User Interaction: The Human

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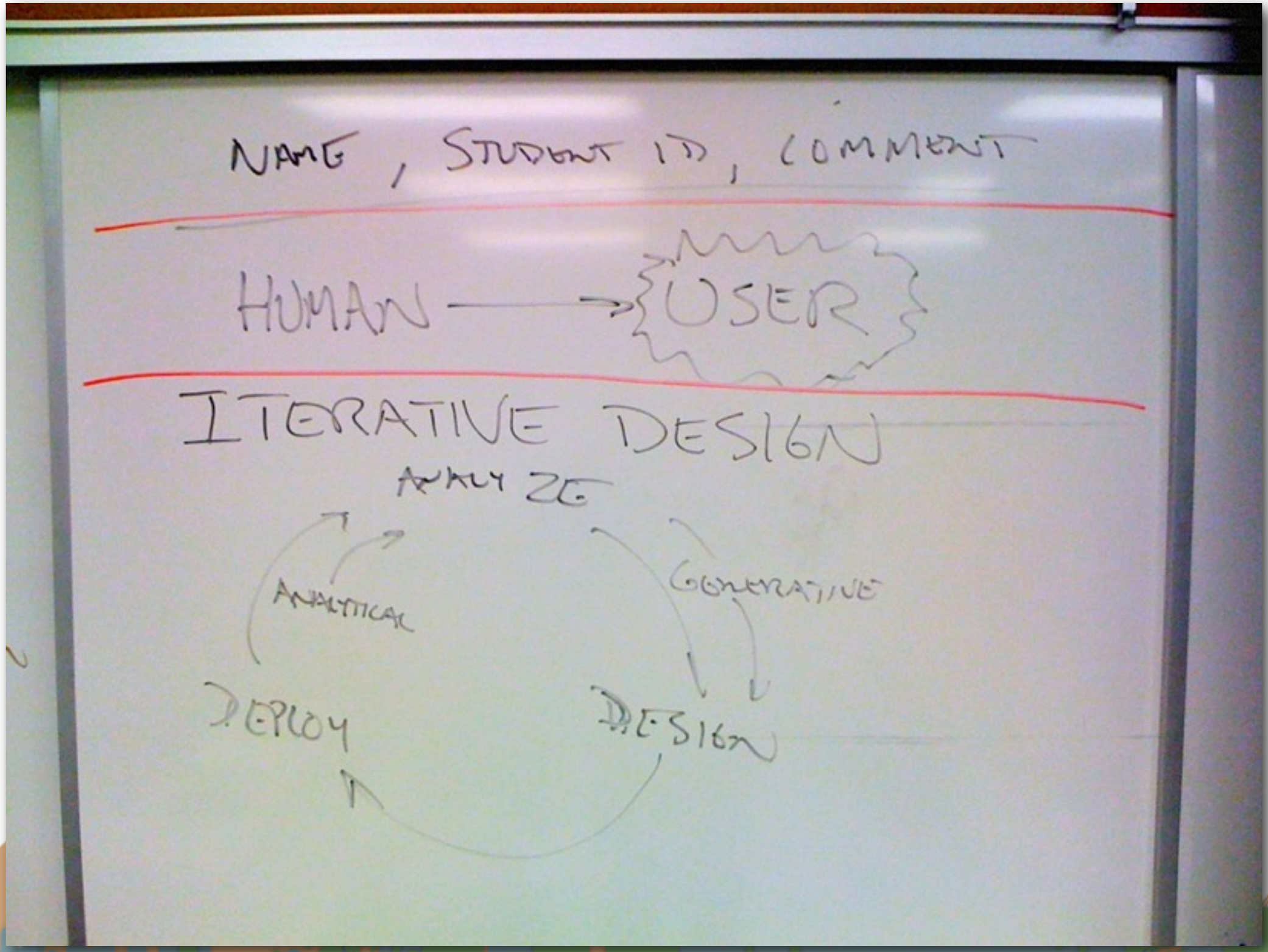
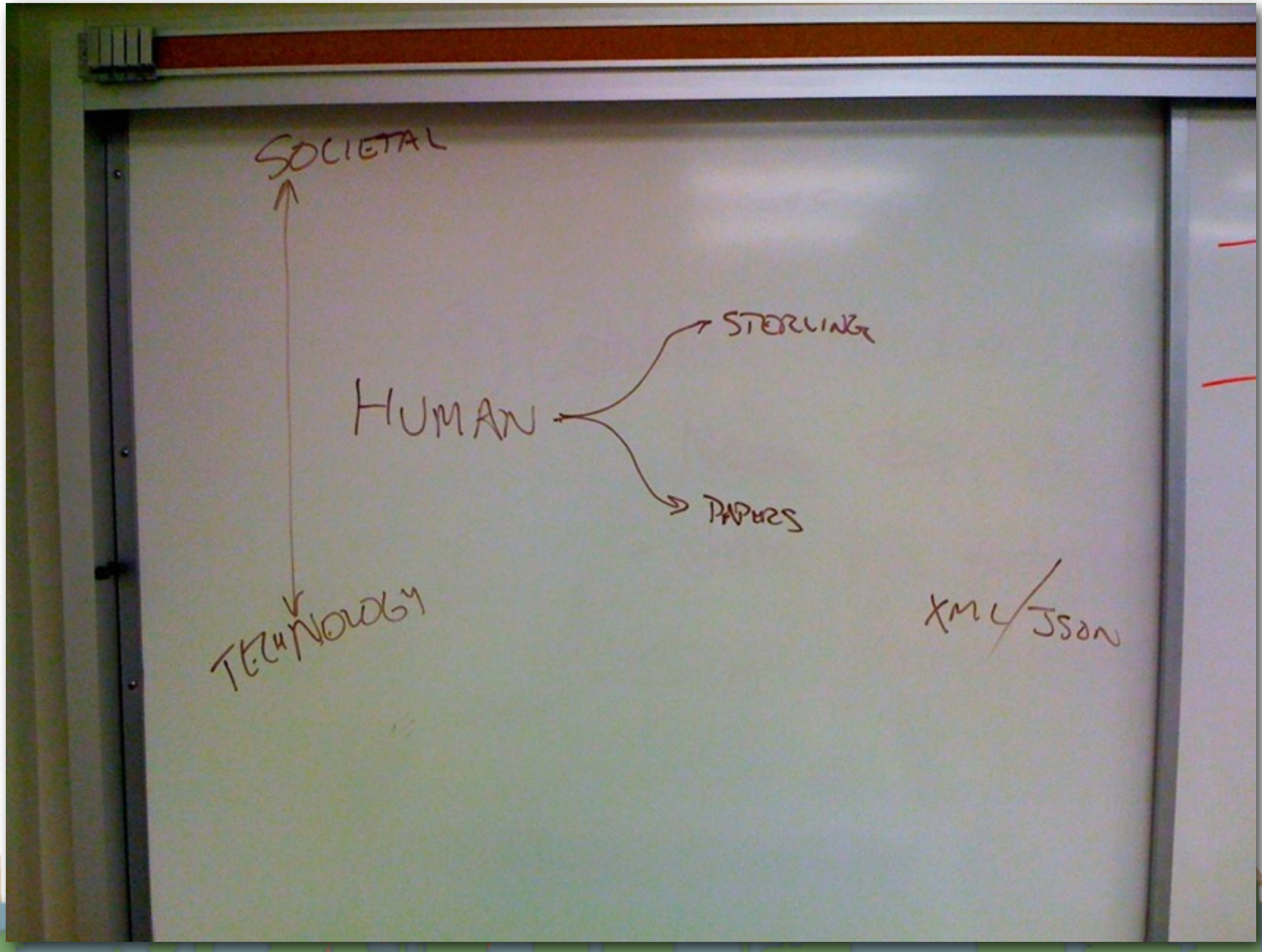
Individuals vary in their abilities

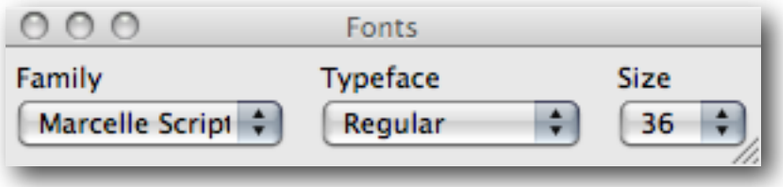
- long term
  - sex, physical and intellectual abilities
- short term
  - effect of stress or fatigue
- changing
  - age

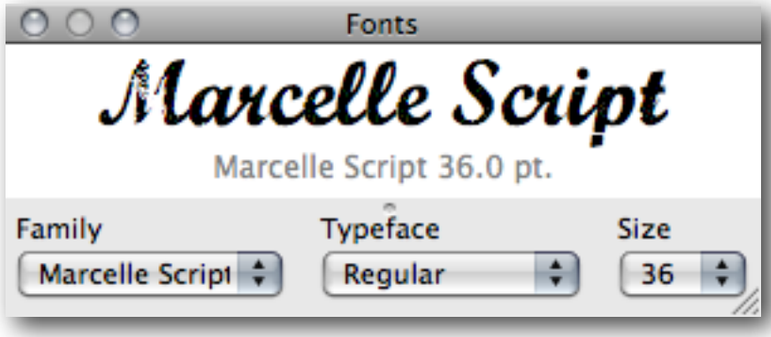
- Ask yourself:
  will design decision exclude section of user population?


NAME, STUDENT ID, COMMENT
HUMAN
USER
ITERATIVE DESIGN
ANALYZE
ANALYTICAL
GENERATIVE
DEPLOY
DESIGN

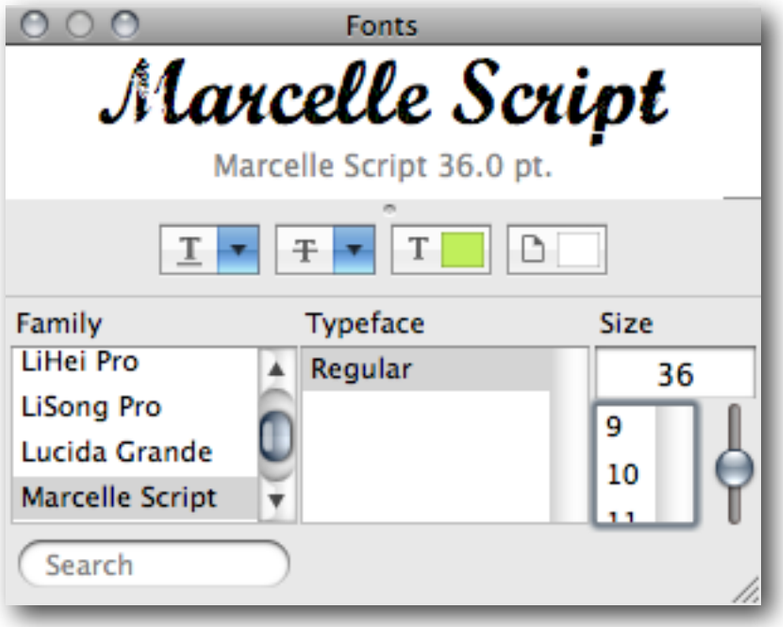

SOCIETAL
HUMAN
STERLING
PAPERS
TECHNOLOGY
XML/JSON

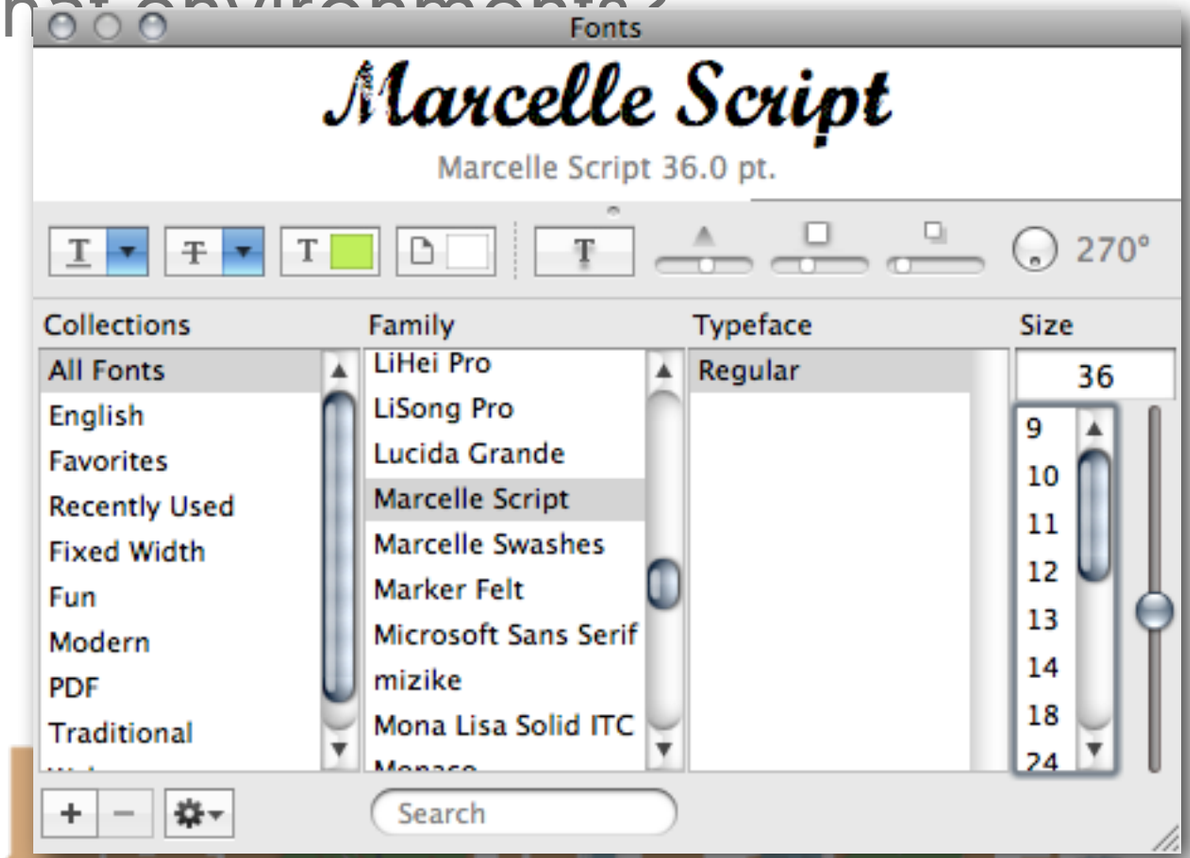
Addressing different skills and environments





- "Plasticity"
  - Adapting to different environments easily.
  - What environments?





Emotion influences human capabilities

Emotion

- Various theories of how emotion works
  - James-Lange: emotion is our interpretation of a physiological response to a stimuli
  - Cannon: emotion is a psychological response to a stimuli
  - Schacter-Singer: emotion is the result of our evaluation of our physiological responses, in the light of the whole situation we are in
- Emotion clearly involves both cognitive and physical responses to stimuli

Emotion

- The biological response to physical stimuli is called affect
- Affect influences how we respond to situations
  - positive → creative problem solving
  - negative → narrow thinking

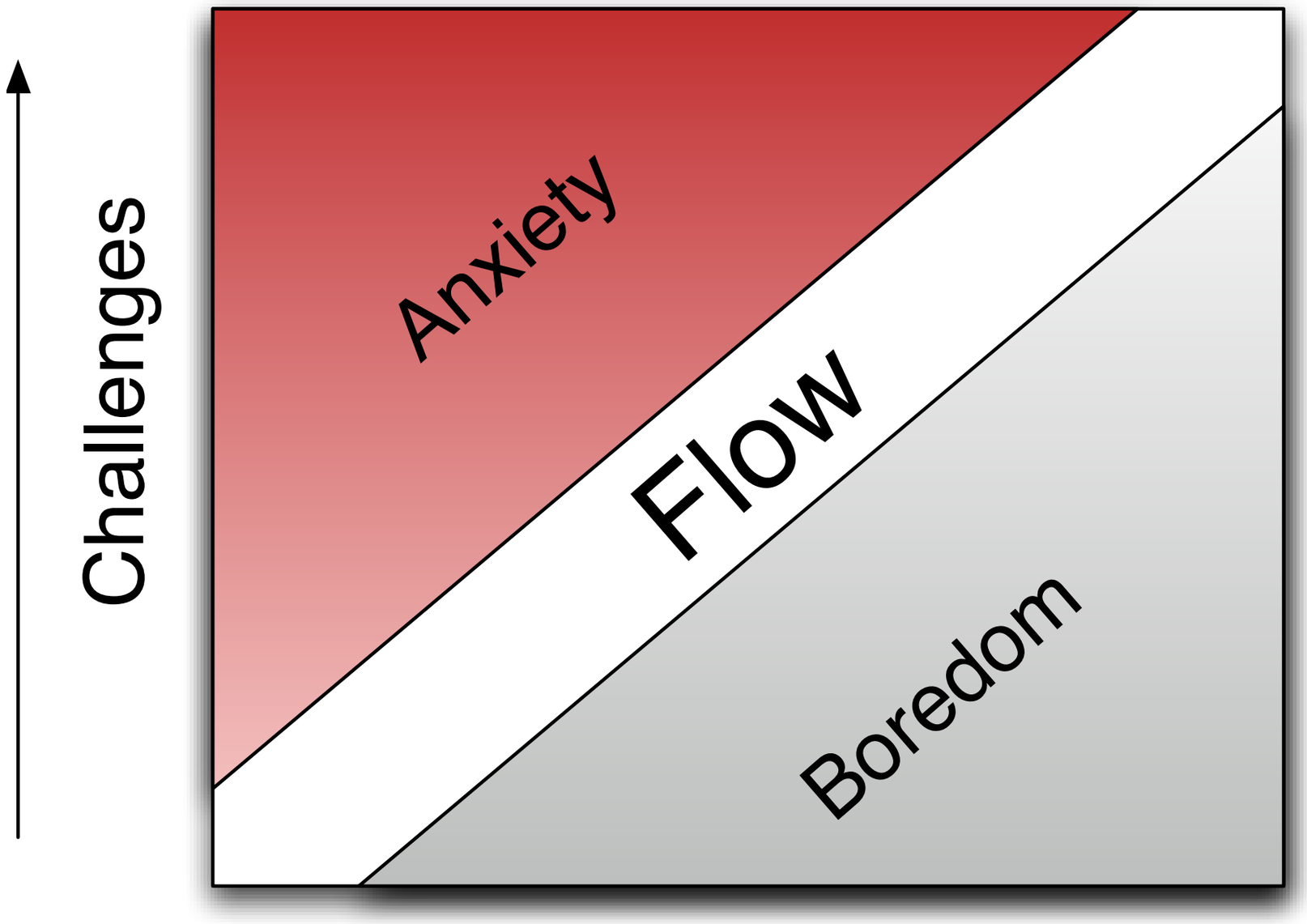
"Negative affect can make it harder to do even easy tasks; positive affect can make it easier to do difficult tasks."

D.A. Norman, 2002

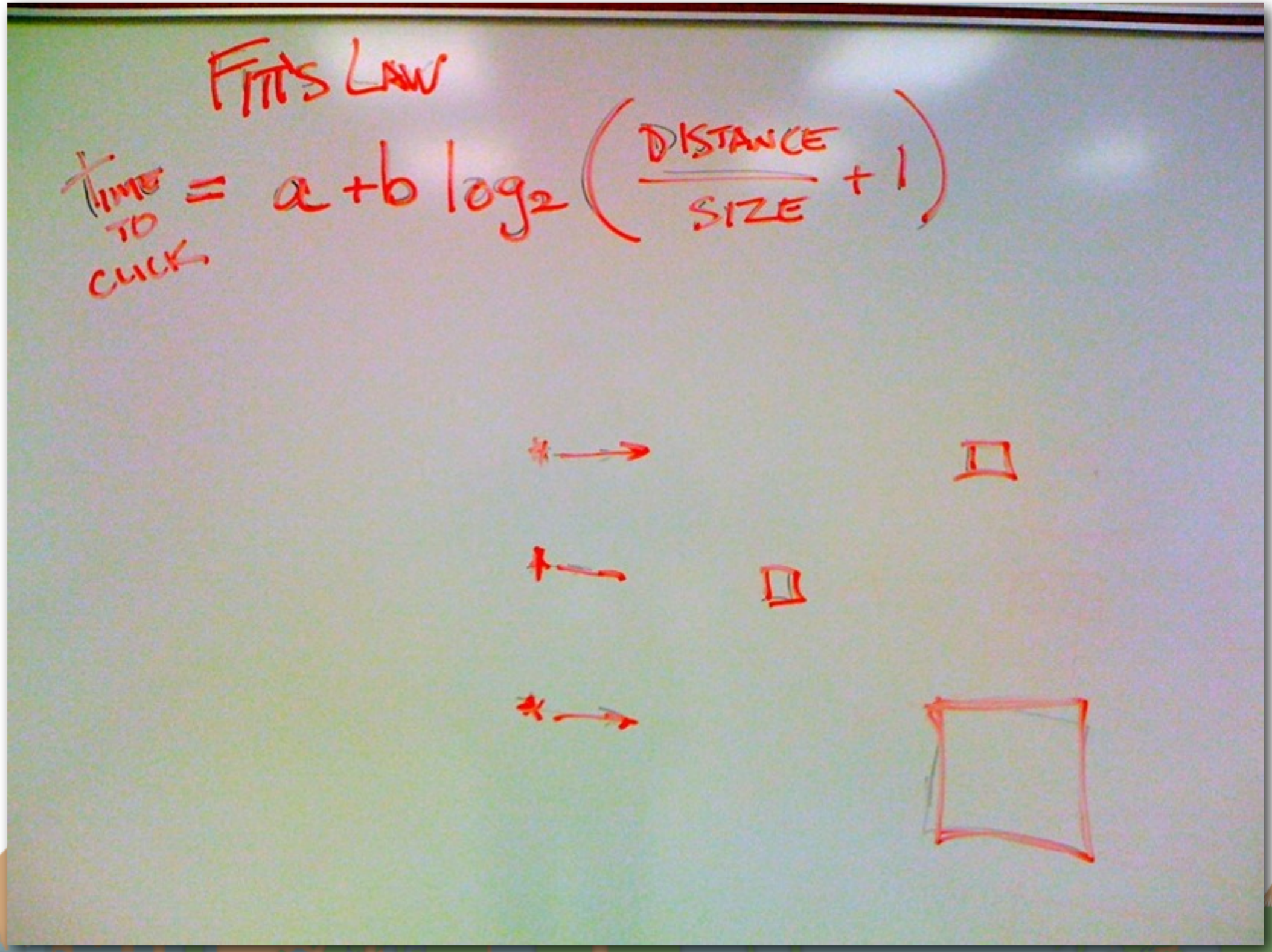
- "Aesthetic-Usability Effect" is a phenomenon
- aesthetic designs
  - are perceived as more usable
  - are more likely to be used
  - make people more tolerant of problems
- unaesthetic designs
  - may be more usable, but don't get used

http://www.apple.com/ipodnano/#ad

The Human: Designing for people



From “Flow: Psychology of Optimal Experience” by Csikszentmihalyi


FITTS LAW
TIME TO CLICK = a + b log2 (DISTANCE / SIZE + 1)

- 3 Models of Humans
  - Model Human Processor
    - Theoretical
  - Fitt's Law
    - Empirical [a+b logs(d/s +1)]
  - Flow
    - Design Concept
- Humans are heavily biased by expectations
  - From our biology to our cognitive response
- Think about design in terms of your actual real users
  - What are their capabilities?
  - What do they expect?

"Most Advanced, Yet Acceptable"

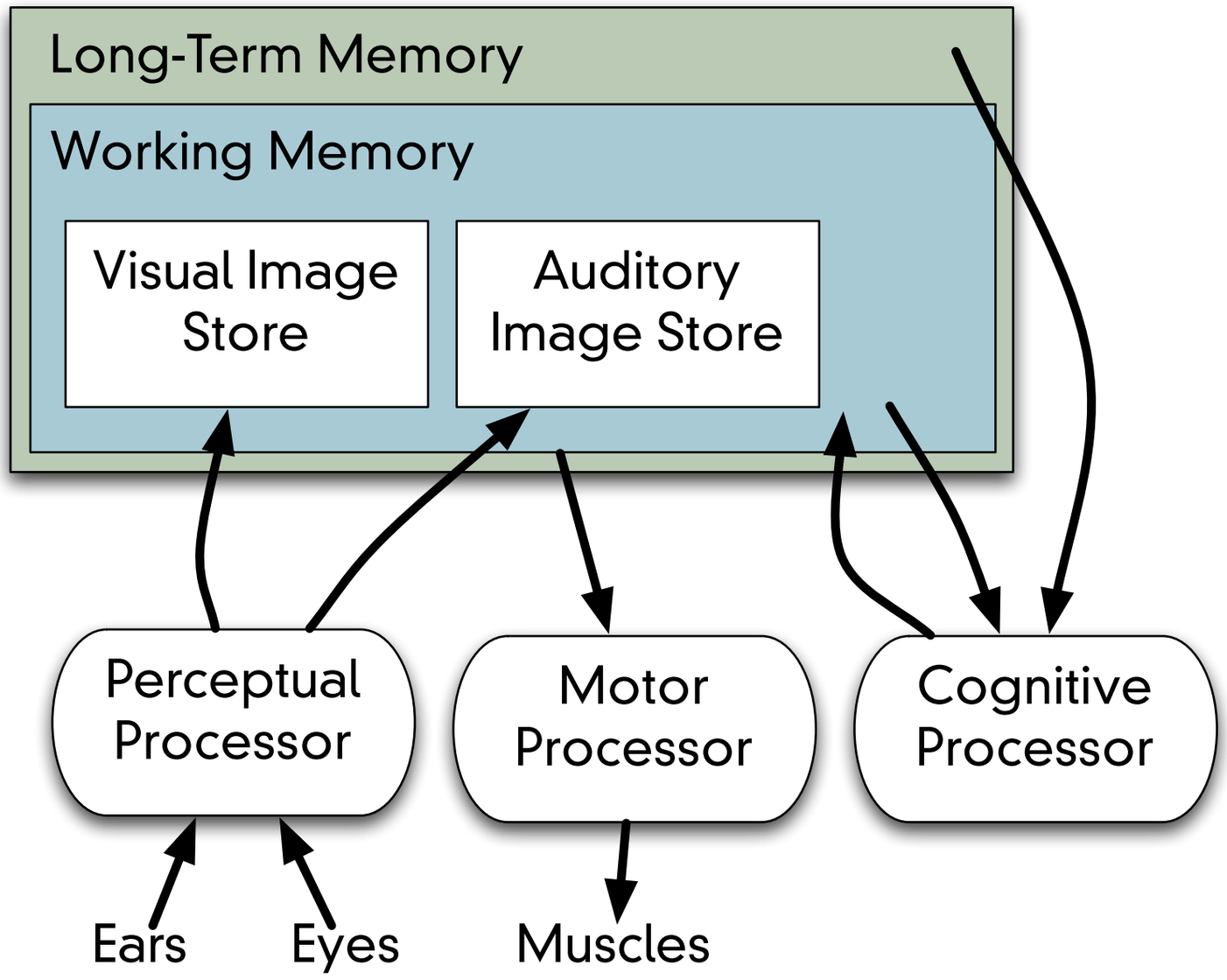
Leverage existing {physical, cognitive, motor, aesthetic} expectations to introduce new and better interactions, to create a better world.

Discussion

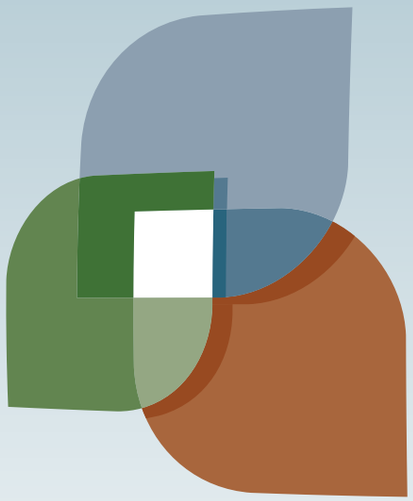
Form groups of 2 or 3

Pick a paper and discuss how the results relate to our biological abilities and/or the model human processor

The Model Human Processor



Card, Moran, Newell (1983)



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