized
 - Medical vs. social behavior (pills, timing)
- Relevant beliefs
 - Contamination beliefs are prevalent for infection and disease (e.g., cancer)
 - Mechanism of action (on site vs. systemic)

Back to Dual Processes

- Emotion and intuition
 - Will happen automatically
 - Uphill climb to change
 - Better to offer palatable options
- Reasoning
 - Target important misconceptions to fix
 - Offer options that fit with existing beliefs