# Using Theoretical Ideas to Stimulate Creativity and Participation in Design

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# Outline

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  - Furniture design
- Goal and working hypothesis
- Conceptual framework for analysis and design
- Two inspirational ideas
  - Relflection-in-action; Generalized Other
- Software realization
  - Janus; FLE-Assistant
- Open issues and summary
- Comparison to themes discussed at the workshop

# Illustrative example

- Design inspired by orange peels falling to the ground
- "Peel chair" by Olav Eldøy, produced by Stokke (2002)
- Combining creativity and utilitarian design (comfort)

# Goal and working hypothesis

- Goal
  - Inspirations that originate outside design fields are used to ground the unfamiliar (artifact) in something familiar (nature, context, previously designed artifacts, etc.)
  - Incorporating inspirations as features (usable or non usable) in the artifact during construction, so that the inspirations can be *communicated* to end users via product
- Working hypothesis
  - In a similar manner, *theoretical ideas* might serve as inspiration for designers of software applications
  - Exploiting similarities and differences of physical artifacts (furniture) and computational artifacts (applications)

# Conceptual frameworks

- A social-cultural approach to retrospective *analysis* in order to study the developmental trajectory of artifacts
  - Extrinsic motivation
  - Appropriation (Wertsch)
  - Externalization (Vygotsky)
- A corresponding transformational approach to theory-informed *design* of applications to guide designers
  - Selection
  - Appropriation
  - Translation

# Transformational approach to design

- *Selecting* a theoretical idea from a field of research one wishes to explore, understand and communicate, stimulated by extrinsic motivation for accomplishing it;
- *Appropriating* the idea so that its basic elements stand out in a contemporary design context;
- *Translating* the elements into a user interface design as an act of externalization .

# Two inspirational ideas communicated by concrete designs

- Originating in American Pragmatist tradition
  - Pierce, James, Dewey, Mead, Schön,
- Two ideas I have been working with for long time
  - *Reflection-in-action*
    - D.A. Schön
  - *Generalized Other*
    - G.H. Mead

# Software realization

- Janus
- FLE Assistant

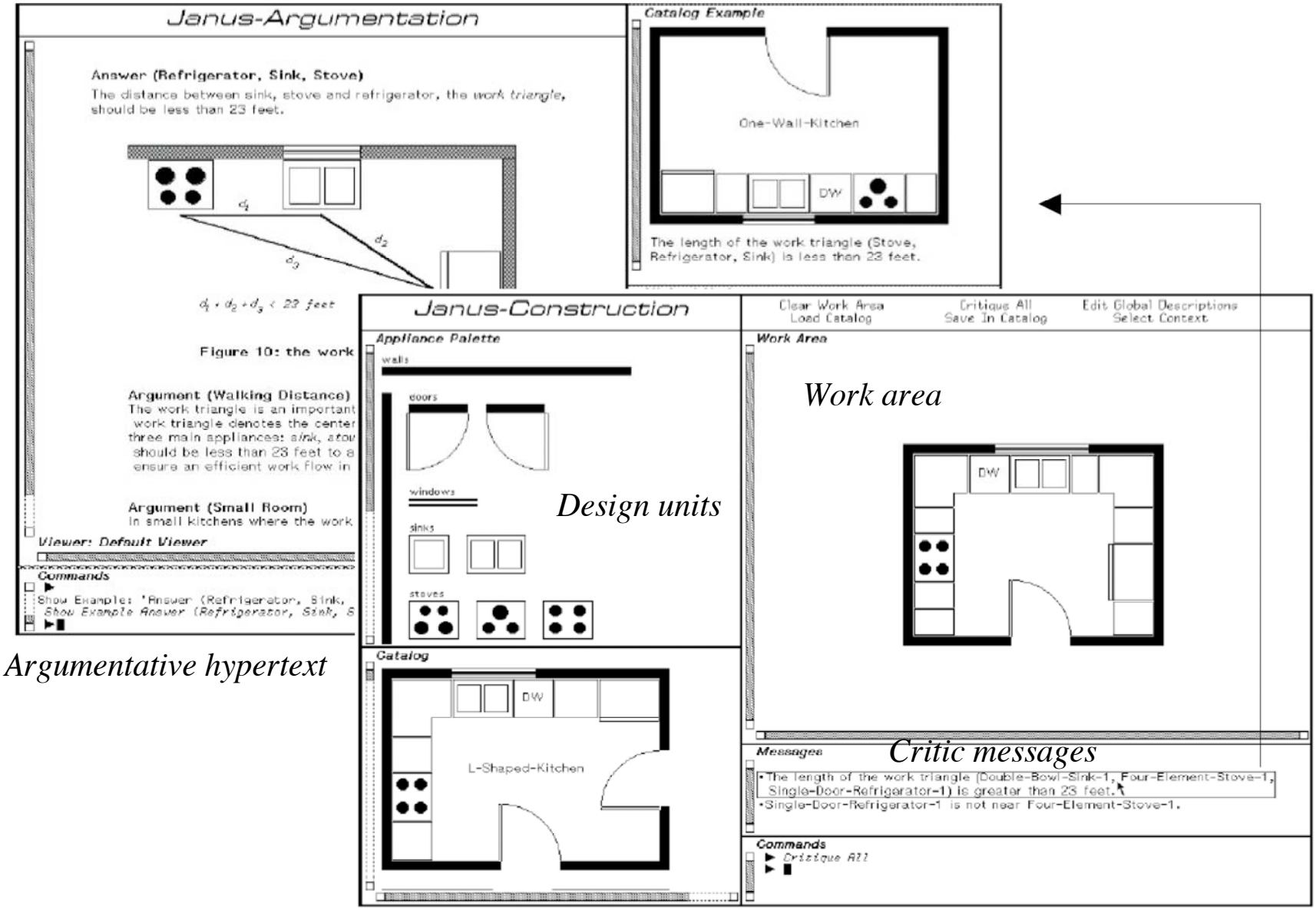
# Transformation map

| Sub-processes | Janus | FLE-Assistant |
|---|---|---|
| Selection (*theoretical idea*) | Reflection-in-action (D.A. Schön) | 'Generalized other' (G.H. Mead) |
| Appropriation (*break up*) | Action, reflection, action-present, back-talk | Game, roles, rules, roles-organized-according-to-rules |
| Translation (*GUI components*) | Work area, design units, critic messages argumentative hypertext | Participation measure, statistics, aggregated performance conceptual awareness, advice |

User interface

# Janus

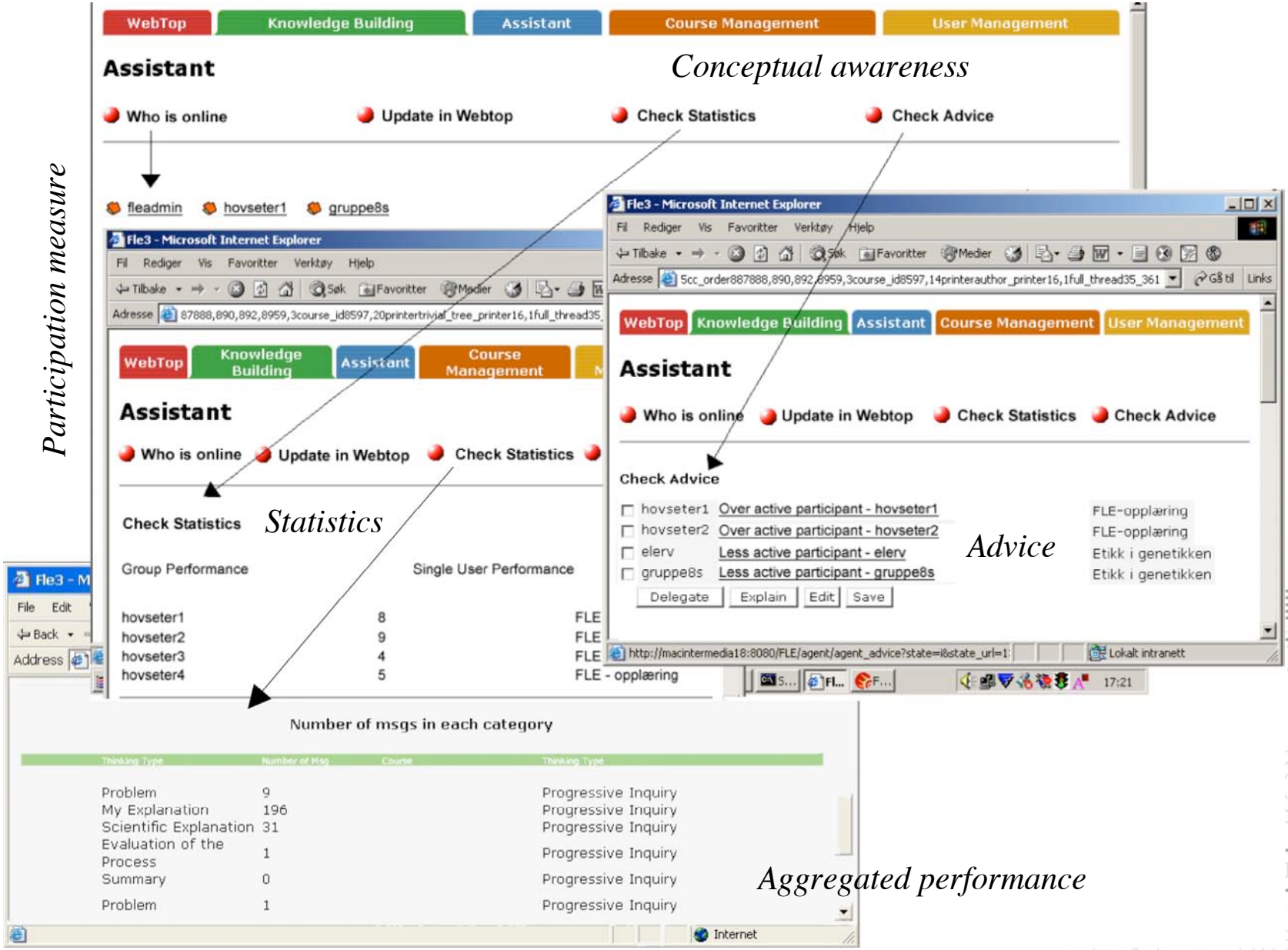





*Argumentative hypertext*

# FLE Assistant





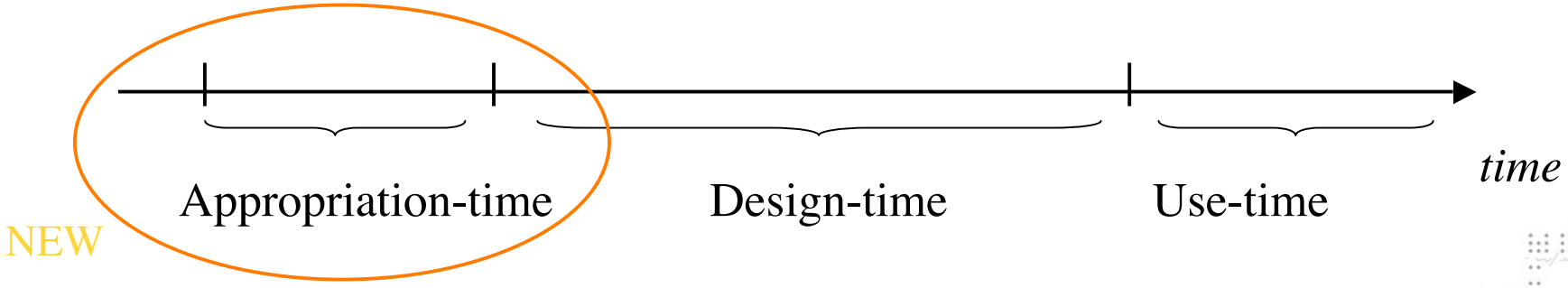
# Open issues

- It is not enough for a designer to say one has been inspired by a certain idea; it is also necessary to identify relevant success criteria?
- To what extent can one say an idea has been successfully incorporated in a specific design?
- How to distinguish good design from poor designs, along the way it is done in arts and design (e.g. master pieces vs. kitsch design)
- (Kitsch def.: an inferior copy of an existing style)

# Summary and conclusions

- Re: contributions to a science of design
  - A science of design should be about *processes of designing*
    - Methods, techniques, concepts, tools, and examples
  - The creative act has to integrated with the design process (as it have with other design disciplines)
  - Integration of theory-based design and participatory design to form *theory-informed collaborative design*
  - A socio-cultural approach to retrospective analysis
  - Concrete examples to illustrate the approach

# Themes from the workshop (1): Design process of ICT




- Expressed in simple (scientific) terms
- $At_1$ --> Dt --> Ut --> $At_2$
- Could be followed by EUD and Meta-design ($Dt_2$)

# Themes from the workshop (2): Design rationale cost/benefit

- Previous studies have shown deficiencies of design rationale; i.e. the cost of creating it is not paid back to those who put in the work
- Think about design rationale integration with a product as “appropriation work”
- Then benefits for designers become more visible (extrinsic motivation; seeing ones inspirational idea be expressed in durable form, etc.)