

# Accommodation and Resistance in Interaction Design Processes

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In our recent work, we have become interested in exploring the role that STS scholars and theories, particularly Andrew Pickering's [4] notion of *Accommodation and Resistance*, can play in talking about the epistemological aspects inherent in interaction design processes.

The notions of strong [2] and bridging concepts [1] have been suggested as a way to conceptualize and generate interaction design knowledge. The core of this argument is that such concepts are generative, meaning that they can contribute to forming and shaping certain features of the interactive artifacts being designed. However, as we emphasize in this paper, a concept is not generative in itself, but only become so in the context of ongoing Interaction Design processes where both human and other non-human actors (i.e. design materials) play an active role in defining the final outcome.

Andrew Pickering [4] characterizes concepts as *active agents* in scientific practices, that is they can act upon a given process and therefore present a performative character. This perspective, we argue is relevant for current HCI research as it enables us to discuss the epistemological aspects emerging from the use of strong and bridging concepts [1, 2], and how they become generative in the context of situated Interaction Design sessions, i.e. prototyping. Ascribing agency to design concepts calls, in fact, for a shift of focus from considering epistemological aspects as emerging from performance rather than merely cognition, and from doing rather than merely thinking [4]. Ultimately, this perspective enables an exploration and a critical examination of how ideas, knowledge and values are negotiated, created and stabilized in different designs when agency, and the possibility to shape actions are also ascribed to non-human subjects, particularly concepts.

## The agency of concepts

In Pickering's accounts scientific practice has the character of a dance of agency between people and material things (machines, concepts, tools, etc.) which, similarly to human subjects, have agency that is the possibility to act upon a given process. Thus, scientific processes, such as the fine-tuning of a new machine, can be explained in terms of accommodation and resistance emerging when human and non-human elements come to interact with each other.

“[A] dance of agency, seen asymmetrically from the human end, thus takes the form of a dialectic of resistance and accommodation, where resistance denotes the failure to achieve an intended capture of agency in practice, and accommodation an active human strategy of response to resistance, which can include revisions to goals and intentions.” ([4] p. 22, original italics).

In other words, a machine designed to perform a certain task might not act as planned or intended (resistance). In the process of revising goals, accounting for how the machine works, and figuring out what might have gone wrong accommodation occurs. In this paper, we suggest that design concepts can be understood as being generative in practice by applying Pickering's notions of accommodation and resistance in the analysis of an interaction design process. In previous [5] and ongoing work, we have analyzed empirical data collected during fast-paced prototyping sessions where Interaction Design students were asked to develop a design concept for a physical twittering device. The results indicate that in the low-fidelity prototyping sessions presented, accommodation

and resistance emerge in the process of aligning the emerging design narrative, the working prototype, and the concepts driving the design and the design brief. An initial data analysis also illustrates that a number of elements (and not only the two designers) contribute to giving shape to the working prototype. More specifically: i) the concept of a bird, including its physical characteristics and mechanics for moving; here birdness becomes a metaphor that provides ideas as well as resistances in the ongoing design process; ii) the narrative developed to embed various interaction modalities in a meaningful context; iii) the design materials used during the prototyping session (see [5] for further details on this point).

## **Discussion**

### *Knowledge production through design*

Designs inevitably consist of compromises and reductions in reproducing real-world phenomena [3]. Accounting for how such reductions come to be throughout interaction design processes should be a more central focus of education, practice and theory development for critical perspectives in HCI. Digital objects embody and represent real-world phenomena, and their use contributes to consolidating the authority of such representations (i.e. systems for sustainability that never can entail the real-world complex chains of causality). Unpacking the processes of inclusion and exclusion whereby some ideas (i.e. interaction modalities) are implemented and other discarded is central in order to be able to critically examine the “authority” of such designs and how they come to exist. Unpacking these processes has important consequences in terms of our epistemological understanding of how technology supports, affords, and contributes to our understanding of phenomena and, eventually, of society and ourselves. The notions of accommodation and resistance, and the agency they ascribe to non-human elements, provide a new lens to discuss how and why certain ideas, values and interactions modalities are included in designs, or excluded from them, by shifting the focus away from mere human actors.

### *From scientific practices to design*

Pickering’s conceptualization of agency and its relationships to accommodation and resistance are grounded in scientific practices. What are the challenges raised when such notions are translated to disciplines such as Interaction Design. For instance, are design concepts more fluid – and do they therefore exercise less agency – than “well-established” science concepts? How can this be studied?

## **References**

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