CS449/649:
Human-Computer Interaction

Spring 2019

Lecture XI

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Understand your users

Translate needs into functionalities

Build final version

Create design ideas

Test & Evaluate

Prototype design

Create Design Ideas
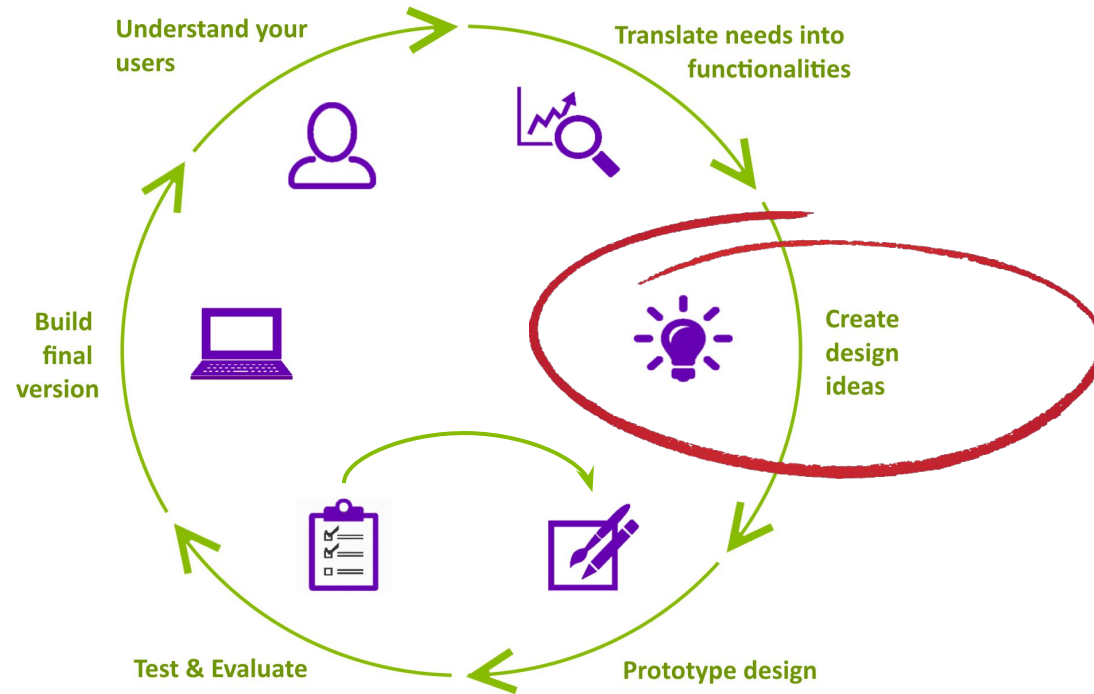
Create Ideas

Design

Create Design Ideas

Design

Create Design Ideas

Design

Interface - a surface/place where two independent systems, bodies or spaces meet / form a common boundary, and communicate with each other
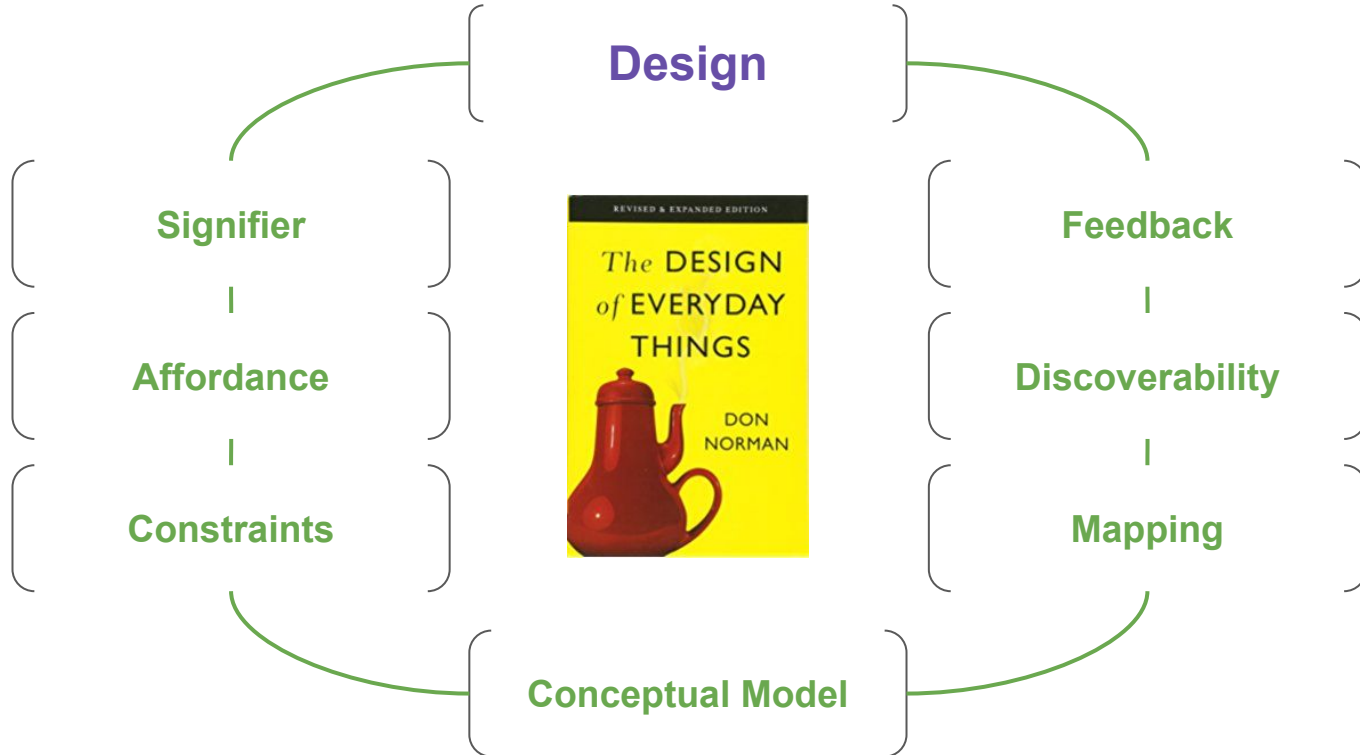
Create Design Ideas

Design

Interface - a surface/place where two independent systems, bodies or spaces meet / form a common boundary, and communicate with each other

Interface - a communication channel

Communication - exchanging of information

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Create Design Ideas

Design

Signifier

Affordance

Constraints

REVISED & EXPANDED EDITION

The DESIGN of EVERYDAY THINGS

DON NORMAN

Feedback

Discoverability

Mapping

Conceptual Model

Create Design Ideas

Design

Signifier - indicators of any type that communicate the action needed so the affordance can take place

Affordance - the possible use for an object when interacting with it

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Physical - caused by physical features

Cultural - based on what is culturally accepted

Semantic - based on the meaning of the situation

Logical - use reasoning to determine the alternatives

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Feedback - conveys effects of user's actions

Location:
where am I?

Current status:
what's happening?

Future status:
what's next?

Outcomes:
what just happened?

By David M. Hogue

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Feedback - conveys effects of user's actions

Location: where am I?

Current status: what's happening?

Future status: what's next?

Outcomes: what just happened?

By David M. Hogue

Time: How long is it going to take?
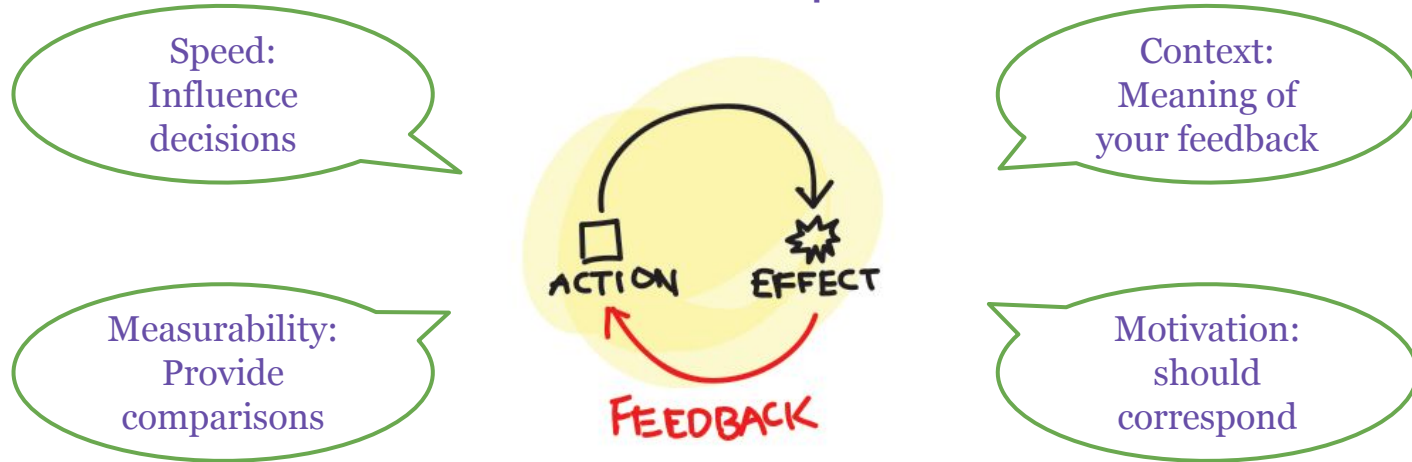
Reasons: why you do what you do?

Presence: Are you even there?

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Feedback - conveys effects of user's actions

Feedback loop

Speed: Influence decisions

Context: Meaning of your feedback

Measurability: Provide comparisons

ACTION   EFFECT

FEEDBACK

Motivation: should correspond

How To Design Outstanding Feedback Loops

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Feedback - conveys effects of user's actions

Discoverability - whether it's possible to figure out how to use an object by interacting with it

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Discoverability - whether it's possible to figure out how to use an object by interacting with it

Findability - whether it's easy to find content

Learnability - whether it's easy to learn how to use functionality

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Discoverability - whether it's possible to figure out how to use an object by interacting with it

Findability - whether it's easy to find content

Learnability - whether it's easy to learn how to use functionality

Make use of existing practices and familiar interactions

Build around existing mental models

Make use of signifiers and affordances

F-Shaped Pattern For Reading Web Content

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Mapping - indication of the relationship between objects

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Mapping - indication of the relationship between objects (often controls)

- Make use of spatial gestalt principles

- In some cases culture-specific

- Build around existing mental models

Elevator buttons, Shane Adams via Flickr Creative Commons

Image:
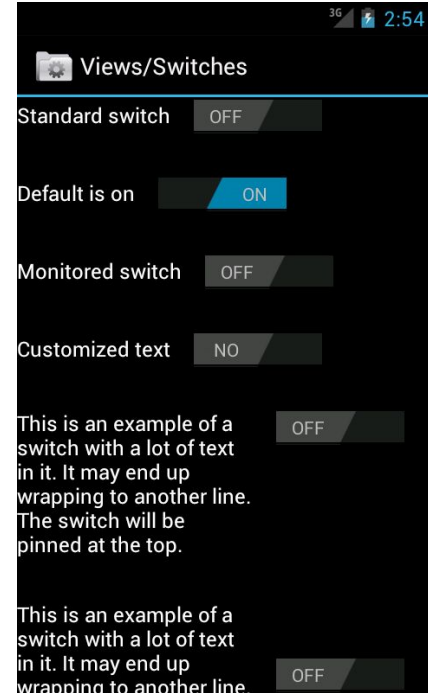https://stackoverflow.com/questions/9752760/slide-toggle-for-android

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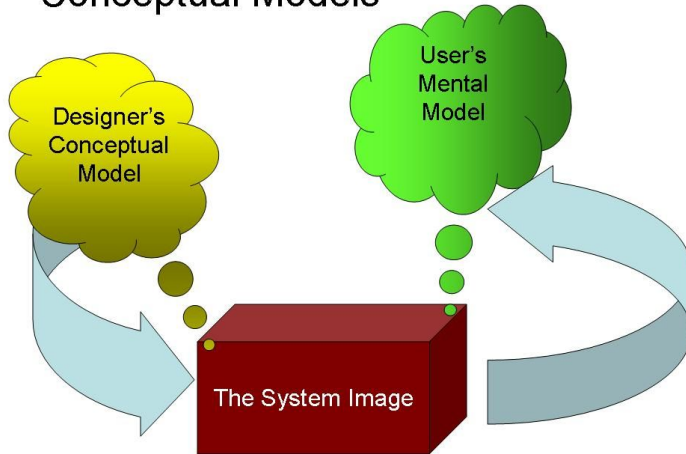**Mapping** - indication of the relationship between objects

Conceptual Model - user's understanding of how the system works communicated through the design

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Conceptual Model - user's understanding of how the system works, communicated through the design

Conceptual Models

Designer's Conceptual Model

User's Mental Model

The System Image

"For people to use a product successfully, they must have the same mental model (the user's model) as that of the designer (the designer's model). But the designer only talks to the user via the product itself, so the entire communication must take place through the "system image": the information conveyed by the physical product itself."

(Originally published in Norman & Draper's *User Centered System Design* (1986), and reused frequently thereafter: *The Design of Everyday Things* (1988, 2003) and *Emotional Design* (2004).

Source: Design as Communication by Don Norman

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Create Ideas   Design