2.0 INTERACTION DESIGN

USER-CENTERED DESIGN
A.K.A. HUMAN CENTERED DESIGN
1. The design is based upon an explicit understanding of users, tasks and environments.
2. USERS ARE INVOLVED THROUGHOUT DESIGN AND DEVELOPMENT.
3. THE DESIGN IS DRIVEN AND REFINED BY USER-CENTERED EVALUATION.
4. THE PROCESS IS ITERATIVE.
5. THE DESIGN ADDRESSES THE WHOLE USER EXPERIENCE.
6. The design team includes multidisciplinary skills and perspectives.
MASLOW’S HIERARCHY OF NEEDS

A THEORY OF HUMAN MOTIVATION

Abraham Maslow, American psychologist, 1943
Based on Maslow’s hierarchy of needs, the idea of a design hierarchy of needs rests on the assumption that in order to be successful, a design must meet basic needs before it can satisfy higher-level needs.
**Physiological needs:**
- food, water, warmth, rest

**Safety needs:**
- security, safety

**Belongingness and love needs:**
- intimate relationships, friends

**Esteem needs:**
- prestige and feeling of accomplishment

**Self-actualization:**
- achieving one's full potential, including creative activities

**Self-fulfillment needs**
- Basic needs
- Psychological needs
DESIGN HIERARCHY

- Functional
- Reliable
- Usable
- Convenient
- Pleasurable
- Meaningful

MEETS UNRECOGNIZED NEEDS (transformation)

MEETS DESIRES (success)

MEETS EXPECTATIONS (survival)
COGNITIVE FRAMEWORKS

EXPLAINS AND PREDICTS USER BEHAVIOR BASED ON THEORIES OF COGNITION.
MANY PROCESSES OF COGNITION

Attention
Perception
Memory
Learning
Reading, speaking and listening
Problem solving, planning, reasoning and decision making
A mental model represents a person’s thought process for how something works. They help shape actions and behavior, influence what people pay attention to in complicated situations, and define how people approach and solve problems.

A mental model is based on belief, not facts; and individual users have their own mental model.
A conceptual model is the actual model that is given to the user through the interface of the product.
WHY DO I CARE?

Everything we do in the field of user experience is, ultimately, about the match, or mismatch, between the users’ mental models and the product’s conceptual model.

When you see people make mistakes on your site, the reason is often because they’ve formed an erroneous mental model or your conceptual model doesn’t match their mental model.
1. IF THEY HAVE AN ERRONEOUS MENTAL MODEL:
   Teach users a more accurate mental model at an earlier stage of the user experience (i.e. demo, instructions)

2. IF YOUR CONCEPTUAL MODEL IS TOO FAR FROM THEIR MENTAL MODEL:
   Resign to the fact that your conceptual model cannot be rationalized. Then redesign a new conceptual model that is closer to their mental models.
**CORE COMPONENTS**

Metaphors and analogies convey to people how to understand what the product is for and how to use it.

Concepts that people are exposed to throughout the product.

Relationships between concepts.

How the various metaphors, concepts and their relationships are organized determines the user experience.
THE BEHAVIOR YOU’RE SEEING IS THE BEHAVIOR YOU’VE DESIGNED FOR (WHETHER INTENTIONAL OR NOT).

— JOSHUA PORTER
There are many types of cognitive processes:

attention
perception
memory
learning
reading, speaking, listening
problem solving, planning, decision making, reasoning
COGNITIVE LOAD

The level of effort associated with thinking and reasoning (including perception, memory, language, etc.), thus potentially interfering with other thought processes.

A user interface strives to minimize the cognitive load associated with operating the interface itself so that all of a person’s cognitive resources are available for their task.
A study suggests that people who are heavy multitaskers are likely to be those who are easily distracted and find it difficult to filter out irrelevant information than those who infrequently multitask. 

(E. Ophir, “Cognitive control in media multitaskers”, 2009)
2. PERCEPTION

How information is acquired from the environment, via different senses (vision being the most dominant).
VISUAL PATTERNS

We are pattern seekers.

We store patterns that influence our expectations.

What we see is strongly influence by our expectations.
Perception is based on change. We scan, filter and interpret differences.

We use differences to create understanding.
FIND THE RED CIRCLE
FIND THE RED CIRCLE
An interaction is intuitive when the user doesn’t have to think.

We can guide them via visual and interaction design.
GESTALT PRINCIPLES

THE WHOLE IS DIFFERENT THAN THE SUM OF ITS PARTS.

Max Wertheimer,
German psychologist, 1910
SIMILARITY

Objects that look similar are grouped together
PROXIMITY

Object positioned close together appear grouped
APPLYING SIMILARITY AND PROXIMITY

**Similarity** in appearance indicates a likeness in functionality
APPLYING SIMILARITY AND PROXIMITY

Proximity helps us to imply relationships between similar objects
Objects grouped together are seen as a whole shape, our brain fills in any missing information.
APPLYING CLOSURE

Closure allows us to view the top and bottom area as separate, even though they’re surrounded by white space.
Objects arranged in a continuous line are grouped together
COMMON FATE

Objects facing the same direction are grouped together, any outsiders may create tension
Continuation and Common fate in interaction design is commonly utilized by motion and navigation.
A filtering process is used to decide what information gets further processed and memorized.

The more attention that is paid to something and the more it is processed in terms of thinking about it and comparing it with other knowledge, the more it is likely to be remembered.
Miller’s Theory (1956) the seven, plus or minus, two chunks of information can be helpful in short term memory.

**GOOD**
phrases, large numbers, grocery lists, etc.

**BAD**
options in a menu, display only 7 icons, etc.
4. LEARNING

People find it very hard to learn by following a set of instructions in a manual. Instead, they prefer to learn by doing.
This is a job card. Tap anywhere to view a full description.

New York City, NY

5-7 yrs. experience

MARKETING
OUTSIDE SALES
MANAGEMENT

Swipe left to "pass" if it's not for you
Swipe right to "like" a card if you are interested in learning more

Tap to "pass"
Tap to "like"
IMPLICATIONS

Design interfaces that encourage exploration

Design interfaces that constrain and guide users to select appropriate actions when initially learning.

Link concrete representations and abstract concepts to facilitate the learning of complex material.
5. READING, SPEAKING, LISTENING

These three forms of language process have similar and different properties. People have different preferences on how they want to learn through language.

Design systems that allow users to access content through all 3 forms.
Instead of providing more information to enable people to compare products when making a choice, a better strategy is to design technological interventions that provide just enough information, and in the right form, to facilitate good choices.
Human minds have evolved to act quickly, making just good enough decisions by using fast and frugal heuristics (a.k.a practical methods).

We typically ignore most of the available information and rely on only a few important cues.
DESIGNISM #9

DON’T FIND CUSTOMERS FOR YOUR PRODUCTS, FIND PRODUCTS FOR YOUR CUSTOMERS.

— SETH GODIN