Place, Space, & Context

(And a lot things you weren't expecting)

Stacy Branham
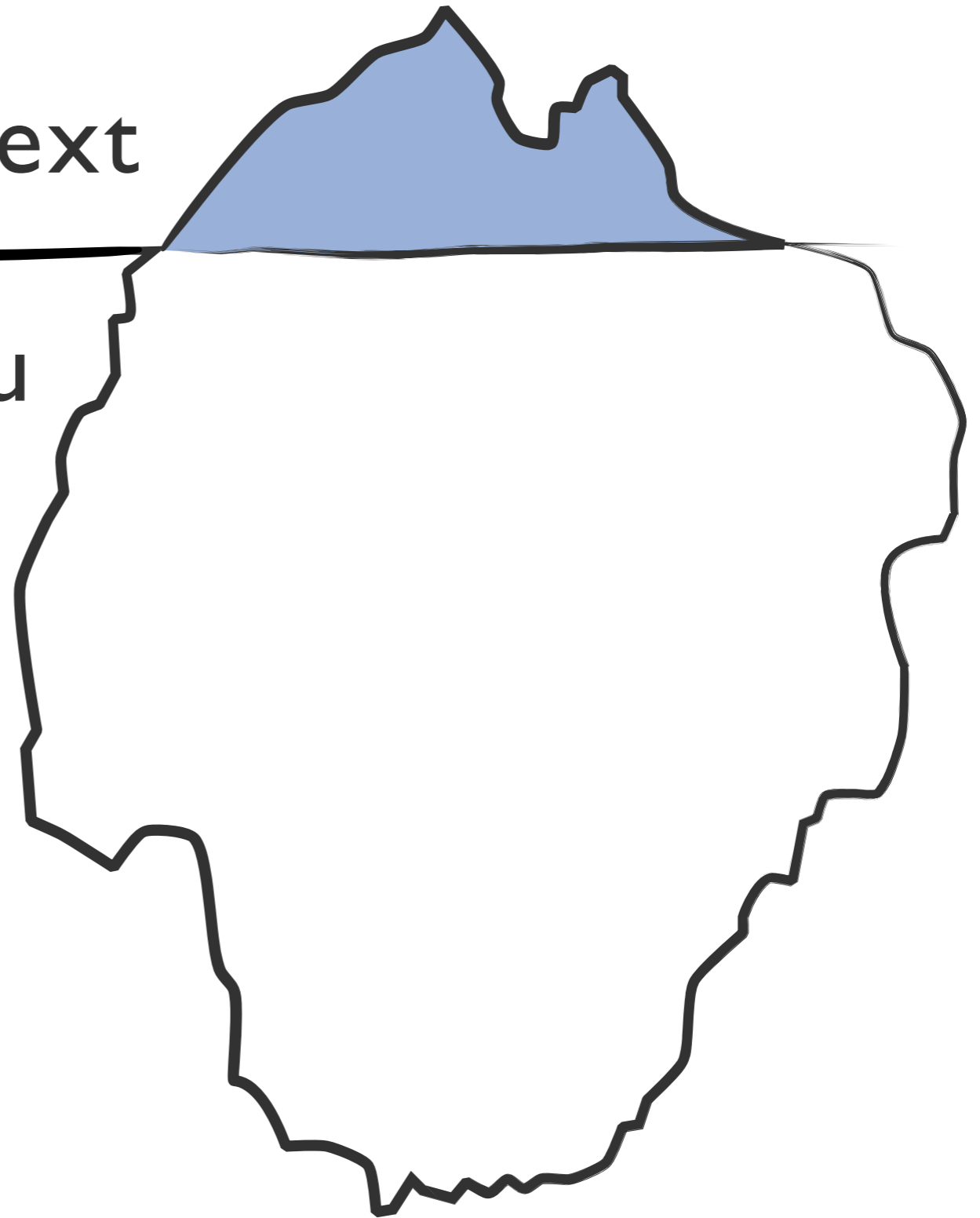
- # Introduction

- # Web Privacy & Security

- # Ubiquitous Computing

- # Privacy and Trust

SOME PERSPECTIVE

- "place" & "context" are *not* the issue, a new, Postmodernist philosophy of interaction *is*

- most work encountered so far in the course has been rooted in an opposing Modernist philosophy

- presents two interpreted challenges to the usable security community

- "Space" is not "place"

- many systems use spatial metaphors

- features of space:

    - relational orientation and reciprocity

    - proximity and action

    - partitioning

    - presence and awareness

"The implied rationale is that if we design collaborative systems around notions of space which mimic the spatial organisation of the real world, then we can support the emergent patterns of human behavior and interaction which our everyday actions in the physical world exhibit."

Harrison, S. and Dourish, P. (1996). Re-Place-ing Space: The Roles of Place and Space in Collaborative Systems. In Proceedings of the 1996 ACM conference on Computer Supported Cooperative Work 67-76.

SPACE & PLACE, SO FAR
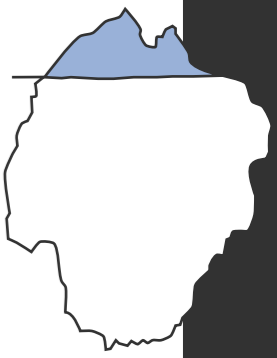
- "space is the opportunity; place is the understood reality"

- place is socially-(re)constructed

  - adaption / appropriation (<u>link</u>)

  - cultural phenomena (<u>link</u>)

- place is not designed *in*, but designed *for*

"The identification of 'placeness' as a cultural phenomenon—or, at least, one rooted in human social action—results in a critical implication for the design of collaborative systems and technologies. It shifts our focus away from the technology of place, since that technology—doors, walls, and spatial distance—only gives rise to 'placeness' through the way in which it is given social meaning."

Harrison, S. and Dourish, P. (1996). Re-Place-ing Space: The Roles of Place and Space in Collaborative Systems. In Proceedings of the 1996 ACM conference on Computer Supported Cooperative Work 67-76.

SPACE & PLACE, RECONFIGURED
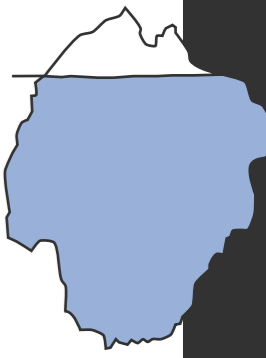
- Artificial Intelligence

- apparent complexity of human behavior is a reflection of the complexity of the environment

- computers & brains are symbol systems

- *planning* can be modeled with computers

Simon, H. A. (1996). The Sciences of the Artificial. MIT Press.

SIMON, SUCHMAN
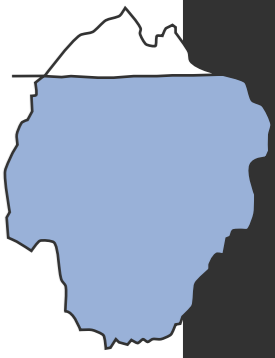
- "plans" are not "situated actions"
- SI is (re)constructed *in situ*
  - adaptation / appropriation
- plans are merely references

plan : situated action *as*
space : place *as*
security mechanism : actual usage

Suchman, L. A. (2007). Human-machine reconfigurations: Plans and situated actions. Cambridge Univ Pr.

SIMON, SUCHMAN
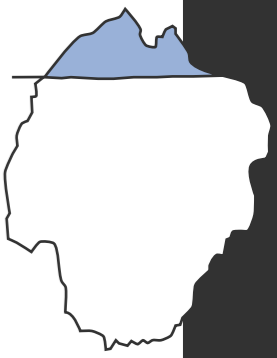
- most systems focus on encoding context

- assumptions about context:

  - it is a form a information

  - it is delineable

  - it is stable

  - it can be separated from activity

"The idea that context consists of a set of features of the environment surrounding generic activities, and that these features can be encoded and made available to a software system alongside an encoding of the activity itself, is a common assumption in many systems."

"The kind of thing that can be modeled, using the four principles above, is not the kind of thing that context is"

Dourish, P. (2001). Seeking a foundation for context-aware computing.a*Human-Computer Interaction, 16*(2), 229–241.
Dourish, P. (2001). *Where the Action Is: The Foundations of Embodied Interaction.* Mit Pr.
Dourish, P. (2004). What we talk about when we talk about context. *Personal and ubiquitous computing, 8*(1), 19–30.
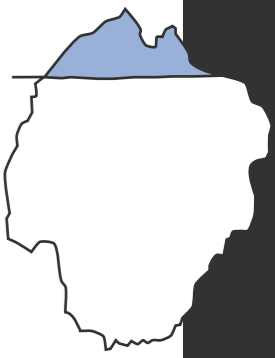
- context cannot be encoded

- alternative view of context:

  - it is a relational property

  - its scope is defined dynamically

  - it is an occasioned property

  - it arises from the activity

"context is an emergent property" that is "continually negotiated and redefined." Furthermore, "people often find ways of using technology that are unexpected and unanticipated. ...Even when the general patterns of technology use do conform to expectations, the meaning of the technology for those who use it depends on how generic features are particularized, how conventions emerge, and so on."

Dourish, P. (2001). Seeking a foundation for context-aware computing.aHuman-Computer Interaction, 16(2), 229–241.
Dourish, P. (2001). Where the Action Is: The Foundations of Embodied Interaction. Mit Pr.
Dourish, P. (2004). What we talk about when we talk about context. Personal and ubiquitous computing, 8(1), 19–30.

CONTEXT, RECONFIGURED

- Modernism on the heels of the Enlightenment

  - rationality

  - objectivity

  - positivism (abstract, quantitative, etc.)

- Postmodernism reaction to modernism

    - rejects notion of objective rationality

    - phenomenology (subjective, qualitative, embedded)
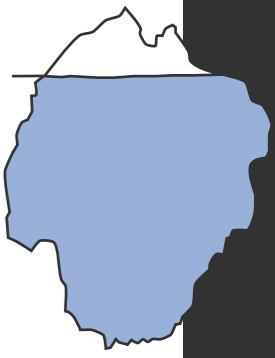
- philosophy of human experience
  - Husserl, out of concern "crisis"
  - social action depends on agency and interpretation
  - action precedes theory
  - Heidegger ditched dualism
  - Shutz added intersubjectivity

Dourish, P. (2004). What we talk about when we talk about context. Personal and ubiquitous computing, 8(1), 19–30.

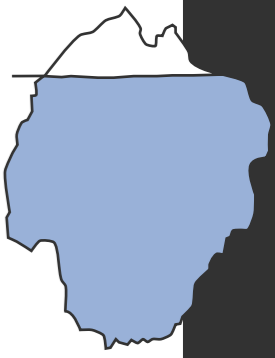(POST)MODERNISM, PHENOM.

Place & Space

Context
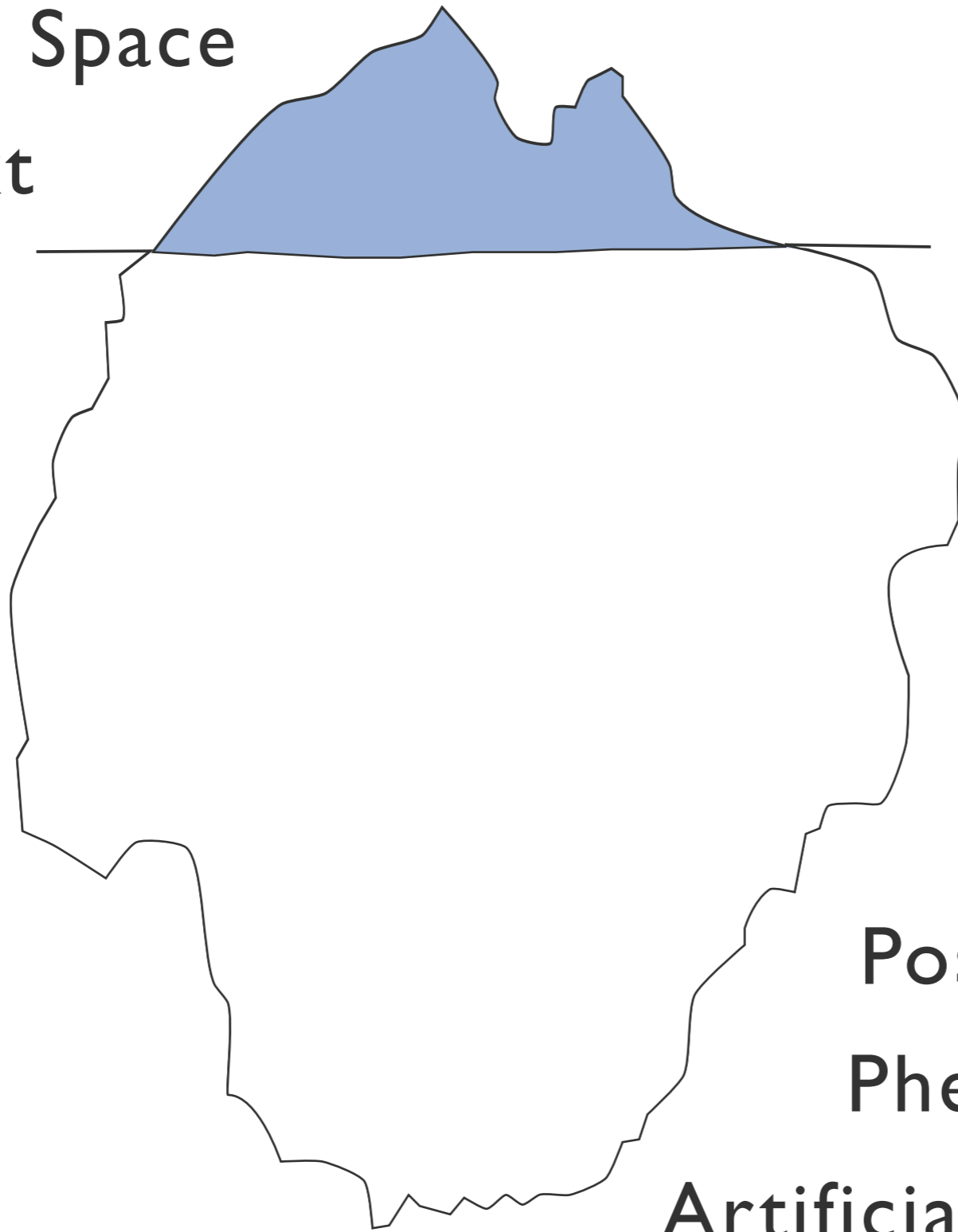
Modernism

Positivism

Postmodernism

Phenomenology

Artificial Intelligence

Plans & Situated Actions

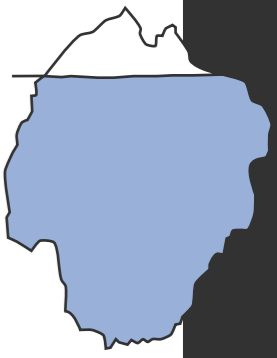| Modernist	Refs.	Postmodernist
environmental complexity	Harrison&Dourish (1996), p2; Simon (1969), p52, 53	human/social complexity
model construction, meaning-embedding	Suchman (1987), p177; DourishA p239, 240	social construction / meaning-making
enabling machines	Suchman (1987), p43	enabling people
a priori reasoning precedes theory	Suchman (1987), p70, 177, 179; Dourish (2001), p235, 237;	contextualized inquiry precedes theory
pre- / machine determined behavior	Suchman (1987), p70, 72, Harrison&Dourish (1996) p4; Simon (1969), p21, 23	situationally / human determined behavior

(P O S T) M O D E R N I S T   S U M M A R Y

Dourish, P. (2001). Seeking a foundation for context-aware computing. Human-Computer Interaction, 16(2), 229–241.

Harrison, S. and Dourish, P. (1996). Re-Place-ing Space: The Roles of Place and Space in Collaborative Systems. In Proceedings of the 1996 ACM conference on Computer Supported Cooperative Work 67-76.

Simon, H. A. (1996). The Sciences of the Artificial. MIT Press.

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Modernist	Postmodernist

Wrong

Right

1

2
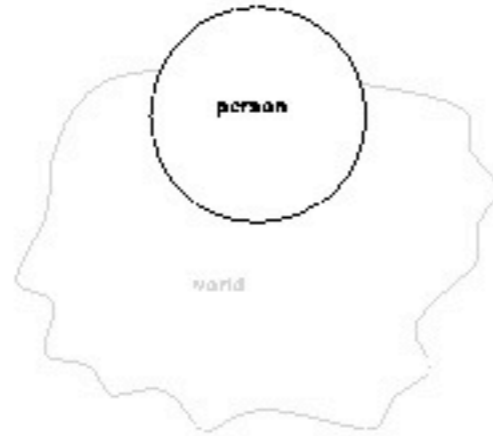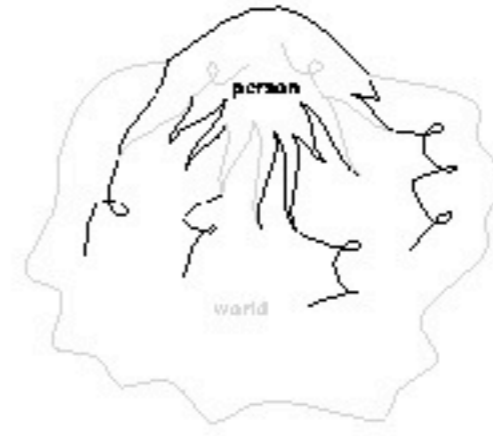
Current Computing Technology
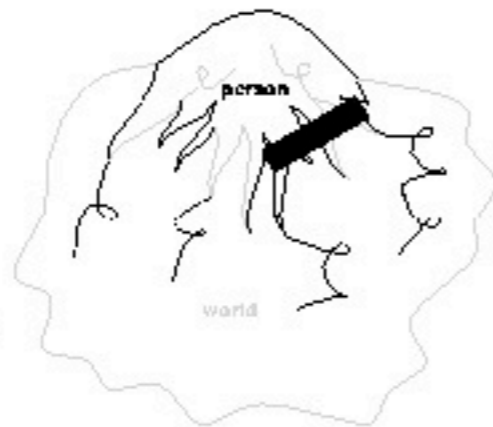
Ubiquitous Computing Technology

Thursday, November 5, 2009

- true story: doctor & patient at checkout

- hypothetical: PDA that allows doc to show medical records

- Modernism: use *static* elements of context (place, userid), and *pre-determined* reasoning constructs to grant access

- Postmodernism: context is *constructed* moment-by-moment, meaning that critical contextual elements and the way users reason about them vary

- "place" & "context" are *not* the issue, a new, Postmodernist philosophy of interaction *is*

- most work encountered so far in the course has been rooted in an opposing Modernist philosophy

- presents two interpreted challenges to the usable security community

Modernist	Examples
environmental complexity	**Systems:** Grey, Bardram's hospital apps, PeopleFinder, Privacy Bird **Frameworks**: end-to-end enterprise security frameworks, Aura, semantic web & description logics, even Dey & Abowd
model construction, meaning-embedding	
enabling machines	
a priori reasoning precedes theory	
pre- / machine determined behavior	

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- Modernist: place, space, and context are the rich environmental resources we can model *a priori* and sample *in situ* in order to support semi-intelligent ubiquitous computation

- Postmodernist: place, space, and context demonstrate the complexity of human-constructed behavior *in situ* that cannot be modeled *a priori*, but must be acknowledged in design

- to side with the camp you identify with now

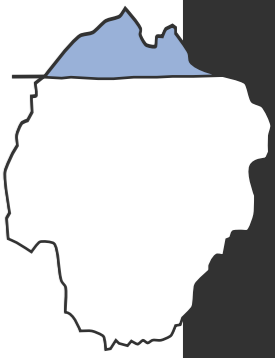- to investigate, deeply, the opposing side, most of all

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- Which camp do you belong to? *(or have the camps been incorrectly defined?)*

- What impact does acknowledging your camp have? On design? On evaluation? Others?

● WWMWD?
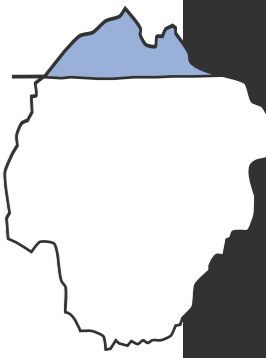
2nd CfP: IUI 2010 Workshop on Semantic Models for Adaptive Interactive Systems — Inbox

Delete Junk Reply Reply All Forward Print To Do

From: Lukosch, Stephan <S.G.Lukosch@TUDELFT.NL>
Subject: **2nd CfP: IUI 2010 Workshop on Semantic Models for Adaptive Interactive Systems**
Date: November 4, 2009 4:09:23 AM EST
To: CHI-ANNOUNCEMENTS@LISTSERV.ACM.ORG
Reply-To: Lukosch, Stephan <S.G.Lukosch@TUDELFT.NL>

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IUI 2010 Workshop on
Semantic Models for Adaptive Interactive Systems (SEMAIS 2010)

February 7, 2010, Hong Kong, China

Submission deadline: December 1, 2009
http://www.semais.org

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WORKSHOP GOALS
Semantic technologies and, in particular, ontologies as formal, shareable representations of a domain of interest play an increasingly important role also for the design and development of user interfaces and more generally interactive systems. Semantic models can serve a number of different purposes in this context. They can be used as application or interface models in model-driven design and generation of user interfaces. Semantic Models can also be applied for representing the various kinds of context information for context-aware and adaptive systems.

In particular, they have promise to provide a technique for representing external physical context factors such as location, time or technical parameters and 'internal' context such as user interest profiles or interaction context in a consistent, generalized manner. Owing to these properties, semantic models can also contribute to bridging gaps, e.g., between user models, context-aware interfaces and model-driven UI generation. There is, therefore, a considerable potential for using semantic models as a basis for adaptive interactive systems. The range of potential adaptations is wide comprising, for example, context- and user-dependent recommendations, interactive assistance when performing application-specific tasks, adaptation of the application functionality, or adaptive retrieval support. Furthermore, a variety of reasoning and machine learning techniques exist, that can be employed to achieve adaptive system behavior.

The workshop aims at sharing experiences and identifying issues for future research. Further goals are the development of a conceptual framework for interaction and adaptation based on semantic models, discussing the potential for building and sharing ontologies for adaptive UIs, as well as identifying evaluation methods and criteria.

TOPICS OF INTEREST
- Representing user models, domain knowledge and interaction context by means of semantic models
- Cognitively or neurally founded reasoning techniques such as activation spreading for semantic user models
- Context-aware interaction based on semantic models
- Adaptation strategies and techniques based on semantic models for e.g. recommender systems, adaptive retrieval, collaboration support systems and
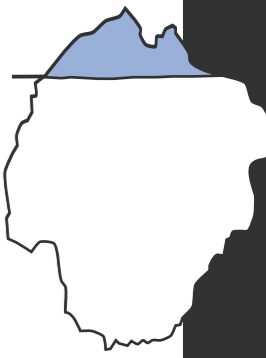
DISCUSSION

Extra slides

- What does this mean for social science theory?

This is a significant shift in orientation towards ethnography in design, which has until now explored a foundational concern with studies of *situated action* [33]. In a design context, ethnography has largely focused on detailed empirical studies of what people do and how they organize action and interaction in particular settings of relevance to design. In contrast, the dominant concern for new approaches is to engage designers instead in a critical dialogue based on *cultural interpretations* of everyday settings, activities, and artefacts.

Dead objects, self-reflecting humans

The hermeneutic-phenomenological argument takes its point of departure in a critical difference between natural and social sciences: the former studies physical objects while the latter studies self-reflecting humans and must therefore take account of changes in the interpretations of the objects of study. Stated in another way, in social science, the object is a subject.

DISCUSSION
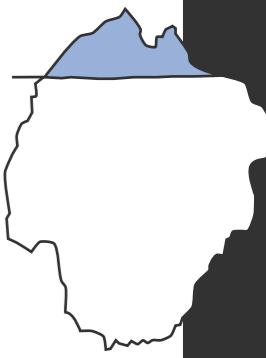
- CS@VT faculty

- M. Arch

- PARC

- design, meaning-making

"I am currently conducting research on the meaning of cheating in games, the relationship of art and computer science, the role of space and place in ICT -- and the the way that ICT changes space and place, and creativity in design."
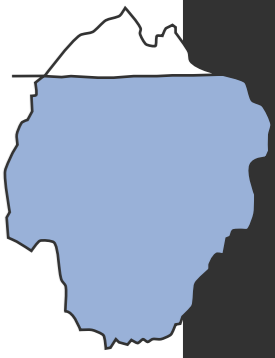
- "The internet is a place where people who don't have lives go to read about people who do."

- "Do I think that [Herbert Simon] is a bad person? No. Do I think that greatly he mislead a heck of a lot of people? You bet!"
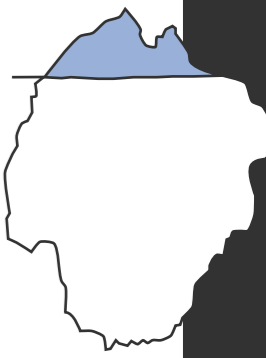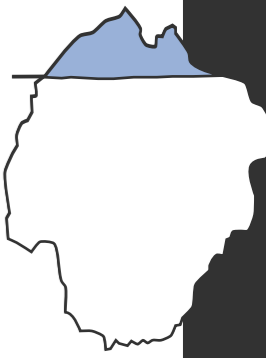
- UC, Irvine

- EuroPARC, PhD, Apple, PARC

"My research lies at the intersection of computer science and social science, with a particular interest in ubiquitous and mobile computing and the practices surrounding new media."
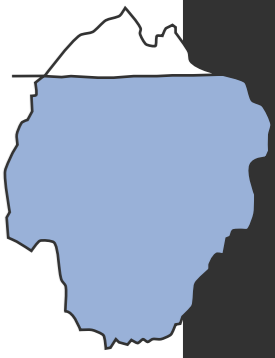
- in his graduate days at EuroPARC, romantic rival with Minneman for attentions of Victoria Bellotti

Wittgenstein's aphorism about games:

> What is common to them all? - Don't say: "There must be something common, or they would not be called 'games'" - but look and see whether there is anything common to all. - For if you look at them you will not see something that is common to all, but similarities, relationships, and a whole series of them at that... To repeat: don't think, but look!

Writing about these developments in the context of global warming, Bruno Latour noted that "dangerous extremists are using the very same argument of social construction to destroy hard-won evidence that could save our lives. Was I wrong to participate in the invention of this field known as science studies? Is it enough to say that we did not really mean what we meant?"

2 observation ⟷ theory/design **1**