

The background of the slide is a soft-focus image of numerous small flowers. The flowers are primarily orange and blue, with some pinkish-orange ones scattered throughout. They are set against a light, warm-toned background, creating a bokeh effect. The overall aesthetic is gentle and organic.

Embodiment

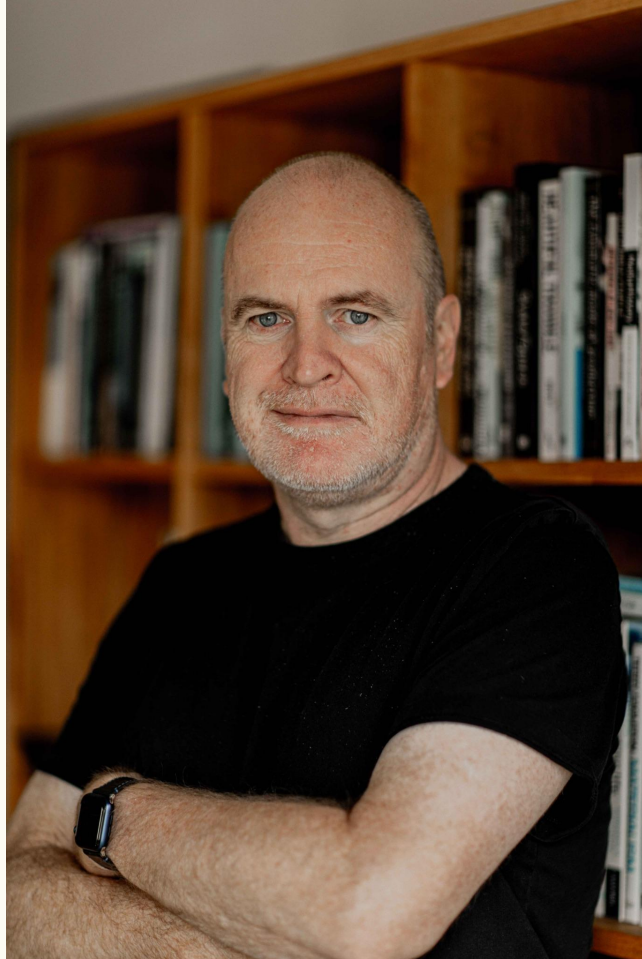
Tara, Claudio, Miriam

Agenda.

1. Where the Action Is, Dourish, 2001
2. Mind in Motion, Tversky, 2019
3. An Activity
4. Further Discussion



“Where the Action Is”



Paul Dourish

- Professor in the **Department of Informatics at UC Irvine**
- Research draws from **anthropology, STS** (Science and Technology Studies), and other **humanistic social sciences** seeks to seek of digital practices emerge and evolve.

Other:

- Enjoys writing about zombies, spacecraft, science fiction, parole officers, bike messengers, indigenous Australians...[see his website for the list]

“Much of the work revolves around what we might call "data imaginaries" -- data and technologies not just as things in the world, but as objects that live in the cultural imagination.” <https://www.dourish.com>

Where the Action Is: “Being-in-the-World”: **Embodied Interaction (2001)**

Interaction models have treated interaction as symbolic.

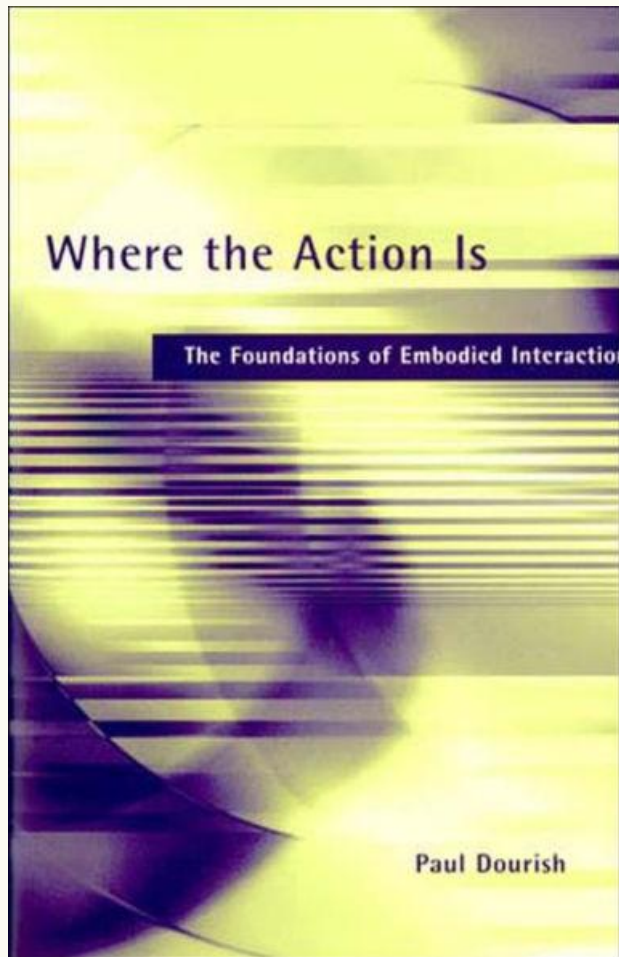
User inputs data → computer processes it → output

Where the Action Is: “Being-in-the-World”: Embodied Interaction (2001)

Interaction models have treated interaction as symbolic.

User inputs data → computer processes it → output

This model misses, what Dourish argues is the most important part, the user's ***embodied experience*** of the interaction.



Dourish's Embodiment

“Embodied phenomena are those that by their very nature occur in real time and real space” (pg 101).

Embodiment is not just physical presence, but **participation** in the world.

What does this mean?

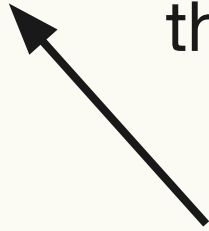


We don't just observe
the world from the outside,

What does this mean?



We don't just observe
the world from the outside,



we are immersed in it.

You are putting a cake 🍰 in the oven...

“Hey Siri set a timer for 20 minutes”

You are putting a cake 🍰 in the oven...

“Hey Siri set a timer for 20 minutes”

Did you *consciously* access a technological command system,
or talk how you normally would in a real-world context?

Participation in the world.

We inhabit **conversations, actions, experiences** as embodied phenomena in the everyday world.

We do all these things with **embodied agency** often based on **intuition** and where in time and space we are **situated**.

Rooted in Phenomenology

(The study of lived experience)

Philosophers Husserl, Heidegger, Schutz, and Merleau-Ponty emphasize:

- **Lived experiences in the body** are essential to understanding how we create meaning and take action.
- Meaning arises **through our interactions within the world**, not from detached observation.

Take Away from Phenomenology: “embodiment is about the relationship between action and meaning.”

A working definition

Understanding of embodiment happening in real space, and its consequences...

“We can now say:

Embodiment is the property of our engagement with the world that allows us to make it meaningful.

Similarly, then, we can say:

Embodied Interaction is the creation, manipulation, and sharing of meaning through engaged interaction with artifacts”

(pp. 126).

Implications for HCl?

What do you think?

Discuss with your partners:

What would it look like for design principles to reflect embodied participation? Do you think your laptop could be improved in anyway?

Think about how this could be a positive force, but could it also introduce consequences?



“Mind in Motion”

An Opening Activity

Explain how to get from
the Frary stage to the
Expo station.

Discuss: The Use of Gestures

Explain how to get from the Frary stage to the Expo station.

- Reflect on your use of gesturing.
 - Did you gesture?
 - How did you use your hands?
 - How did that help you in your explanation?

About **Barbara Tversky**

- Studied cognitive psychology at the University of Michigan.
- Currently an Emerita Professor of Psychology at Stanford and a Professor of Psychology at Columbia Teachers College.
- Her work is highly interdisciplinary, spanning memory, language, spatial cognition, creativity, design, and gesture.
- She investigates how we use the world, our actions, and our creations to remember, think, create, and communicate.



Mind in Motion: An Overview

- Gestures are the basis of communication
 - Early forms of communication in development
 - Points to actions describing ideas
 - Does not have formal grammatical rules, but still aid in communication between multiple participants where intentions are understood

Mind in Motion: An Overview

- Types of gestures
 - Emblems: frozen, word-like gestures such as   
 - Beats: rhythmic gestures that accompany speech
 - Deictic: they point, thereby bringing in the world
 - Iconic: they depict, showing properties
 - Metaphoric: they depict “nonliteral properties or abstract concepts”

Mind in Motion: An Overview

- Aid understanding and recall when thinking about complex ideas
- Strengthen communication when teaching and learning
- Gestures “change thought” – our own and of others

Motivating the Activity

“Environments are inherently spatial, but they are **abstracted** both in the mind and on the page—into the paths and places of **sketch maps**. Dots and lines. Would people gesture to represent and remember descriptions of environments, and **would their gestures form sketch maps?**” (Tversky, *Mind in Motion*, pp 125–126)

- And communicate!

Motivating the Activity

Dourish drawing from Psychology, “An affordance is a property of the environment that affords action to appropriately equipped organism” [...] the “three-way **relationship between the environment, the organism, and an activity.**” (pp 118).

Affordance arises from what a skilled organism is able to do within a specific environment as part of a meaningful activity—it is about action in context.

Affordance: User + Environment/Object + Action

Activity

Partner 1: Describe an environment & action to your partner using gestures to emphasize details.

Example: cooking in your home's kitchen, crossing a complicated intersection/street

Partner 2: Use provided materials to model the described action and environment, as a "sketch"

- With attention to detail!!!
- Feel free to use any combination of Popsicle Sticks, Pipe Cleaners, Construction Paper, and Pen/Paper
- You can draw if you'd like, but we encourage also using the other materials!

Discussion

- What affordances were created by the specific environment, organism, and activity used in your scenario?
- What were you able to effectively communicate using language + gestures?
- Did using materials to “sketch” the scene have any limitations in capturing details or actions?
- Did you notice a mismatch between the built “sketch map” and the description? What might have caused this?

Discussion: How does embodiment connect to...

Suchman, 1987

- Actions are situated—plans adapt as context unfolds.
- Actions are shaped by the context and environment we are in.

Haraway, 1988

- Situated knowledge: feminist objectivity, an epistemology of positioning
- Feminist embodiment is about the self existing as “nodes in fields”

Norman, 1993

- The ways in which we represent information influence and enhance how we think, solve problems, and communicate
- Representations are cultural inventions and conventions created by humans

Sharing Out + Closing Thoughts

- What connections did you draw between the embodiment texts and previous readings?
- How might HCI researchers and designers consider the contexts in which their technologies and systems take place?
 - What challenges or opportunities arise when designing with this context in mind?



Thank You!