Basic of interaction

Animacy (starting from Heider & Simmel 1944)

**Causality** (starting from Michotte 1946)

A simple square could convey emotions and intentions if it moves following a certain law of motion

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First type of interaction: objects with objects
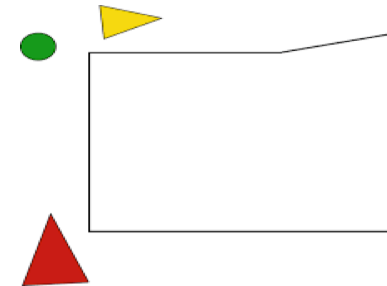
Humans interpret these interactions as a function of kinematics and dynamics of moving objects

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Everyday objects are designed without considering human cognitive constraints and natural/cultural biases

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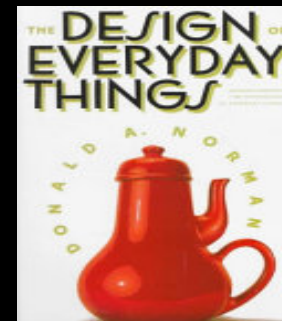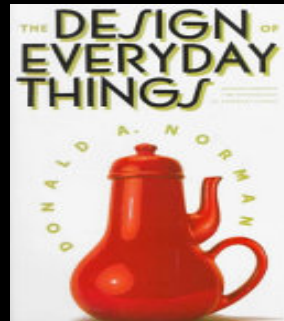
He wanted to found the Psychopathology of Everyday Things (PET): as Freud, to start from "little thingds" to put in evidence big problems.

PSYCHOANALYSIS: starts from little and meaningless manifestations as dreams, tic, lapsus, mishaps
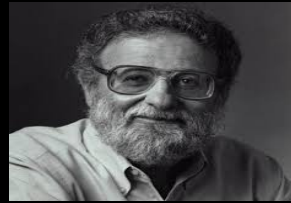
PET: starts from little and meaningless manifestations as opening a door, washing hands, switching a light

USER CENTERED DESIGN

USABILITY

The extent to which a product can be used by users to achieve specified goals with effectiveness, efficiency and satisfaction.

Second type of interaction: humans with objects
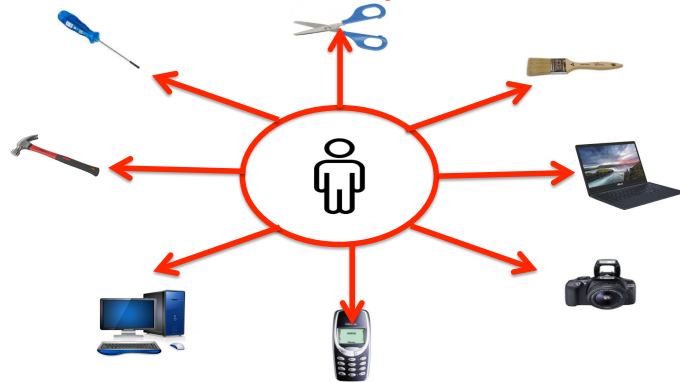
But….

The concept of usability is limitative.

Usability is focused on cognition (awareness), it left out some important aspects of human behaviour:

emotions, instinct and aesthetics

Slide 1

Individuals express self-identities through physical objects they belong (Prentice, 1987)...or they do not belong.

1) Stimulation
2) Identification
3) Evocation

Hassenzhal (2003)

Slide 2

Soon designers and reasearchers became aware that is also – and sometimes exclusively – on these bases that people chose their devices and objects.

The concept of usability was then slightly replaced with – or better included in - a more general concept:

USER EXPERIENCE (UX)

Slide 3

Third type of interaction: humans with humans

Slide 4
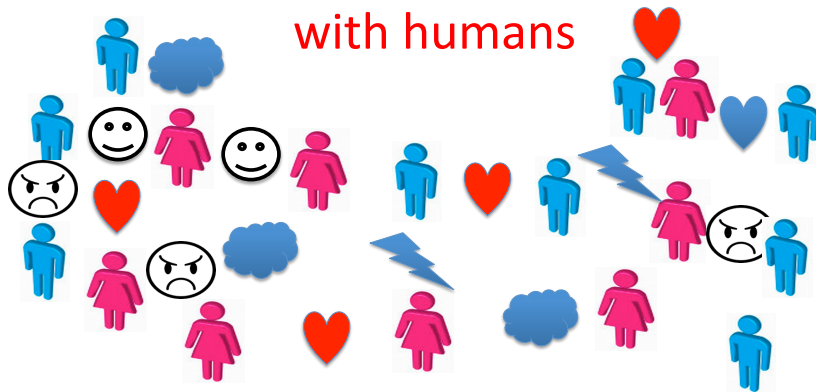
User experience

In the last decade in HCI user experience (and experiential marketing) became a sort of catchphrase.

UX

User experience

User experience refers to an holistic perspective: traditional quality models are enriched of concepts not related to product functionality, as enjoyment, engagment, pleasure (hedonic value) or game/fun (playful value).

User experience: Norman

Norman was the first to introduce the concept of UX ("*User Experience architec*t" in Apple).

USER EXPERIENCE: definition

"[UX] It's everything that touches upon your experience with the product. And it may not even be near the product, it may be when you're telling somebody else about it. That's what we meant when we devised the term "User Experience" and set up what we called the User Experience architect's office at Apple, to try to enhance things.

Today that term has been horribly misused. It is used by people to say "I'm a User Experience designer, I design websites, I design apps" so they have no clue of what they're doing and they think that the experience is that simple device, or the website or the app or who knows what.

No! It's everything, it's how you experience the world, it's the way you experience your life, the way you experience a service, or, yeah, an app or a computer system. But it's a system that's everything. Got it? "

Transcription from the video: "Don Norman: The term "UX", Nngroup.com, 2016

USER EXPERIENCE: definition

Standard ISO 9241-210 (revised in 2019) UX definition :

user's perceptions and responses that result from the use and/or anticipated use of a system, product or service

USER EXPERIENCE: definition

- *Note 1 to entry: Users' perceptions and responses include the users' emotions, beliefs, preferences, perceptions, comfort, behaviours, and accomplishments that occur before, during and after use.*

USER EXPERIENCE: definition

Note 2 to entry: User Experience is a consequence of brand image, presentation, functionality, system performance, interactive behaviour, and assistive capabilities of a system, product or service. It also results from the user's internal and physical state resulting from prior experiences, attitudes, skills, abilities and personality; and from the context of use.

- *ISO 9241-210:2019(en)*
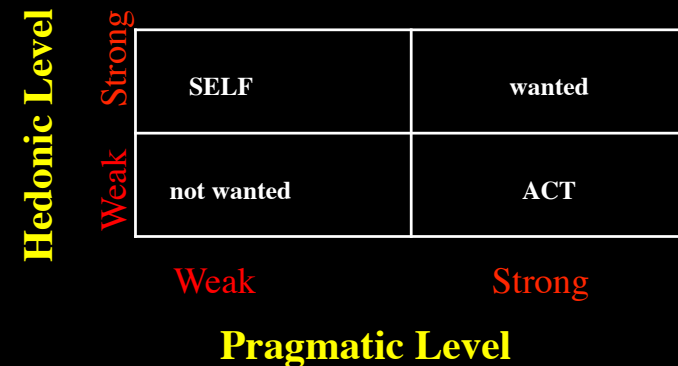
User experience

According to Jacob Nielsen UX is the sum of emotions, perceptions and reactions that a person feels when s/he comes into contact with a product or service, facing practical, ergonomical, technological aspects but also cognitive, psychological, anthropological and social (Nielsen, Snyder, Molich at al. 2001).

- As a concept, UX is very similar to context: it connects perceptual, attentional, emotional and motivational aspects.

- In few words, it is so omni-comprehensive (i.e. including everything) that it is difficult to operazionalise it ...tentatives have been done, though

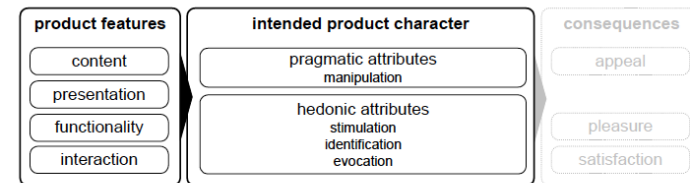## Garrett' model for UX (2010)
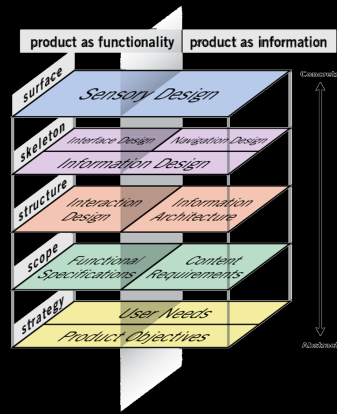
Hassenzahl's model for UX

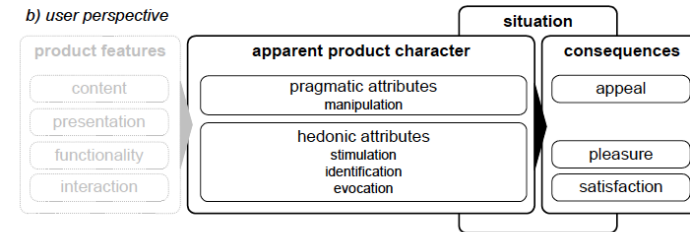## Hassenzahl's model for User Experience

The key elements of this model are (a) the features of a product; (b) the character of a product and (c) its consequences.

These three elements are analyzed from (a) designer perspective (b) user perspective.

Product character

A product character is a high-level description.

It summarize product's attributes, such as novel, interesting, useful, predictable.

The character's function is to reduce cognitive complexity and to trigger particular strategies for handling the product (schema/pattern).

Intended character, apparent character

A product designer fabricates a character by choosing and combining a specific product features:

(a) content;
(b) presentational style;
(c) functionality;
(d) interactional style.

Intended character, apparent character

Features are chosen by designer to convey a particular, intended, product character of gestalt.

However, the character is subjective and only intended by the designer: there is no guarantee that users will actually perceive and appreciate the product the way in which the designer wanted it to be perceive and appreciated.

Intended character, apparent character

When individuals come in contact with a product, a process is triggered.

First, people perceive the product's features.

Based on this, each individual constructs a personal version of the product character: the apparent product character.

This character consists of pragmatic and hedonic attributes.

Intended character, apparent character

Second, the apparent product character leads to consequences: a judgement about the product's appeal (good/bad), emotional consequences (pleasure, satisfaction) and behavioural consequences (e.g. increase time spend with the product).

Intended character, apparent character

However, the consequences of a particular product character are not always the same. They are moderated by the specific usage situation.

Apparent character

An apparent product character is a cognitive structure. It represents product attributes and relations that specify the co-variations of attributes. It allows inferences beyond the merely perceived (a product "simple", an interface "clear").

But what groups of attributed can be distinguished?

Apparent character

Product character is based on features that include the major FUNCTIONS OF PRODUCTS. They enable people to:

1) Manipulate their environment
2) Stimulate personal development (growth)
3) Express identity
4) Provoke memories (symbolic value)

Apparent character: pragmatic attributes

The first features (i.e. manipulation) is pragmatical, and it requires relevant functionality (utility) and ways to access this functionality (usability).

A pragmatic product is primarily instrumental and it is used to fullfil externally given or internally generated behavioural goals.

Apparent character: hedonic attributes

All the remaining products attributes are hedonic, a term emphasizing individuals psychological well-being.

1) Stimulation
2) Identification
3) Evocation

Apparent character

A product is perceived as pragmatic because it provides effective and efficient means to manipulate the environment. ACT PRODUCT

A product is preceived as hedonic because it provides stimulation, identification or provokes memories. SELF PRODUCT

Apparent character

A suitable design process must assure that an appropriate product character is selected and that this character is properly communicated to the user.

ACT & SELF

Only products, which provide at least some opportunities for being related to the self, are likely to be truly and stably appreciated.

The psychonalysis of things is settled?

ACT & SELF

The idea of SELF is related to emotions: satisfaction (as already defined in the usability concept, but here + joy), pleasure and appealingness

Appealingness

If a product is able to trigger positive emotional reactions it is appealing.

Appealingness weights and integrates perceptions of product attributes by taking particular situations (i.e. contexts) into account.

Appealingness

For example, individuals may consider an ACT product as appealing because the goal achievable by the product are of high relevance to them in a particular situation. Other individuals (or even the same) can consider the same product as less appealing in the same situation, maybe because they were rather interested in communicating a favourable identity to others than achieving behavioural goals.

Appealingness

In short, appealingness integrates experiences with and feelings towards a product in a particular situation into an evalutative judgement

Conscious and unconscious

We started this journey into Hassenzhal model because one of the heuristic in the expert evaluation processes was "conviviality"

Polite software

Alan Cooper (1999) argues that if we want people to like our software we should design it to behave like a likeable person. Drawing on work by Reeves and Nass (1996, we'll talk about it later), he continues with a list of characteristics:

Polite software

1) Is interested in me
2) Is deferential to me
3) Is forthcoming
4) Has common sense
5) Anticipates my needs
6) Is responsive

Polite software
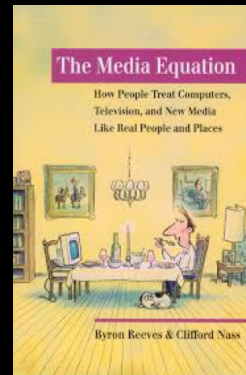
7) Gives instant gratification

8) Is taciturn about its personal problems

9) Is well informed

10) Is perceptive

11) Is self-confident

12) Stays focused

13) Is fudge-able

14) Is trustworthy

Being polite

Cooper's list is based on his studies done together with Nass and now known as "CASA" theory

Unconscious aspects: CASA THEORY

In recent years there is growing evidence supporting the so-called CASA (Computer Are Social Actors) paradigm

The Media Equation

How People Treat Computers, Television, and New Media Like Real People and Places

Byron Reeves & Clifford Nass

According to CASA experimental paradigm, several studies demonstrate that individuals consistently apply social cognitive constructs and stereotypes (typically associated with humans) to computers, television and new media, although users know that it is absurd to do so

For example (1). We apply to computers gender-science stereotypes (a computer with a male voice is judged better than a computer with a female voice).


Males are more competent in mathematics and technology than women (e.g. Nosek, Banaji & Greenwald, 2002)

2) Politness rules: direct requests of evaluation (evaluate a given software on a computer) gives more positive and homogeneous responses as compared to indirect requests of evaluation (paper-and-pencil evaluation of the same software in another room)

"It says, '22,873 tons of bituminous coal, and I think I love you.'"

(3) Stereotypical inferences: people (and computers) who compliments a lot are judged as less intelligent as compared to people (and computers) who made several criticisms.

I HATE YOU
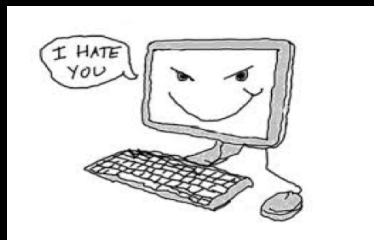
Unconscious aspects: aesthetics

Empirical evidence (starting from Kashimura & Kurosu, 1995) show that products perceived as located at an high hedonic level (i.e. perceived as "beautiful") are also more easy to use (i.e. usability metrics show less errors and faster task's completion rate).

'What is beautiful is usable'.