UX

user-experience design principles

cogs 105, week 13b, guest speaker + demos

Design Principles

‣ It is useful to identify such needs in personal informatics, but how do we design, create, test, then implement systems to ensure success? This is the domain of...

H.C.I.

HCI

‣ "Human-computer interaction."

‣ "...concerned with understanding how people make use of devices and systems that incorporate or embed computation, and how such devices and systems can be more useful and more usable." (Carroll, p. 1)

‣ "Human-factors engineering"; "usability"

Historical Example: GOMS

‣ The firs... ...man cognitiv... ...of instrum... ...er interac...

‣ Used fo... ...es and how th... ...es:

‣ **G**oals ...ction

```
GOAL: DELETE-FILE
 .  GOAL: SELECT-FILE
 .    .  [select:  GOAL: KEYBOARD-TAB-METHOD
 .    .            GOAL: MOUSE-METHOD]
 .    VERIFY-SELECTION
 GOAL: ISSUE-DELETE-COMMAND
 .    .  [select*: GOAL: KEYBOARD-DELETE-METHOD
 .    .              PRESS-DELETE
 .    .            GOAL: CONFIRM-DELETE
 .    .          GOAL: DROP-DOWN-MENU-METHOD
 .    .              MOVE-MOUSE-OVER-FILE-ICON
 .    .              CLICK-RIGHT-MOUSE-BUTTON
 .    .              LOCATE-DELETE-COMMAND
 .    .              MOVE-MOUSE-TO-DELETE-COMMAND
 .    .              CLICK-LEFT-MOUSE-BUTTON
 .    .            GOAL: CONFIRM-DELETE
 .    .          GOAL: DRAG-AND-DROP-METHOD
 .    .              MOVE-MOUSE-OVER-FILE-ICON
 .    .              PRESS-LEFT-MOUSE-BUTTON
 .    .              LOCATE-RECYCLING-BIN
 .    .              MOVE-MOUSE-TO-RECYCLING-BIN
 .    .              RELEASE-LEFT-MOUSE-BUTTON]

*Selection rule for GOAL: ISSUE-DELETE-COMMAND
  If hands are on keyboard, use KEYBOARD-DELETE-METHOD,
    else if Recycle bin is visible, use DRAG-AND-DROP-METHOD,
    else use DROP-DOWN-MENU-METHOD
```

Wikipedia for CMN-GOMS

Shreya Gupta
COGS BS

Cognitive Science in UX

SHREYA GUPTA

APRIL 16, 2015

About me

- B.S in Cognitive Science from UC Merced
  - Graduating class of 2014
- Undergrad Research Assistant for Rick Dale, Evan Heit and Teenie Matlock (2011 – 2014)
- Currently UX Researcher at UserTesting
- Based in Mountain View

Overview

- Research at UCM
- What is user experience (UX)?
- Top 5 Cognitive Bias' and how they relate to real life UX
- Q&A

Slide 1

My Research & What I learned at UC Merced

▶ Teenie Matlock – Linguistics (2011)
  ▶ Q-Day packets, data collection, general intro to research
▶ Evan Heit – Neuromarketing (2012)
  ▶ Survey design, analyzing surveys, quantitative data
▶ Rick Dale – Cognitive Behavioral Dynamics (2013-2014)
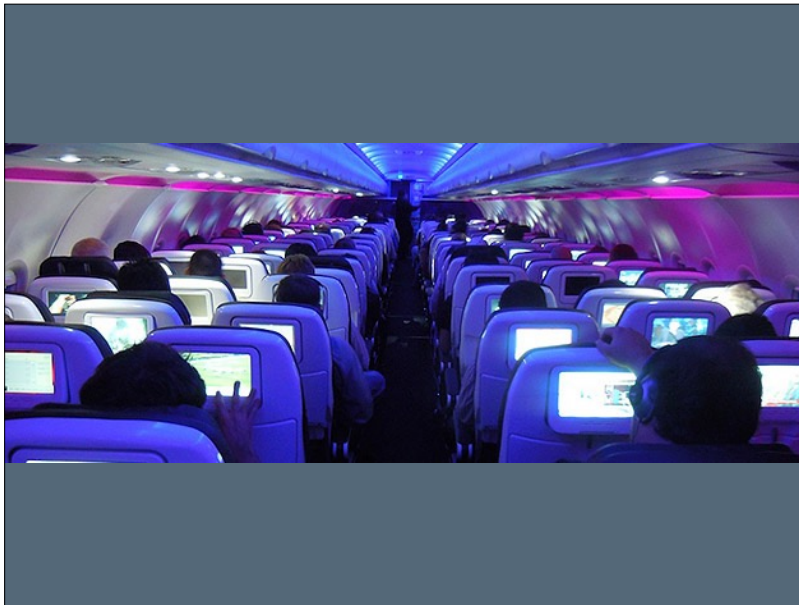 ▶ Eyetracking (SMI Instruments), script writing, collecting quant & qualitative data

Slide 2

User experience can be defined as, "a person's **perceptions and responses** that result from the use or anticipated **use of a product, system or service**."
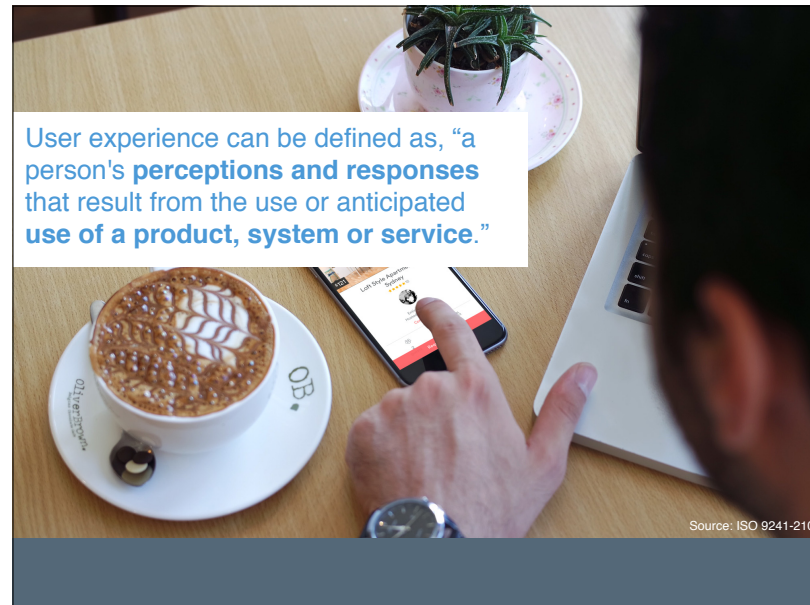
Source: ISO 9241-210

Slide 3

UX
is how people
FEEL
when they use
something

Slide 4
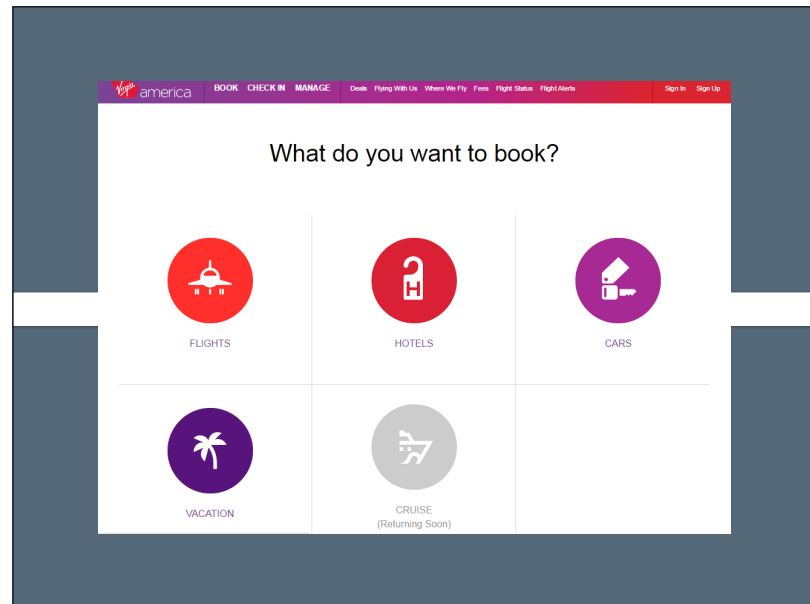
Rod Kurtz @rodkurtz · Mar 21
I love overhearing @VirginAmerica virgins walk down the aisle in amazement. You never forget your first time, kids.

RETWEETS 14   FAVORITES 43

12:57 PM - 21 Mar 2015 · Details

Reply to @rodkurtz @VirginAmerica

Danielle Llanes @daniellellanes · Mar 21
@rodkurtz @VirginAmerica when they say "look at the lights! Ohhhh is that music??" 😊

"User experience encompasses **all aspects** of the end-user's interaction with the company, its services, and its products."
– Don Norman

UX can be tangible . . .

"Focus on the user and all else will follow."

"I am congenitally customer focused."

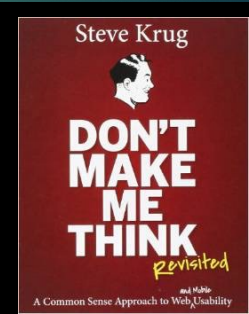"We love our users.
We try very hard to surprise and delight them."

Slide 1:

Coincidence?

FORTUNE WORLD'S MOST ADMIRED COMPANIES® 2015

1	Apple
2	Google
3	Berkshire Hathaway
4	Amazon.com

Slide 2:

1) We don't think too much if we don't have to

- If there are several ways to do something, we choose the course of action that is the **least cognitively demanding**.
  - This is often done subconsciously.

Steve Krug

DON'T MAKE ME THINK
revisited

A Common Sense Approach to Web and Mobile Usability
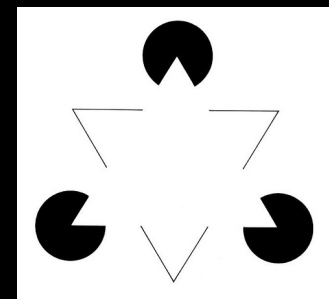
Slide 3:

2) We have limited attention

- We can't possibly process everything in our environment.
- What we pay attention to is based on our:
  - Goals
  - Context/environment
  - Prior experience

Slide 4:

3) We are wired to see structure and logic

https://www.princeton.edu/~freshman/kanizsa.fr

4) We see the world through filters

- Our filters are based on:
  - Personal experiences
  - Culture
  - Context/environment
  - Mental state
- Uber Color Example
  - Black in US: professional/sophisticated
  - Black in China: Death & danger

Popular UX rule: "YOU are not your user"

False consensus effect
The tendency to overestimate how much other people share our own beliefs and behaviors.

Would you walk around a college campus for 30 minutes wearing an "Eat at Joe's" sandwich board?

Eat at Joe's

5) Our memories are unreliable

Participants were shown stories and asked to recall them

Story 1 was a familiar event, but it left out some important parts.
> Result: Participants recalled those parts that weren't in the story.

Story 2 was a familiar event, but the order of events was changed.
> Result: Participants rearranged the events in the story in the normal order.

We must observe behavior, not ask about it

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