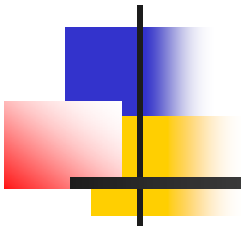


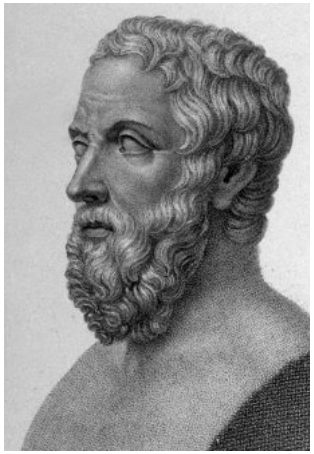
Decision Making and Problem Solving (Part 3)

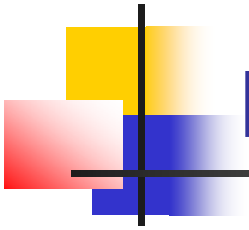
In *The Histories*, written in 450 B.C., Herodotus explains:

"If an important decision is to be made [the Persians] discuss the question when they are drunk and the following day the master of the house submits their decision for reconsideration when they are sober.

If they still approve it, it is adopted; if not, it is abandoned.

Conversely, any decision they make when they are sober is reconsidered afterward when they are drunk."





Decision Making

- **Anchoring (Confirmation Bias)**

  - Giving disproportional weight to certain (preferred) types of information over others

- **False hope**

  - Hoping for something to happen over which there is little actual control

  - "Learned helplessness"?

Decision Making

- **"Sunk cost"**

  - Repeating decisions because of amount of time, cognitive effort, energy already invested

  Note: sunk costs can't be altered by any decision made…they are differential costs and should be ignored when making future decisions

Decision Making

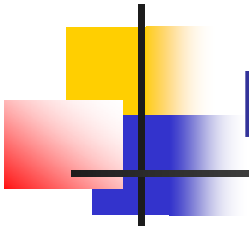
- **Misrepresentation**
  - Deliberate focus on extreme views or misrepresentation of an opponent to make it easier to attack
  - Use of arguments that "seem" scientific/logical
  - Quoting an opponent out of context, or oversimplifying the argument, then attacking that simplified version as if it's truth

WE HAVE A DIVINE FALLACY PENALTY
JUST BECAUSE YOU WANT IT
TO BE TRUE DOESN'T MEAN IT IS

ASSERTION FALLACY
IN PLAY
JUST BECAUSE NOBODY DISAGREES
WITH YOU DOESN'T MEAN YOU ARE CORRECT

ILLEGAL USE
OF ANECDOTE
ON THE OFFENSE
PERSONAL
EXPERIENCE
PRESENTED
AS PROOF

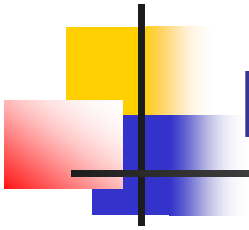
WE HAVE A BANDWAGON ARGUMENT
AGREEING WITH A BUNCH OF PEOPLE
WHO ARE WRONG MAKES YOU JUST AS WRONG



Decision Making

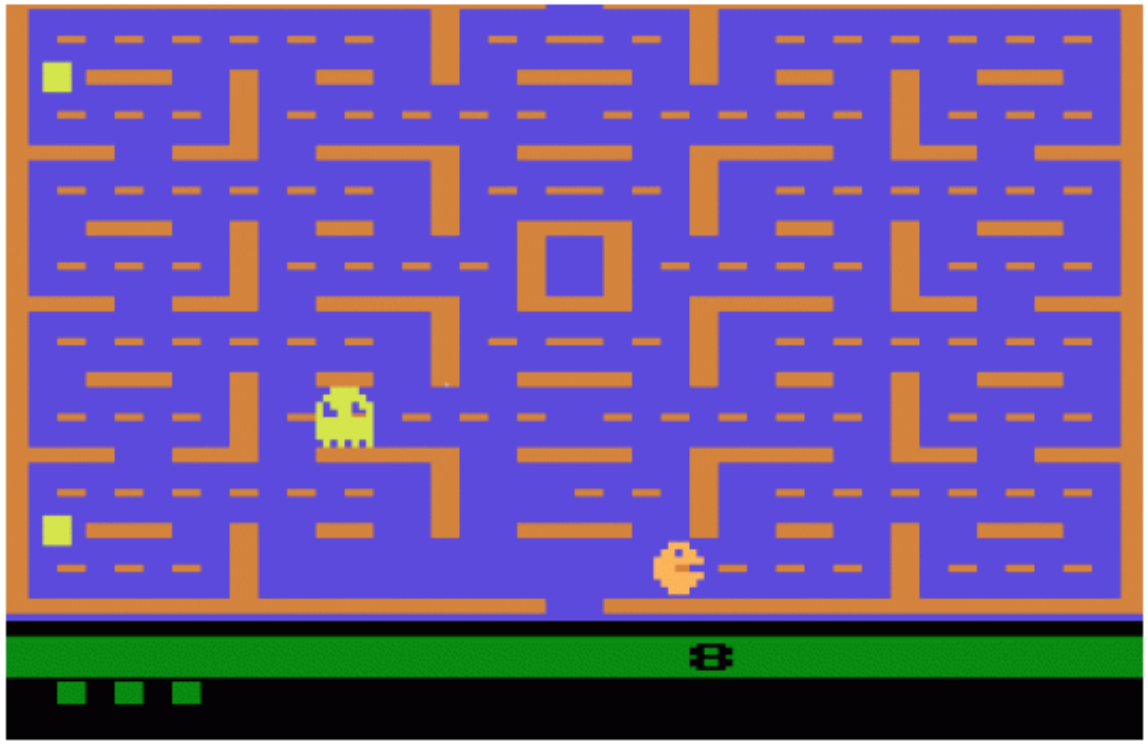
- **False decentralization**
  - Authority figure delegates accountability to help make decisions...but does not delegate authority

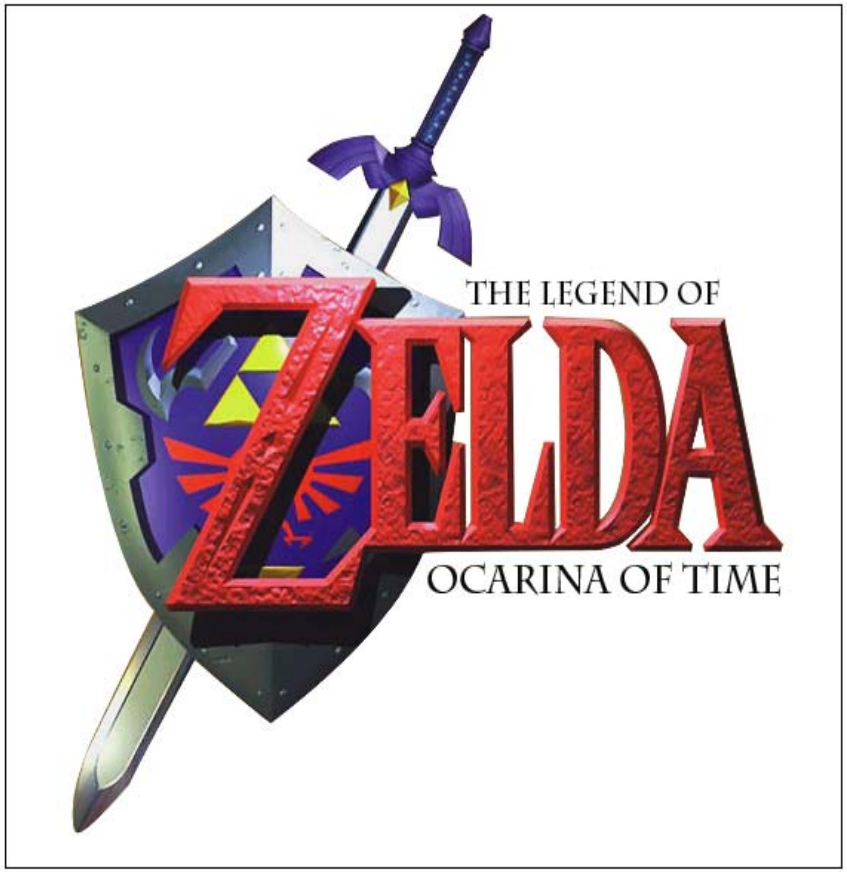
- **Rationalization**
  - "Stack the cards" to make one option clearly 'right'
  - Distorts appearance of risk



Decision Making

- **Schemas**
  - Cognitive frameworks used to identify and process information (e.g., mental index file)
  - Automatically formed on basis of experience to guide understanding of the world
  - Assimilation and accommodation (Piaget)

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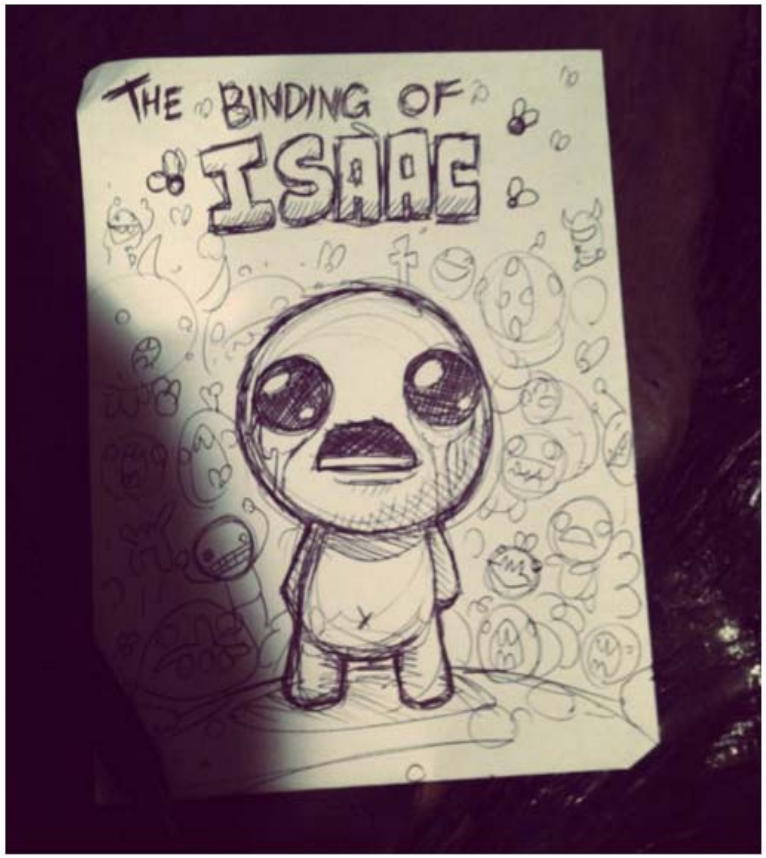
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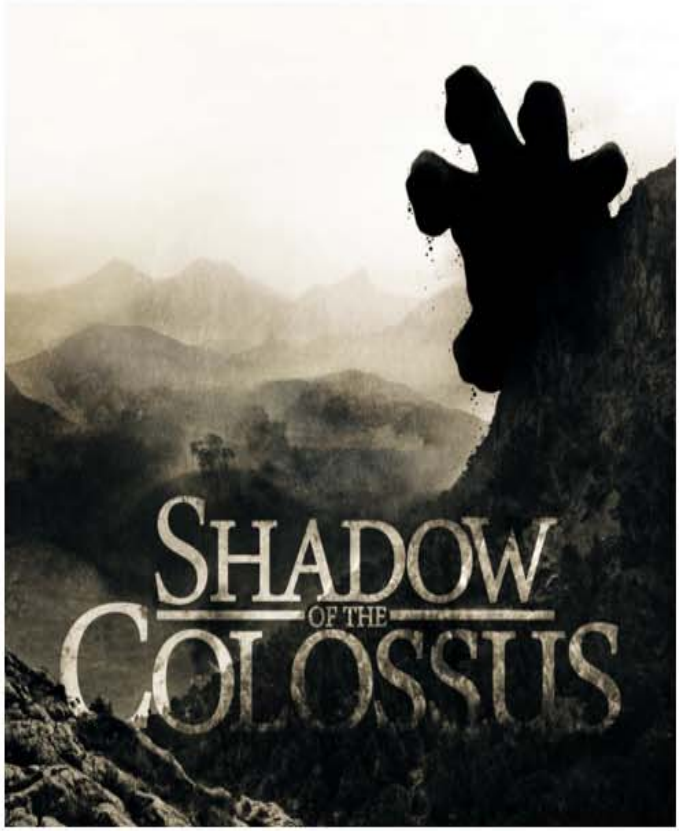
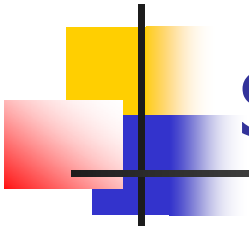

SHADOW
OF THE
COLOSSUS

DARK SOULS III

MEGA MAN X
Nintendo
CAPCOM
SUPER NINTENDO

Decision Making

- **Heuristics**
  - Mental shortcuts or “rules of thumb” that make decision making more efficient
  - Strong (unconscious) bias component
    - Systematically influences of judgments and decisions
    - A fixed factor, not random



Schemas vs. Heuristics

- **Schemas**

  - Mental check-list or index file for forming knowledge base and storing information (“what”)

- **Heuristics**

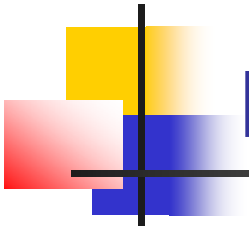
  - Mental short-cut used for solving problems (“how”)

Schemas vs. Heuristics

Use of schemas and heuristics

- Help to make decisions quickly with low cognitive effort
- Can impair ability to make rational judgments and evaluations

Automatic Processing
• fast, intuitive
• effortless
• emotion driven
• involves the amygdala and limbic system
Controlled Processing
• logical, careful
• takes effort
• takes over when an experience doesn't fit a developed schema
• involves parts of the prefrontal cortex



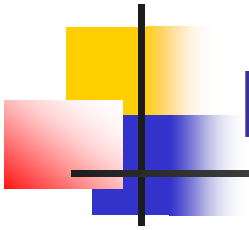
Decision Making

Example 1

Are there more words in the English language…

(a) That begin with the letter “r”?

(b) For which “r” is the 3rd letter?



Decision Making

- **Availability Heuristic**
  - What is easily recalled is thought to be more likely to occur
  - Inaccurate assessment of probability for a particular event happening
  - Often based on prior experience, which may not be objective

Decision Making

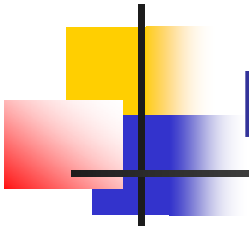
Example 2

Who went to Harvard?

Sonia Dara (model)

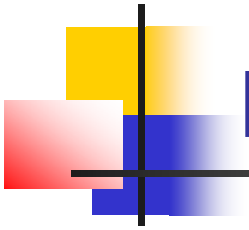
or

Ian Clarke (entrepreneur)



Decision Making

- **Representative Heuristic**
  - Belief in likelihood that a person or object belongs to a particular group, class, or category
  - Can be based on “stereotypical” perceptions



Decision Making

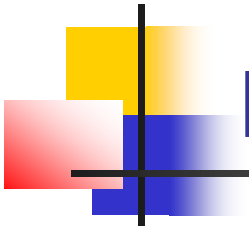
Example 3

Which city has the larger population:

Milan, Italy

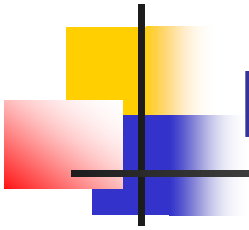
or

Modena, Italy?



Decision Making

- **Recognition Heuristic**
  - If one of two (or more) objects is recognized and the other is not, we infer the known object has a higher "value"
  - Whichever stimuli has the higher recognizability or familiarity is perceived as the correct choice



Decision Making

- **Anchoring Heuristic**
  - Disproportionate weight given to first information available
  - Once preliminary estimate made (i.e., anchored) future data is based around it