

Materializing data in the smart home

Creating alternative embodied experiences of everyday life

Léa, Virginie Paymal

University of Copenhagen, rmrj893@hum.ku.dk

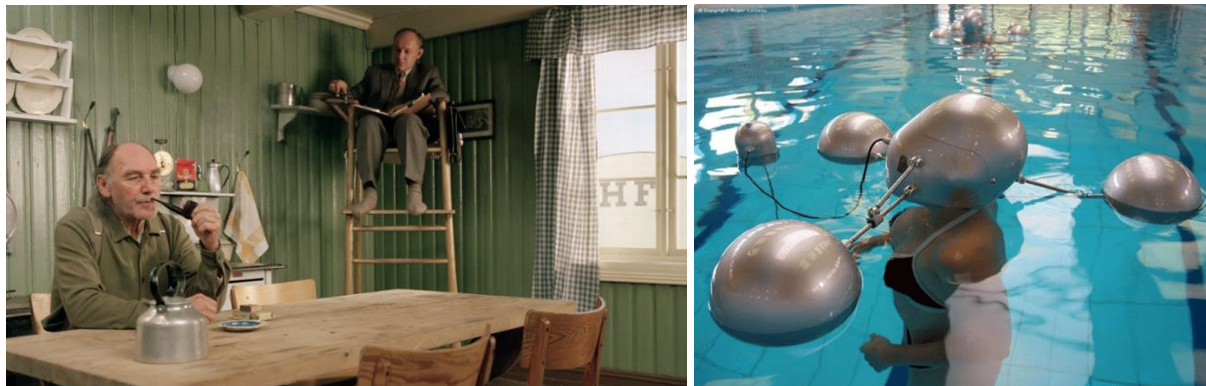


Figure 1: Hamer, B. (Director). (2003). Kitchen stories [Comédie]. Bent Hamer. (<https://www.youtube.com/watch?v=sKYyHJFxmVA>)

Figure 2: Auger-Loizeau, (2003). Iso-phone [Interactive research project]. (<https://web.media.mit.edu/~stefan/hc/projects/isophone/>)

Data from technologies mediate our life experiences. In the past few decades, advanced technologies are becoming increasingly integrated into the context of the home through the introduction of automated electronic devices – commonly described as smart products, introducing a constant, automated flow of data into domestic spaces. Data from smart products and by extension, the homes that become smart through their operation, are typically designed to offer qualities that are goal-oriented rather than experience-oriented. Researchers have argued that the process to automation narrows possibility due to the extreme reduction of complexity inherent in the sensing and actuation systems [4; 9]. Using data as a material for design, I propose to materialize smart home data to 1. observe smart home objects with new lenses 2. reveal alternative experiences that smart home objects can offer beyond the typical notions of “smart” conveyed by technological progress.

Additional Keywords and Phrases: Research through Design - Material for Design - Embodied Data - Automated processes – Smart Home Data

1 INTRODUCTION

The emerging area of Human-Data Interaction (HDI) examines how humans interact with data flows in their lives. Data-interaction design has explored how design approaches could facilitate more sympathetic or complicated interactions between people and data, with a particular focus on the contexts of everyday life. Critical design, for example, makes it possible to talk about the implications of data from digital technologies [5]. Whilst speculative design enables us to think about potential futures whilst critiquing current practices [1]. Exploring data as a material [11] allows us to think through alternative and critical narratives and investigate diverse ranges of new experiences with data. Such approaches provide alternative ways of designing with data and reflecting on their roles and impact on the lives of humans, challenging the dominant narratives of the 20th century and the pervasive corporate imaginaries that define contemporary notions of smart home data.

1.1 Exploring Alternative Lenses on the Data in the home

Smart home data is typically analyzed from a utilitarian and analytical perspective, which can limit the possibilities of understanding and observing the objects in a more nuanced way [2]. By materializing the data, we can observe smart home objects through alternative lenses with an embodied perspective. I am particularly interested in using data as a material to explore and foster alternative taxonomies for smart home objects. To do so, I would like to make tangible, the daily interactions with artifacts in the home using textiles and the design of patterns (e.g., by exploring physical traces of the body on a large scale [10] while using smart home objects through bodystorming [12]). In a previous project, I explored the concept of the loop (i.e., by observing repetitive patterns from daily life) as a design material. This research project [under submission] allowed me to physicalize through dance performance, knitwork, woodwork, and lino printing an initial data set. I proposed alternative ways to observe everyday life data as well as new strategies to bridge craft practices.

Besides bodystorming, I propose to draw on the film *Kitchen Stories* directed by Bent Hammer in 2003 (fig. 1), based on social experiments conducted in Sweden during the 1950s, which provides a critique of methods of observation. This critique opens up sites for speculation about alternative strategies and ways of observing everyday data in the domestic environment. Using materialized smart home data as an exploratory tool, what are the new possibilities to observe the objects? What are the new observable categories?

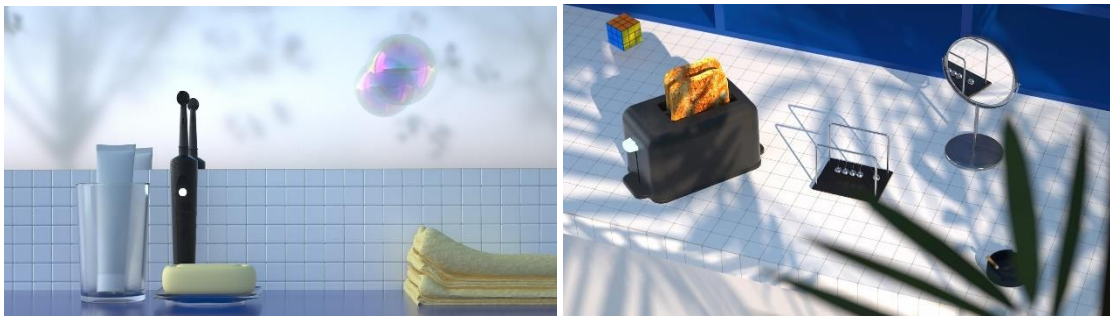


Figure 3: Zhou, Y. (Director). (2019). *Welcome Home* [Research project; 3D animated video]. (<https://yuxinthewind.com/Welcome-Home-2019-3D-animated-video>)

1.2 Probing experiential qualities of interaction in everyday life beyond *personal* data

Design probes [6] enable long-term observation in the home by collecting data in various forms such as videos, photos, journal entries, and spoken conversations. In the everyday context of the home, especially when observing smart home objects, the nature of the data needs to be questioned to go beyond the typical idiosyncratic data (Fig. 3) [3, 7, 13]. How to probe the experiential qualities of interactions with technologies in the home (such as embodied, participative, reflexive, and engagement)? How to collect the experience with technology over time? How to unpack the qualities of technologies? In the interaction with smart home data, the experience itself is not celebrated and these potentials are lost [8]. I propose here to take inspiration from Auger-Loizeau who presented in 2003 a provocative design project called 'Iso-Phone', which is a solution focused on the experience and not the efficiency of communication (fig. 2). The Iso-phone is a telecommunications concept that provides a telephonic space of heightened purity and focus by blocking out peripheral sensory stimulation and distraction. I will explore how materializing smart home data could help reveal 1. current experiential qualities of technologies in the home; 2. Potential future experiences of domestic spaces.

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