The Role of Cognitive Ergonomics in Interaction Design, Addressing Advances in HCI - Conclusions

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Intelligence, Ubiquity, Ecology, Creativity and Interaction Design

- predictability, intentions, feedback, usage in context, technology as asset
- formal engineering & specification becomes exploration, emergent design, concepting, tools and little theories, integration of design and use

Megan Patterson et al.

A Web-Based Human Computer Interaction Audit Tool To Encourage Collaborative Cognitive Ergonomics Within Interaction Design

- Suggestion of an interactive HCI checklist for key HCI principles.
- Checklists might be a “simple” means but in many domains they are effective.

Josep M. Junoy Domènech

Cognitive Ergonomics topics observed at CaixaBank

- End users – usability, user experience
- Business users / stakeholders – establish the application requirements
- Include end-users via focus groups and user testing

Eliezer Kantorowicz

Two Step User Interface Design

- separation of business logic and user interface code (cf. Josep)
- UI is developed in two steps and only after the business interface, the UI is made concrete
- Support for division of work: only designers of the user interface need to have knowledge/skills in CE
- Better integration of Software Engineering and CE to support the users
- approach could also be useful to support end-user development (cf. Anke)

Anke Dittmar

Support for Nested Design Spaces & End-User Designers

- Refinement of Persona approach to be more suitable for end-user design tools which need the consideration of nested design spaces
- The concept of nested design spaces may help to understand that, in many situations (not only with end-user design tools), the use of interactive systems has wider effects (cf. social acceptance by Le Bail et al.)
- Two-level personas help to construct & consider complex scenarios and support participatory and co-design.
- Contribution of Software Engineering (domain-specific model-based design) to support the development of end-user design tools
Cloe Le Bail et al.

A methodological approach to the conceptualization of a socio-technical system: a smart and collaborative neighbourhood

- The role of CE in conceptual design of socio-technical systems that require future interactive systems and services
- CE helps to anticipate / create usage scenarios that correspond to user needs and requirements and social acceptability
- A case study about smart city & co-housing
- Social acceptance is defined as: social factors related to individual norms and values and social relationships that influence the acceptance of an innovation - this is more than “classical” user experience in interaction design

Marie-Luce Bourguet

Designing More Robust Ubiquitous Systems

- Considers issues of uncertainty & robustness of interaction in ubiquitous systems from the user’s perspective
- Common error handling strategies of users are not necessarily successful with ubiquitous systems
- It may be a dramatic change for users that they not only consciously produce inputs but also unconsciously
- Suggestion: design systems in a way that users are supported in creating mental models of the ubiquitous systems (as in 80’s-90’s cognitive modeling) etc. but now related to new technology
- As in the introduction slides: “Evolution” of HCI paradigms all still have some justification and work proves still valuable must continue.

Workshop Objectives

Ideas, thoughts, visions, experiences on the role of Cognitive Ergonomics in Interaction Design & HCI

1. Conceptual, social and exploratory design approaches
2. Co-design and co-creation
3. Supporting User-Centered Design
4. Creativity in Cognitive Ergonomics
5. Unintended and implicit interaction
6. Raise context-awareness in design
7. Understanding artefact use in context
8. End user development
9. Training and experimentation facilities, teaching approaches...

Issues addressed in the papers

- De Haan: 1., 4., 5., 6., 7.
- Patterson et al.: 3., 6.
- Kantorowitz: see above
- Domènech: practical experiences
- Dittmar: 2., 3., 4., 6., 7., 8.
- Bourguet: 3., 5., 6., 7.

- Discuss everything?
- Discuss certain aspects?
- Discuss something new aspects?