Designing with the Mind in Mind Chapter 12

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People are Often Irrational…

But we do our best :)

3 ways of Irrationality

- Losses mean more to us than gains
- We are biased by how choices are worded
- We are biased by our vivid imaginations and memories

Losses > Gains

- Coin Toss
  - You give me $100 if I win
  - I give you $150 if you win

Losses > Gains

	Gain	Loss
High probability	Gamble: 95% chance to win $10,000 (5% chance to win $0) Alternative: definite gain of $8,000 (less than expected value of gamble) • Fear to lose gain • People are risk-averse • Most accept "safe" definite gain	Gamble: 95% chance to lose $10,000 (5% chance to lose $0) Alternative: definite loss of $8,000 (less than expected loss of gamble) • Hope to avoid loss • People are risk-seeking • Most prefer to gamble
Low probability	Gamble: 5% chance to win $10,000 (95% chance to win $0) Alternative: definite gain of $2,000 (more than expected value of gamble) • Hope for large gain • People are risk-seeking • Most prefer to gamble	Gamble: 5% chance to lose $10,000 (95% chance to lose $0) Alternative: definite loss of $2,000 (more than expected loss of gamble) • Fear of large loss • People are risk-averse • Most accept "safe" definite loss

We are biased by how choices are worded

- Framing effect: How choice are framed affect people's decisions

Vaccine Example

Two vaccines available

- Vaccine A has been used before. 200/600 will be saved
- Vaccine B has not been used before. There is a ⅓ change of saving everyone and ⅔ chance that everyone will die

Vaccine Example

Two vaccines available

- Vaccine A has been used before. 400/600 will die
- Vaccine B has not been used before. There is a ⅓ change of saving everyone and ⅔ chance that everyone will die

We are biased by our vivid imaginations and memories

- People tend to overestimate the probability of improbable events, especially when we can picture or easily recall those events

Who's more likely to have a marital affair?

Politicians vs Doctors

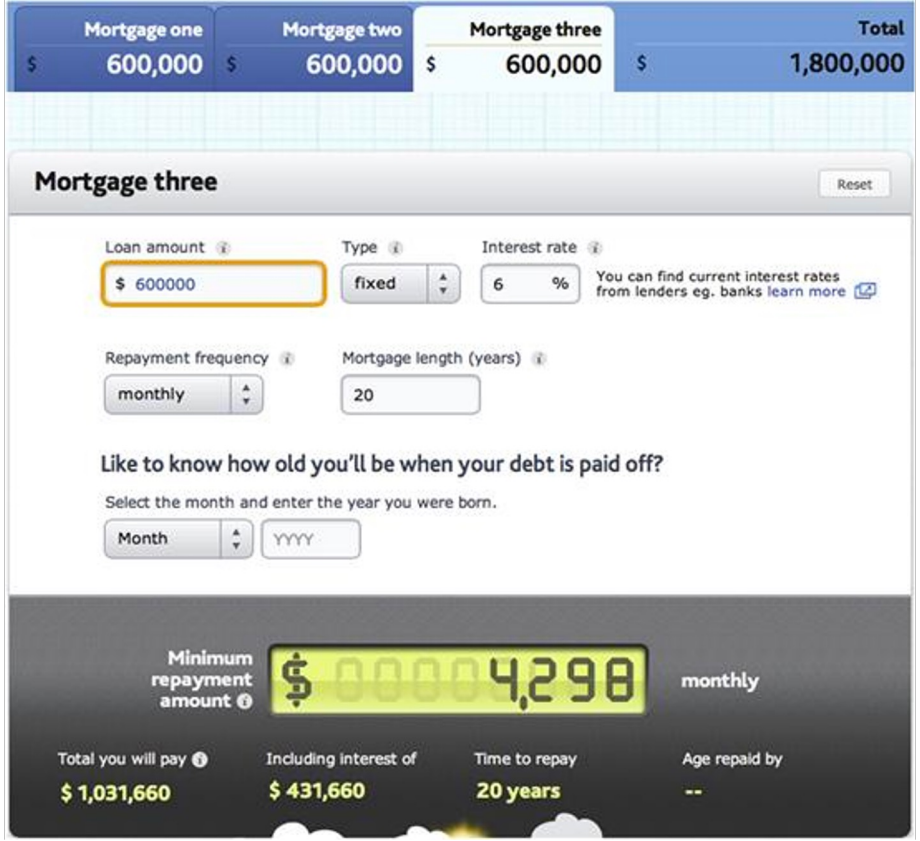
These irrationalities and biases stem from our system one

Exploiting Strengths and Weaknesses of Human Cognition

- Supporting Rational Decision Making
- Data Visualization
- Bypassing System Two

Supporting Rational Decision Making

- Computers should be used to augment our weak and unreliable thought process


Mortgage one
$ 600,000
Mortgage two
$ 600,000
Mortgage three
$ 600,000
Total
$ 1,800,000
Mortgage three
Reset
Loan amount
$ 600000
Type
fixed
Interest rate
6 %
You can find current interest rates from lenders eg. banks learn more
Repayment frequency
monthly
Mortgage length (years)
20
Like to know how old you'll be when your debt is paid off?
Select the month and enter the year you were born.
Month
YYYY
Minimum repayment amount
$ 4,298
monthly
Total you will pay
$ 1,031,660
Including interest of
$ 431,660
Time to repay
20 years
Age repaid by
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Decision Support System

Guidelines:

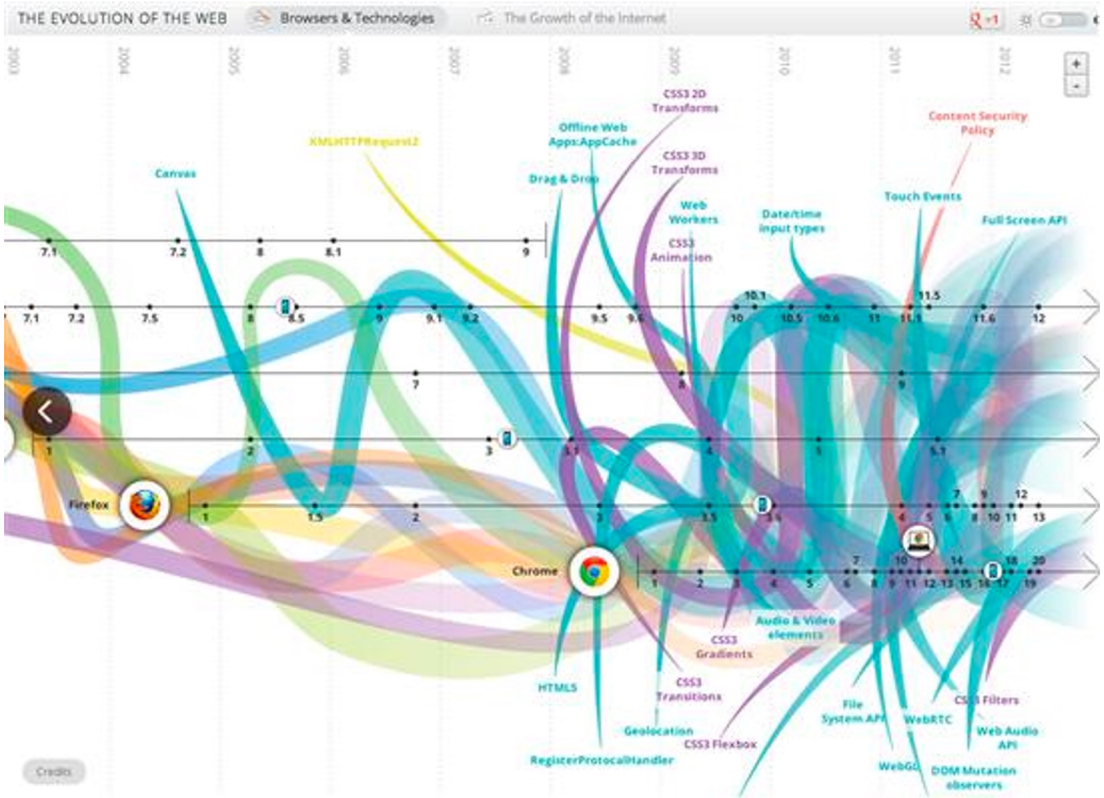
- Provide all options
- Help people find alternatives
- Provide unbiased data
- Don’t make people calculate
- Check assertions and assumptions

Data Visualization

- System one isn’t “bad”, and we can use its strength to support system two

Data Visualization

- Strengths of the human visual system
  - Perception of structure
  - Analysis of complex scenes
  - Edge detection
  - Motion detection
  - Face recognition


THE EVOLUTION OF THE WEB
Browsers & Technologies
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Canvas
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CSS3 3D Transforms
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Date/time input types
Content Security Policy
Touch Events
Full Screen API
Firefox
Chrome
HTML5
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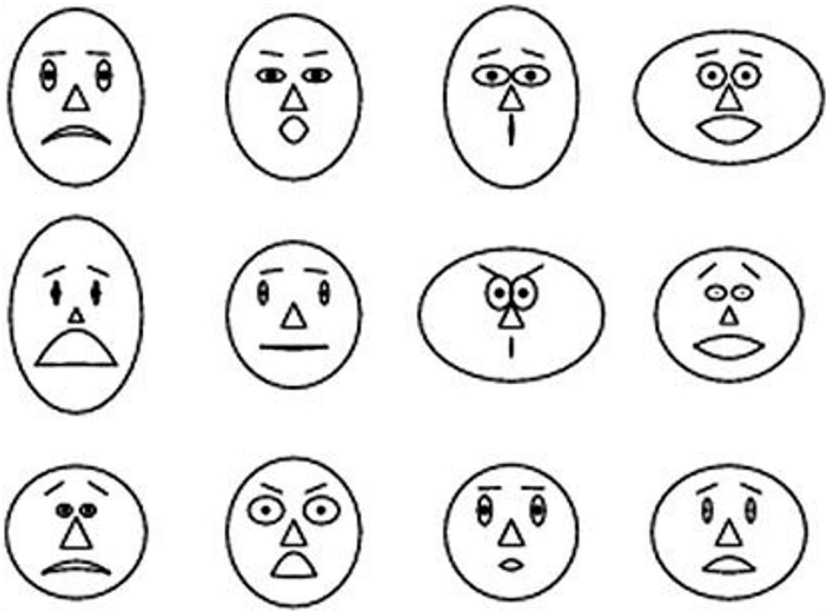
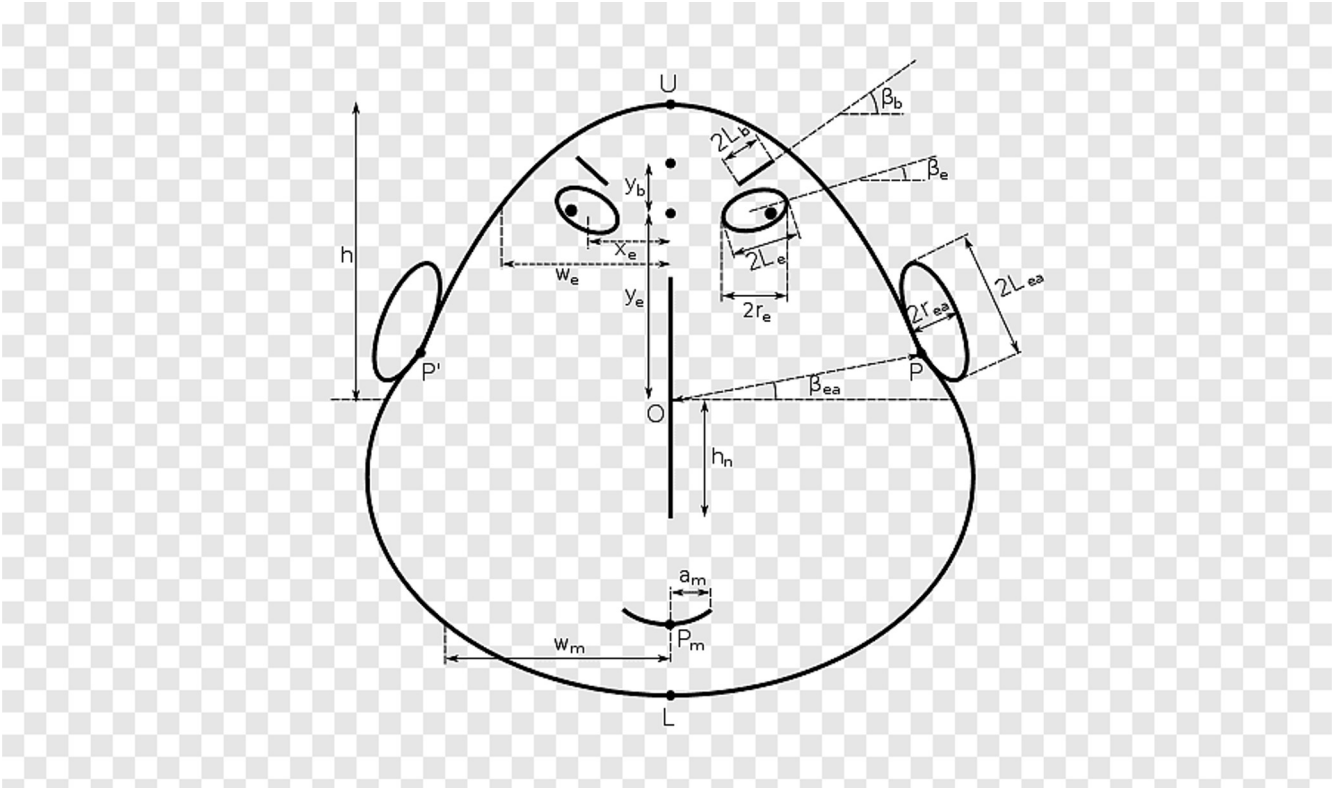
CSS3 Transitions
Geolocation
CSS3 Flexbox
RegisterProtocolHandler
Audio & Video elements
File System API
WebRTC
WebGL
CSS3 Filters
Web Audio API
DOM Mutation observers
Credits

Chernoff Face

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Bypassing System Two

- When it comes to influencing decisions,
  - How an interactive system presents information >= the content it presents
- Designing messages based on powerful stories bypass our system two and aim for system one
  - Stories that evoke fear, enjoyment, and other strong emotions

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Feed My Starving Children is a
Who We Are
Feed My Starving Children is a non-profit Christian organization committed to feeding God's children hungry in body and spirit.
The approach is simple: children and adults hand-pack meals specifically formulated for malnourished children, and we ship the