

Human-Machine Reconfigurations

Preface to the Russian Translation

The core of this book began its life over three decades ago, as a PhD dissertation submitted to the Department of Anthropology at the University of California in 1984. It was an unusual dissertation for the discipline of anthropology at the time, addressing developments in computing and the emerging fields of cognitive science, artificial intelligence (AI), and human-computer interaction (HCI). Based at Xerox's Palo Alto Research Center, my 'fieldwork' involved a critical but also constructive engagement with some basic premises in the creation of humanlike, interactive machines.

The original book *Plans and Situated Actions: The problem of human-machine communication* (Cambridge University Press, 1987) tried to make several, interconnected arguments, which might be helpfully summarized here. At the core (as the title suggests) was a reconceptualization of the relation of plans to the situated activities of their creation and use. Most importantly, I argued that while the plan-based AI dominant at the time treated a plan as an algorithmic specification that determines action, plans are better conceptualized as a genre of artefact created as a resource for action. Plans are made in anticipation of doing something, often referenced as the activity unfolds, and sometimes cited after the fact to account for how things went (or went differently). Plans may be only conceptual or discursive, or they may be materialized in a variety of media, as flow charts, lists, directions and the like.

One of the common misreadings of this argument is that while sometimes our actions go as planned, often they don't; it's the latter case, on this reading, that calls for situated actions. But the argument is a much more fundamental one. The argument is that even in cases where everything does go 'according to plan,' the implementation of a plan is always, and necessarily, a situated activity not fully specified in the plan itself. In other words, given the contingencies of any actual occasion of action, every plan presupposes capacities of cognition and (inter)action that are not, and cannot ever be, fully specified. This isn't a problem for human actors, who rely on a range of ordinary (or extraordinary) competencies to bring plans into relation with the circumstances of action. But it is a profound, and unsolved, problem for computational machines.

The other central thesis of the original book addresses the implications of the argument just summarized for human-computer interface design. This begins with recognition that like action, human communication presupposes a range of taken-for-granted competencies. Central among those is the ability to engage in collaborative sense making. The latter is not just a matter of recognizing meanings that are pre-given, but of engaging in an open-ended way in the co-production of mutually accountable (inter)action. Taking this view of communication seriously as a basis for analyzing interactions at the interface reveals the significant and enduring limits in communicative abilities on the machine side, and highlights just how difficult a problem the design of human-machine communication really is.

In *Human-Machine Reconfigurations* (Cambridge University Press, 2007) I revisit these arguments through an annotated version of the original text, reframed by a series of new chapters considering relevant developments both in HCI and AI, and in social studies of science and technology. The annotations allow me to express changes in my ways of thinking about the issues discussed in the original text, while the new chapters provide an opportunity to update both theoretical resources and empirical examples. Most importantly, I work with the trope of ‘reconfiguration’ to underscore the central question of how we conceptualize or *figure* humans and machines, respectively; what that means for the ways in which we *configure* human-machine relations both imaginatively and materially; and how we might *reconfigure* relations between persons and machines, or configure ourselves and our machines differently.

While it is unquestionably the case that the fields of HCI and Artificial Intelligence have advanced significantly over the decades since the original publication of *Plans and Situated Actions*, I believe that the argument put forward in that book still holds. The primary developments in both fields rely upon a combination of increasingly sophisticated techniques for graphics and animation, expanding networked infrastructures, greater processing speed and storage capacity, and the associated elaboration of methods of data analysis. Yet, as Chapters 12 through 14 of *Human-Machine Reconfigurations* suggest, there has been notably little progress towards the creation of systems capable of engaging in social interaction. The reasons for this lie in the situated qualities of both action and communication, specifically their reliance on capacities of generative co-production of a contingently unfolding and dynamic world. These persistent problems are indicative of enduring differences that matter between persons and machines; they call in turn for design practices that engage with those differences creatively, rather than aiming to obscure or even to erase them.

The original text of *Plans and Situated Actions* was translated into a Japanese edition published in 1999 by arrangement with Cambridge University Press. I am deeply grateful that thanks to the initiative and commitment of Alisa Maximova and her colleagues at Elementary Forms Press there is now a translation of *Human-Machine Reconfigurations* that will be available to Russian readers. I am very aware of the complexities of translation, particularly in the case of a book written at a particular place and time, infused with idioms drawn from multiple disciplines and in many ways parochial cultural worlds. As I note in the book’s opening chapter, there have already been various different readings of the book, even among English speaking readers. I regret that my own language limitations will mean that I am unable to read the edition to which this is a preface or to follow its travels and its readings by Russian-speaking scholars of science and technology studies, design and human-computer interaction. As we know well from studies of design and use, any artefact that travels is made and remade by those whose lives it inhabits. I hope that the further travels of *Human-Machine Reconfigurations*, enabled by this translation, will be helpful and productive ones.

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