

Week 8 COMS30029 – Reflections

Reflecting on notions of *interaction* considering HCI Theory

Today we will reflect on the various theories of human-computer interaction that we have covered in the unit.

We will do this using the key notions and concepts of *interaction* as outlined by Hornbaek & Oulasvirta (2017) in their paper “What is interaction?”. **Note: You are expected to have read at least the first 6 pages of that paper**

Exercise 1

In your group, refer back to Table 1 from (Hornbaek & Oulasvirta, 2017), go over the table one row at a time, and discuss – now that we have covered a range of HCI theories in some detail – to what extent do the notions outlined in each row make sense to you, and to what theory or theories they make you think of?

Concept	View of interaction	Key phenomena and constructs	Good interaction	Example support for evaluation and design
Dialogue	a cyclic process of communication acts and their interpretations	mappings between UI and intentions; feedback from the UI; turn taking	understandable; simple, natural; direct	methods/concepts for guessability, feedback, mapping; walkthroughs
Transmission	a sender sending a message over a noisy channel	messages (bits); sender and receiver; noisy channels	maximum throughput of information	metrics and models of user performance
Tool use	a human that uses tools to manipulate and act in the world	mediation by tools; directness of acting in the world; activity as a unit of analysis	useful and transparent tools; amplification of human capabilities	compatibility in instrumental interaction; break down analysis
Optimal behavior	adapting behavior to goals, task, UI, and capabilities	rationality; constraints; preferences; utility; strategies	improves or reaches maximum or satisfactory utility	models of choice, foraging, and adaptation
Embodiment	acting and being in situations of a material and social world	intentionality; context; coupling	provides resources for and supports fluent participation in the world	studies in the wild; thick description
Experience	an ongoing stream of expectations, feelings, memories	non-utilitarian quality; expectations; emotion	satisfies psychological needs; motivating	metrics of user experience; experience design methods
Control	interactive minimization of error against some reference	feedforward; feedback; reference; system; dynamics	rapid and stable convergence to target state	executable simulations of interactive control tasks

Table 1. Overview of some key concepts of interaction in HCI literature. The columns sum up the core view of what interaction is, the key phenomena that the view has helped see and their associated constructs, the notion of good interaction that follows from the view, and the key techniques and methods to help evaluating and designing user interfaces.

Exercise 2: In this HCI Theory unit we covered a lot of theory! Here is a summary:

- First Wave
 - o KLM-GOMS
 - o Fitts' Law
 - o Direct Manipulation
 - o Gulf of Execution & Evaluation
- Second Wave
 - o Affordances
 - o Phenomenology
 - o Distributed Cognition

- o Activity Theory
 - o Situated Action
- Third Wave
 - o Flow
 - o Self-Determination Theory
 - o Disability Studies
 - o Health and wellbeing
- Fourth (?) Wave
 - o Computational Interaction

Consider the following table, adapted version from Table 1 above. In your groups, think and discuss where you would “slot” the theories we have covered in this unit with regards to the notions and concepts of *interaction* outlined in the table. Do they all fit?

Concept	HCI Theory fit	Added value
Dialogue		
Transmission		
Tool use		
Optimal behaviour		
Embodiment		
Experience		
Control		