

# **Enrichir l'analyse de l'activité avec l'expérience vécue**

*Extending activity analysis through lived experience*

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# What is user experience (UX) ?

- « UX highlights the **experiential, affective, meaningful and valuable aspects** of human-computer interaction and product ownership, but it also includes a person's perceptions of the practical aspects such as **utility, ease of use and efficiency** of the system » (Wikipedia)
- « A person's perceptions and responses that result from **the use and/or anticipated use** of a product, system or service » (ISO 9241-210: 2010)
- « A consequence of a **user's internal state** (...), the characteristics of the designed **system** (...), and the **context** within which the interaction occurs » (Hassenzahl & Tractinsky, 2006)
- « A customer experience is an **interaction** between an organization and a customer as perceived through **a customer's conscious and subconscious mind** »  
([http:// www.beyondphilosophy.com](http://www.beyondphilosophy.com))

# Dimensions of UX

- Three dimensions of UX (Mahlke, 2008; Hassenzahl, 2004)
  - Instrumental (Pragmatic)
    - « Connected to the users' need to achieve **behavioral goals**. Above all, goal achievement requires **utility and usability** ».
  - Non instrumental (Hedonic)
    - « Provides **stimulation** by its challenging and novel character or **identification** by communicating important personal values to relevant others »
  - Emotional reactions
    - « Using a product with a particular product character in a particular situation will lead to **consequences**, such as emotions (e.g., satisfaction, pleasure) »

# User experience (UX) and experience: critical issues

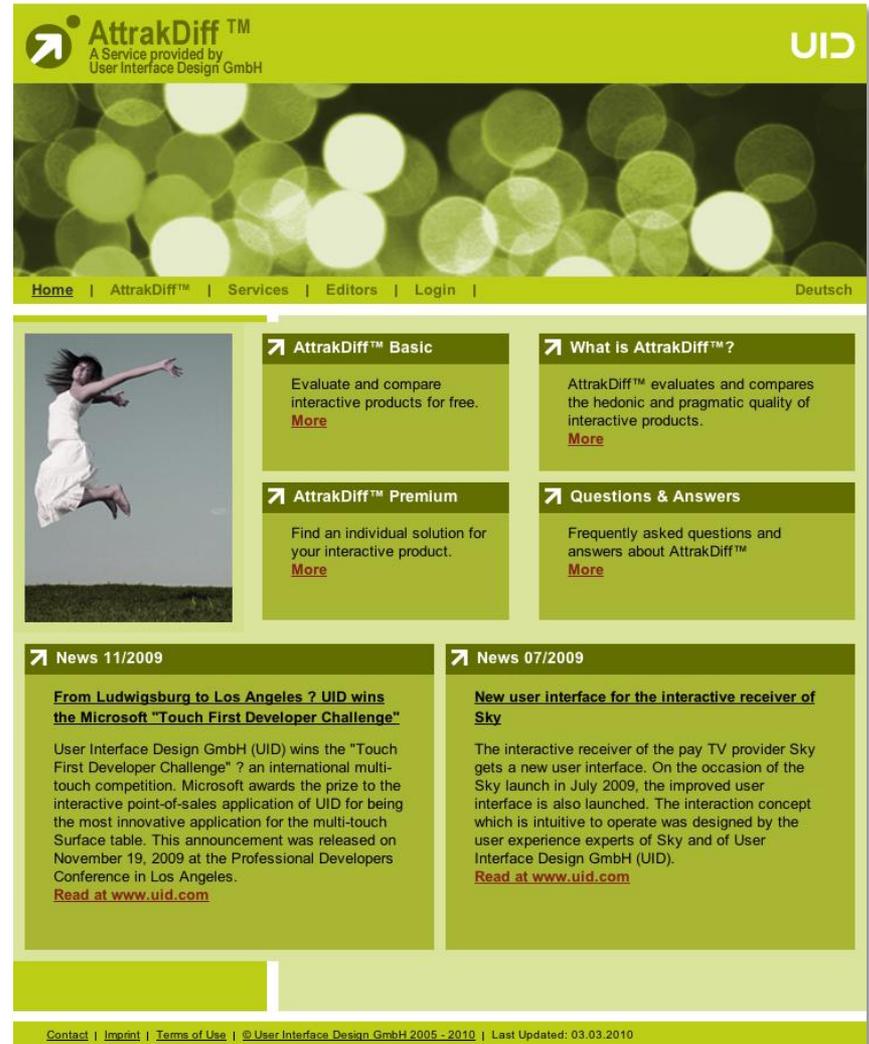
- Lack of a common definition
  - Law, E. (2011) Measurability and predictability of User Experience. In Proceedings of EICS'11
- Overlap/confusion between UX and other notions
  - “Is satisfaction just the subjective side of usability?”
  - «« In HCI the term satisfaction is often used synonymously with perceived usability or at least with the overall evaluation of a product. (...) I understand satisfaction as an emotional consequence of goal-directed product use » (Hassenzahl, 2004)
- Lack of common methods
  - Vermeren, A., Lai-Chong Law, E., Roto, V., Obrist, M., & Väänänen-Vainio-Mattila, K. (2010). User Experience Evaluation Methods: Current State and Development Needs *Proceedings of NordiCHI 2010, October 16-20, Reykjavik: ACM.*
- Lack of theoretical foundations
  - Kuutti, K. (2010). Where are the Ionians of user experience research ? *NordiCHI '10 Proceedings of the 6th Nordic Conference on Human-Computer Interaction: Extending Boundaries, October 16–20, 2010, Reykjavik, Iceland (pp. 715-718). New-York: ACM.*
- Individual vs. social/collective view
  - Battarbee, K. (2003). Defining co-experience. In Proceedings of DPPI'03, June 23-26. Pittsburgh, USA.

# Quantitative methods (without theory ?)

- **Methods + metrics**
  - For practitioners
  - Need for ‘quick’ methods
  - Focus on evaluation
  - How to objectify the subjective: the search for metrics...
- **Examples**
  - Self assessment scales
    - Self-assessment-manikin (SAM), EmoCards/PrEmo, Geneva Emotion Wheel (GEW),...
  - Psycho-physiological measurements (EEG, fMRI, heart rate, facial expression, skin perspiration,...)

# Examples

- AttrackDiff
- Evaluation of hedonic and pragmatic quality of interactive products (Hassenzahl et al. 2003)
- Evaluates the experienced attractiveness of a product in terms of usability and appearance
- AttrackDiff consists of 23 word-pairs representing the extreme opposite
- Seven-step items whose poles are opposite adjectives (e.g. "confusing - clear", "unusual - ordinary", "good - bad »)



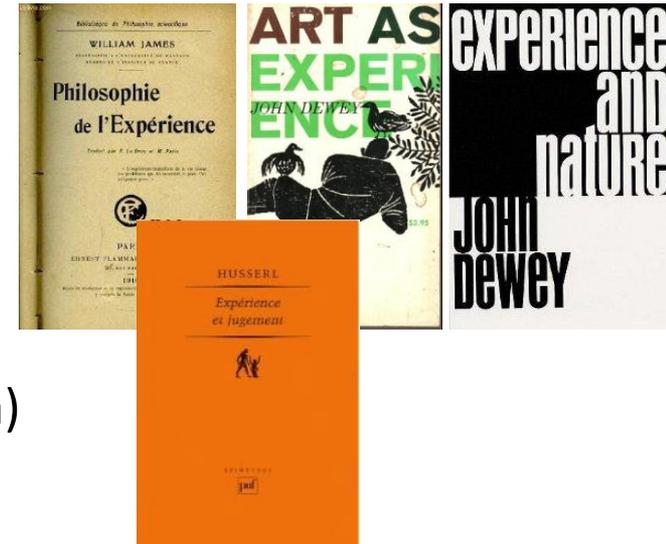
The screenshot shows the AttrackDiff website, which is a service provided by User Interface Design GmbH. The website features a green and white color scheme with a background of blurred green circles. The navigation menu includes Home, AttrackDiff™, Services, Editors, Login, and Deutsch. The main content area is divided into several sections:

- AttrackDiff™ Basic:** Evaluate and compare interactive products for free. [More](#)
- AttrackDiff™ Premium:** Find an individual solution for your interactive product. [More](#)
- What is AttrackDiff™?:** AttrackDiff™ evaluates and compares the hedonic and pragmatic quality of interactive products. [More](#)
- Questions & Answers:** Frequently asked questions and answers about AttrackDiff™. [More](#)
- News 11/2009:** From Ludwigsburg to Los Angeles ? UID wins the Microsoft "Touch First Developer Challenge". User Interface Design GmbH (UID) wins the "Touch First Developer Challenge" ? an international multi-touch competition. Microsoft awards the prize to the interactive point-of-sales application of UID for being the most innovative application for the multi-touch Surface table. This announcement was released on November 19, 2009 at the Professional Developers Conference in Los Angeles. [Read at www.uid.com](#)
- News 07/2009:** New user interface for the interactive receiver of Sky. The interactive receiver of the pay TV provider Sky gets a new user interface. On the occasion of the Sky launch in July 2009, the improved user interface is also launched. The interaction concept which is intuitive to operate was designed by the user experience experts of Sky and of User Interface Design GmbH (UID). [Read at www.uid.com](#)

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# Theories

- Theories of (user) experience
  - Historical milestones ; candidates
    - Pragmatism (W. James ; Dewey ; Mead)
    - Phenomenology (Husserl)
    - Philosophy of mind (Theory of qualia)
  - Recent trends
    - Consciousness/Subjective experience
    - Dialogism + Pragmatism
    - Theory of « Flow »



# Three issues

- Phenomenological vs. « scientific »/quantitative approach
  - « The sensation of colour cannot be accounted for by the physicist's objective picture of light-waves. Could the physiologist account for it, if he had fuller knowledge than he has of the processes in the retina and the nervous processes set up by them in the optical nerve bundles and in the brain? I do not think so. »  
*Schrödinger, Erwin (2001). What is life? : the physical aspects of the living cell. Cambridge: Cambridge Univ. Press.*
- Theoretical vs. practical concern
  - « As an interaction designer I was looking for ideas about how I could improve upon the experience of technology products. I was utterly disappointed. (...) Don't get me wrong. If you are theoretically inclined or if you enjoy reading verbose text, go ahead and order a copy. I didn't find anything mis-represented. On the other hand if you are looking for any practical suggestions for design, skip this one. » *An Amazon customer review, January 23, 2009*
- Ergonomics and experience
  - Si l'ergonomie se retrouvait assez bien dans l'approche classique de l'utilisabilité (...), le développement des approches dites de « l'expérience utilisateur », obligent l'ergonomie à se questionner sur ses contributions et sa place dans ce nouveau champ de recherche émergent ». *Barcenilla & Bastien, 2009*

# Integrative view: a proposal

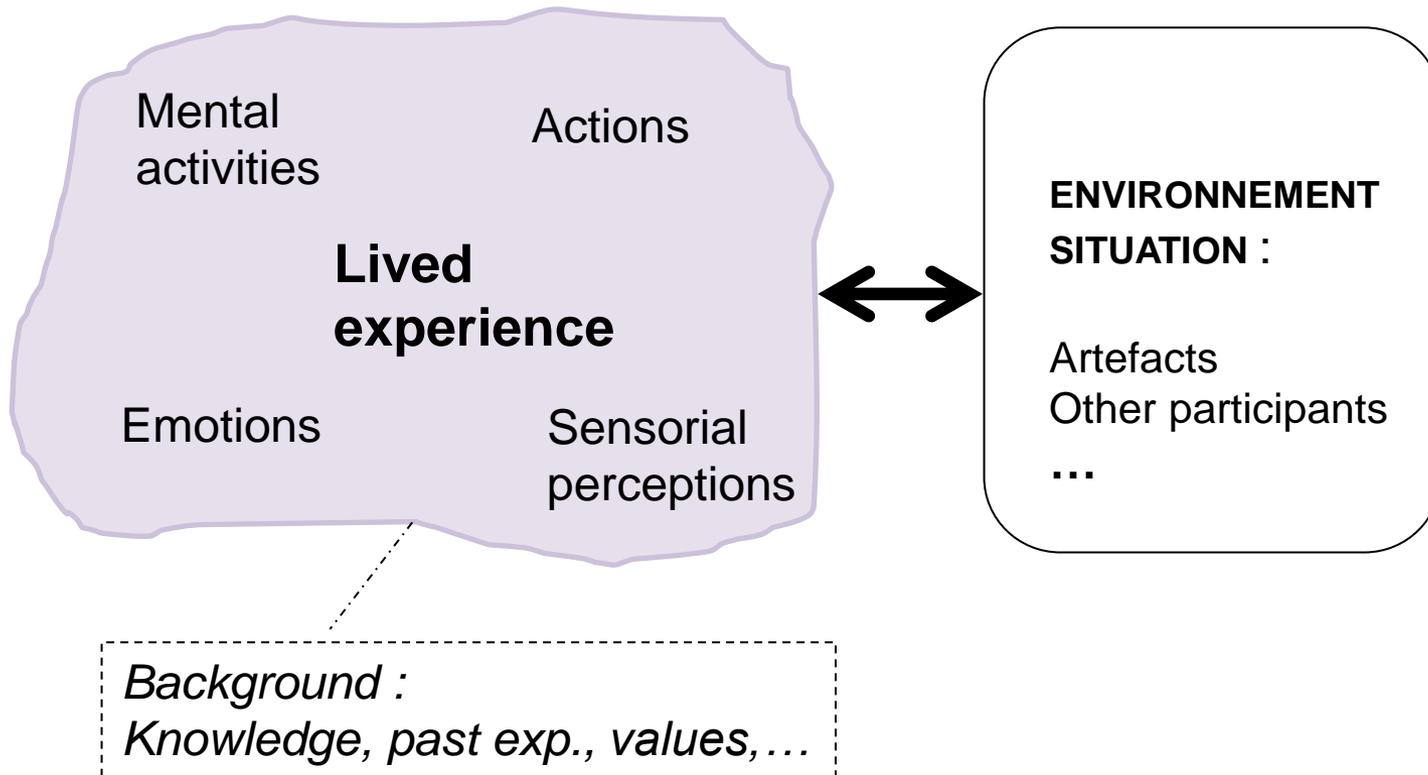
- Phenomenological account of experience
- Experiential perspective but not just on product quality
  - Experiencing a situation, an interaction,...
- Bridge between (user) experience frameworks and francophone tradition of activity analysis
  - Ex: How does a worker feel/experience the unevenness of a aluminum billet (perception of informal clues)
- Theory and methods
  - Scientific and practical concerns
- Design and evaluation
  - Documenting experience in order to design better activity systems
  - Assessing the quality of experience from the agent's point of view

## Two landmarks in the french psycho-ergo landscape

- P. Vermersch's psycho-phenomenology
  - Experience as the familiar and singular apprehension we have of our situated cognition and action
  - Experience as prereflective consciousness (Husserl)
  - Psycho-phenomenological approach
    - First-person/second person access to experiential content
  - Explicitation interview
    - Reflective act: to help the subject to make explicit what was only implicit in her/his description, or even implicitly present in her/his experience
    - To transform a pre-reflected act into a reflected content

## Two landmarks in the french psycho-ergo landscape

- J. Theureau's Course of Experience
  - Experience as the sensemaking process of his/her on-going activity from the actor's point of view
  - Experience as the dynamics of prereflective consciousness (Sartre)
  - Phenomenological and semiological approach
    - Phenomenological: primacy to the point of view of the actor (empirical methods and analytical notions)
    - Semiological: sign/semiosis, sign components/moments of semiosis and dynamical semiotic units and structures
  - Retrospective verbal reports
    - 'Self-confrontation': re-enactement of a past experience supported by an artefact (ex: videorecording)



What did the subjects thought, perceived, felt and perceived during the activity, in this specific situation?

# Which methodology?

Objective : moving close to the complexity of the lived experience

Risk of rationalisation and **reconstruction** => importance of remembering

Debate Nisbett & Wilson 1977 / Ericsson & Simon 1984

« *There has always been a certain amount of mistrust of verbal reports by experimental psychologists. As a result, experiments were done above all to confirm this negative evaluation* » (Hoc & Leplat 1983, p.284). « *Reflexion on the methodology is therefore essential* » (Leplat & Hoc 81, p. 743)

⇒ 'Re-situating' **post-activity interviews** :

Explicitation (without traces) and Self-confrontation (with traces)

**Situated, embodied talk** VS **general, analytical talk**



« *how do you generally do... - I generally proceed by...* »



« *What happend to you at this moment? – I saw... and thought... feeling...* »

## Precautions :

- Smallest **delay** between activity /interview
- Possible **traces** as remembering support : video (if dynamic context and audio/visual activity), written documents (forums) diaries (salient events during a week)
- Specific « explicitation » **techniques for questioning** (Vermersch 1994)
  - « Evocation » of a specified situation ; sensorial context ; time to remember ; cues
  - Avoiding explanations and justifications
  - Non-inductive questions
  - Help to fragment/specify the descriptions
  - Relation : contract, active but discreet guide, follow the subject

=> From prereflective experience to « conscience réfléchie »

## Sources of psychological discomfort ?

(ECCE 2008, 2010)

### 1) Overloaded attention and loss of control

Especially clear for older drivers



*View of the face*



*Subjective view  
(camera-glasses)*

“Here the boulevard of the death... there are too much things, roads crossing, motorcycles coming from nowhere, and above all too much things on the ground”

« This crossroad is complex because there are five axes, **it's not very comfortable** ; because **the lights (...)** I don't know if they are well synchronized, here I'm the first so **I wait with apprehension that the light will turn green**, because at that time I still didn't know what I had to do to turn on the left, **I don't see anything on the ground ... well I must start! I move forward** but here **I'm afraid** then **I brake, I'm afraid** because I suddenly realize that maybe I'm totally wrong because in fact I am not allowed to turn left, do I have the right? **Someone is hooting behind me (...)** a young excited I'm sure, and **it's paralysing me still more (...)**, **I don't feel good at all**, I try to convince myself that things will go all right, **I try to stay calm**”

⇒ **Actions**, **thoughts**, **emotions**, **sensorial perceptions** intertwined and detailed here

=> Attention on several events, lack of points of reference => **stress and doubt paralysing action and thought** ; links emotion-action-cognition

Most distinctive source of emotions : **breakdown** in the flow of continuity individual / environment (Rimé 2005) Breakdown between usual mastery/control and un-ability. Power of action disrupted (Rabardel 2005).

For some old drivers, a total change in the consideration of the situation and power of mastery => deliberately reducing the attentional scope => more serene and efficient

**Design** => no additive help systems but help to indicate intentions

## 2) Psychological discomfort due to social image and relations

Discomfort when face threatening(Goffman 1959) and conflict

Using a cruise control system, Patrick describes that in a descent he is overtaken by a car ; when the road goes up again, the other car slows down but his own car continues with the same speed, and overtakes the other driver

He then feels “*embarrassed by the negative image he gives of some unpleasant driver*” and avoids gaze of the other driver “*his gaze would kill me*”.

=> Help system may produce social discomfort => design issue

## Driving an Electric Vehicle

Cl.Nguyen PhD (CIFRE Renault) *ECCE 2012*

How the drivers manage their **car autonomy**? and the risk of breakdown?

Lend EV during 2 weeks => diary, videotaping, explicitation and self-confront interviews

Results :

Different **styles** of drivers : from anticipators to late refillers

depends on **affective relation to the risk** of breakdown (serene/worried when signal)

Case example of Omar, a “late refiller”

On a Sunday, he decided to go in a shopping area, 15 km from his home place, with his wife.

Omar “rather **confident**” at the beginning

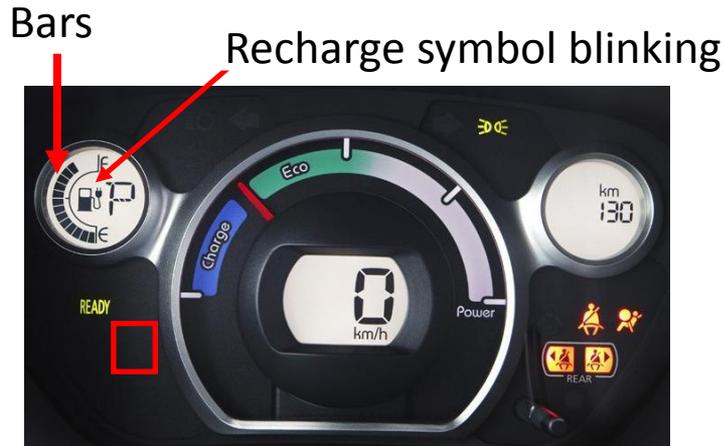
But “*at about half of the journey, I saw that **the last bars of the gauge were disappearing in a rather fast way***” Still 2-3 km

⇒ “Less and less sure to be able to come back home” => **actions to economize energy** : eco-driving (“*I tried, with the econometer not to pass the vertical position of the needle, you see, to keep in the eco zone*”), cut consuming systems

⇒ Anticipators would have come back home already

*When I parked, there were **still two bars** (on the gauge)... I thought: well ok let’s go, with the foot a bit off, it should be possible to come back home ...*

Manoeuvre to go out of the parking place => **one bar remaining** : “*I was **far less confident**, it was far less comfortable*”. But still he decides to try to come back home, slowly



## Mental activity to anticipate the journey :

*“I try also to imagine progressively, to remember a bit the **topology of the journey**, to know more particularly if I had to go up or down hills, where I could **gain** a bit of energy, and I even try to see globally the altitude between this point here and my place”.*

## Ambiguity of the instrument :

Later on, the **symbol** (of the electric plug) is blinking *“there is a problem, but I don’t know what I can do... I understand that I am now in the reserve but **the reserve it is how many kilometres?** I don’t know at all, it’s a bit adventurous...it is **stressful**.....”*



=> Informs the design for adapted reflexive instruments (level of autonomy, ecodriving) and anticipative instruments

## Conclusion

User Phenomenological Experience => First person perspective on specific situations ; holistic perspective : not only cognition oriented

The meaning and values attached to the present situation by the subject

From several subjective perspectives to generalisation

UX not only for games, consumer technology (phones...)

Worthy for any situations (work, driving, services...) where this holistic subjective perspective is useful

Cognitive, sensorial and emotional experience for designing systems or work situations and improving psychological comfort and efficiency