

# Theorizing Design of ‘Human Technologies’

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## ABSTRACT

Design is increasingly becoming a part of the university curriculum and research agenda. A theory about the process and practice of design might be important to establish design as a *main subject* at universities. We believe it is in the interest of many design communities – also the *DASTS community* – to engage in theorizing design, on the basis of *our* understanding of design and design practices. This theory should be positioned as an alternative to other attempts to theorize design, for example the influential efforts of the Information Systems (IS) community [1]. Reflections on aesthetics, ethics, values, connections to politics, and strategies for enabling a better future should be recognized as legitimate. We invite you to engage in collective theory building, and we present a starting point (Figure 1) intended to stimulate discussion across different domains, perspectives, knowledges, and ontologies [2], and to shed light on design as it is practiced in different contexts.

At Roskilde University, we have since 2008 strived to establish a new main subject area – Designing Human Technologies [3] – alongside the three longstanding main subject areas: Natural Science, the Humanities, and Social Science. We approach design as “*a process of investigating, understanding, reflecting upon, establishing, developing, and supporting mutual learning between multiple participants in collective ‘reflection-in-action’*” [4, p. 2], and acknowledge that “*everyone designs who devises courses of action aimed at turning existing situations into preferred ones*” [5, p. 111].

A key activity has been engaging in collectively discussing and reflecting upon our different design project experiences. This has led to two recent anthologies in which a total of 46 researchers reflect on 33 different design projects. In spite of diverse backgrounds, our reflections have uncovered a shared understanding of the design process depicted in a general process model that emphasizes the emergent properties of design [6] and in a collection of 18 situated methods for design [7]. The framework (Figure 1) is a preliminary suggestion for a ‘coordination mechanism’ [8] based on our experiences so far. We propose it as a starting point for shared reflections toward a theory for the design of human technologies.

<p><b>Change</b></p> <ul style="list-style-type: none"> <li>• Planned</li> <li>• Emergent</li> <li>• Opportunity-based</li> <li>• Sustainable</li> </ul>	<p><b>Participation</b></p> <ul style="list-style-type: none"> <li>• Different knowledges</li> <li>• Mutual learning</li> <li>• Joint goal negotiation</li> <li>• Infrastructuring</li> </ul>
<p><b>Situatedness</b></p> <ul style="list-style-type: none"> <li>• Situated knowledges</li> <li>• Situated learning</li> <li>• Situated action</li> <li>• Situating contexts</li> </ul>	<p><b>Scope</b></p> <ul style="list-style-type: none"> <li>• Personal</li> <li>• Collaborative</li> <li>• Organizational</li> <li>• Societal</li> </ul>

**Figure 1. A framework – or coordination mechanism [8] – intended to support reflections on human design theory.**

## REFERENCES

- [1] Hevner, A.R., March, S.T., Park, J. and Ram, S. Design science in information systems research. *MIS Quarterly*, 2004, 28(1): 75-105.
- [2] *The AIME project: An Inquiry into Modes of Existence*. <http://www.modesofexistence.org>
- [3] *Designing Human Technologies: A design-oriented strategic research initiative supporting Roskilde University’s Humanities and Technology programme*. <http://dht.ruc.dk>
- [4] Simonsen, J. and Robertson, T. (eds) *Routledge international handbook of participatory design*, Routledge, London, UK. 2012.
- [5] Simon, H.A. *The sciences of the artificial*. Third edition. MIT Press, Boston, MA, USA. 1996.
- [6] Simonsen, J., Bærenholdt, J.O., Büscher, M. and Scheuer, J.D. (eds) *Design research: Synergies from interdisciplinary perspectives*, Routledge, London, UK. 2010.
- [7] Simonsen, J., Svabo, C., Strandvad, S.M., Samson, K., Hertzum, M. and Hansen, O.E. (eds) *Situated design methods*, MIT Press, Boston, USA. 2014.
- [8] Schmidt, K., and Simone, S. Coordination mechanisms: Towards a Conceptual Foundation of CSCW Systems Design. *Computer Supported Cooperative Work. The Journal of Collaborative Computing*, (5:2-3), 1996, pp. 155-200.