

Using Research through Design to Study Future Everyday Life

RtD as an approach to bridge HCI and social science

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ABSTRACT

Future everyday life is certain to be different from today. But how can we anticipate this future in the present? How is it shaped in the present? And how might we shape this future in desirable ways? Design and HCI have answers to these questions when it comes to the future surrounding specific technologies and their users, but have more difficulty when it comes to the broader societal effects of the technologies they develop. Certain areas of the social sciences on the other hand, routinely study the effects of technologies on everyday life, but have difficulty engaging with the future. I believe Research through Design has the potential to address this gap in understanding future everyday life.

This paper describes my ongoing efforts to explore this potential, including a multidisciplinary Making Everyday Futures workshop and a Researching the Future Everyday master elective with Interaction Design students.

KEYWORDS

Research through Design, Smart home, Social sciences

Introduction

Having worked with Research through Design (RtD) intensively and passionately since my PhD research and having spent considerable time in particular social science research communities, it has become my secret mission to introduce RtD to these communities as a valuable and unique form of generating knowledge. In the meantime, as a step in this direction, I've been working over the past couple of years to develop an RtD type of approach to study future everyday life. In particular, I have focused on the future everyday life in the smart home.

The smart home is beginning to become a reality and this has not gone unnoticed in the area of the social sciences that study the

role of technologies on social change. Over the past years, a range of studies has come out that have analysed this role of 'smart' technologies in the home by interviewing and observing early adopters and technology developers [1-7]. As social scientists do, they raise a range of concerns about these developments ranging from energy demand to questioning the humanness of the smart home.

To be honest, I'm with them when it comes to these concerns (I wouldn't shed a tear if the 'smart home' project would be abandoned altogether). But let's face it, it won't. Smart homes are coming and the HCI community plays an important role in making this happen. And ok, here and there smart home technologies show promise. What we need is damage control. But this is a highly challenging pursuit.

The risks of the smart home, the one's I'm talking about that is, are risks that play out on the longer term and not necessarily in the lives of those people developing, installing and using these systems. They therefore lie outside of the traditional research scope in HCI. Another challenge lies in the gap that lies between critical work conducted in the social sciences that identify these risks, and the everyday practice of those developing the systems. This is a gap between disciplines and therefore research practices and terminologies (the format, writing styles and output channels are generally different), but another aspect of this gap concerns their temporal orientations. While work in the social sciences tends to be focused on the past and present, work in HCI is generally future focused. Reading or hearing about risks of smart technologies in the present can easily be ignored as something that will simply solve itself with technological progress, or have a paralyzing effect because the focus is on what shouldn't be developed or designed rather than what should be. Critical work from within HCI on the risks of the proliferation of smart technologies in everyday life (such as [8-10]) is certainly reaching effects here, but in part encounters the same challenges.

Social scientists (sociologists, anthropologists, STS scholars) are trained to develop critical accounts of the role of technologies from a specific societal perspective (gender, energy, power, etc.). In that sense, they have a different bias than researchers within HCI, who tend to consider this role from the perspective of a specific technology (for example apparent in consistently referring to people as 'users').

*Article Title Footnote needs to be captured as Title Note

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I believe it is important that this societal perspective reaches HCI research and practice, but the current analytic accounts only go so far in achieving this. What is needed, in my view, to mobilize the HCI community to tackle some of the looming risks of developments towards the smart home, is systematic research into the future of everyday life in the smart home, both in terms of forecasting current developments, as well as visions of desirable futures. Moreover, the step needs to be made from identifying risks, to identifying ways of preventing and tackling such risks. RtD can play a role in both, because it is suitable to develop future visions, ideas and scenarios in parallel with developing new methods. But RtD is not the only way to research future everyday life.

Researching Future Everyday Life

As part of the inaugural workshop of the Everyday Futures Network held in the summer of 2016, dr. Nicola Spurling, anthropologist and sociologist at Lancaster University, and I brought together a highly varied group of researchers to think about ways of studying mundane, everyday futures. This endeavour departed from this same gap identified between disciplines such as history, anthropology and sociology that deal with the lived everyday, and disciplines like policy, planning and HCI that focus on the future through various objects and scales, 'but rarely from the perspective of daily life' [11].

The workshop resulted in a collection of nine essays published on our [Everyday Futures website](#), and a special topic in ACM Interactions [11]. This special topic highlighted three different approaches to researching future everyday life: (1) a historical focus (Wright and Pooley) in which the path dependency of infrastructures and ways of living implies looking at historic change as a means for anticipating the future, (2) A focus on the present (Chatterton and Newmarch), in which the idea that some of the diverse ways of living that exist today are likely to grow in the future and therefore form examples of how the future exists today, and (3) how the future everyday lives implicitly implied in powerful visions of the future, such as the circular economy, form an entry point for anticipating these lives (Welch, Keller and Mandich).

Making Everyday Futures

The second workshop explored a fourth approach to researching future everyday life, namely through the making of new artefacts. In this 'Making Everyday Futures Workshop', the focus was on exploring the possibilities of using processes of making objects and the objects themselves as an approach to generate original knowledge for the social sciences.

The 3-day workshop had 26 participants from a range of disciplinary backgrounds, recruited for their interest in future everyday life from a variety of starting points such as climate change, public health and networked lives. During the workshop, participants worked in pairs – one experienced maker and one social scientist – to design and make a research artefact that represented a 'what if ...' question related to their own research

interest. Day 1 focused on getting to know each other, the making facilities and the theory behind researching the future everyday through making. Day two centred on discussing and materializing what if questions, and on day 3, the thirteen 'research artefacts' were presented in an exhibition. After the workshop, the participants produced process blogs that are published on our website. Three examples are briefly explained and reflected upon below.

Smellscapes (by Spurling and Kapur) explores the question 'What if we are confronted with unfamiliar smellscapes in our homes, neighbourhoods, workplaces and cities?' and aims to bring the sensory experiences of continued climate change and migration in the future to the present.

Objects that Withdraw (by Nicenboim and Suarez) speculates on the idea of a glitch in an autonomous system of objects designing new, improved versions of themselves leading to artefacts that hide from the prolific cameras in the future smart home.

Space2Go (by Castan and Heidingsfelder) is a simple garment that allows people to withdraw when wanting to engage in private activities on their mobile phone when in public spaces.



Figure 1: Outcomes of the Making Everyday Futures workshop (Smellscapes [tl], Objects that Withdraw [tr] and Space2Go [b])

After the workshop, Nicola and I presented an analysis of the thirteen artefacts at the Anticipation 2017 conference in London. In this analysis we identified four different ways in which the research artefacts engaged with the future everyday. For each form of anticipation, the artefact played a different role in relation to the future everyday, and to its potential bearing on the present.

1. Several of the research artefacts approached the future as an open space, full of potential. In this open future, new practices are imagined to emerge around existing technologies. The detailing out of such preferable practices has the effect of revealing or enlarging a

- certain lack or problem in the present. One of the artefacts for example comprised a wearable able to give their wearers an artificial hug, highlighting present day problems of loneliness.
2. A second form of engagement with the future centered on new technological capabilities imagined to emerge in the future. The making process explores possible practices that might emerge around them, and resulting research artefacts enable experiencing and discussing pros and cons of future practices around these technologies. Objects that Withdraw is an example of this.
 3. A third form is to anticipate current threats to escalate in the future, for example the problem of social isolation in the Space2Go. This perspective views the future as a problem space. The research artefact makes the need to find solutions for it in the present more prominent. On the other hand, this type of anticipation may hamper action in the present by painting a future in which the anticipated problem has been accepted and solved.
 4. This risk is less present in the fourth type of anticipation, where a certain aspect of a taken for granted, anticipated future is materialized in the present, such for example in the engagement of Smellscapes with futures of climate change and migration. What these artefacts do is make underexplored, experiential aspects of anticipated futures discussable in very practical terms. Such research artefacts can open and enrich discourse around anticipated futures, and reveal how the present is constituted.

These are interesting observations with potential for further development, but they didn't develop what for me was core to the exercise, namely bringing making as a way of doing research to social scientists. In fact, during our analysis, Nicola, trained as an anthropologist and sociologist, analysed the artefacts for their conceptualisations of the everyday, and I, trained as a designer, focused on conceptualisations of the future. As such, we each stayed in our own comfort zone and didn't actively try to close that gap we identified between our disciplines.

Our concluding remarks in the presentation at the Anticipation conference further highlights this remaining gap. We closed our talk with the following three aspects that are overlooked in using making as a way of doing research:

- one, in foregrounding materiality and embodied experience, certain kinds of social concerns are not readily discussed or considered such as politics, inequalities and power
- two, in working with our own bodies and a limited set of materials 'the everyday' that was imagined, oriented around western, European concerns. This points to the importance of the maker, their social situation and subjective decision-making in the kinds of future everyday considered.

- three, many of the artefacts were situated in a static future moment which had little dynamic or fluctuating qualities – the depth was in the embodied experience of a specific practice in a specific moment. As a result the temporal embedding of practices in everyday life, and the importance of the patterns and qualities of temporal experience risk being overlooked.

These observations exemplify some of the concerns that exist from a social science perspective with using making as a way of researching a phenomenon. What they seem to boil down to is the challenge of pushing ahead into an unknown future from the perspective of a specific material object and thereby blurring the broader picture of social concerns, diversity and time dynamics. Is this an impasse? Is it either one or the other?

I don't believe this is so and continued to explore the possibilities of using processes of making new artefacts, and the artefacts themselves as an approach to generate original knowledge for the social sciences. This question is further explored in the master elective course Researching the Future Everyday, offered as part of the Industrial Design programme of Eindhoven University of Technology (NL).

Researching the Future Everyday

The aim of the course is to let students experiment with ways in which 'research products' [12] can be used to make valuable contributions in the social sciences.

In the course, students depart from a particular study into the role of technology in everyday life published in a social science journal and formulate research questions on the basis of it. The idea is that this focus helps them gain depth into the different aspects of a particular social issue. To guide them away from a narrow future vision, they participated in a future probing workshop early on in their process. They design, make and deploy a research product after which they analyse results and produce a scientific paper about it. In this process, they are guided and encouraged to keep an audience of social scientists in mind. To help them empathize with this to them rather unfamiliar audience, they primarily focus on the authors of the paper they departed from. The resulting papers are reviewed by experts from the social sciences (where possible the authors of the core papers). To ensure quality of the research products, they are critiqued half-way the course by design researchers in an exhibition style set-up.

The course resulted in eight papers describing and reflecting upon a research product that was a response to a particular paper from the social sciences. Below, three examples are highlighted to offer an idea: AIMY, Jack and June, and Smart Cup

AIMY was a response to Screened Intimacies: Tinder and the Swipe Logic [13] and explored the possibility of dating apps developing towards audio based versions, both as a desirable and probably future scenario.

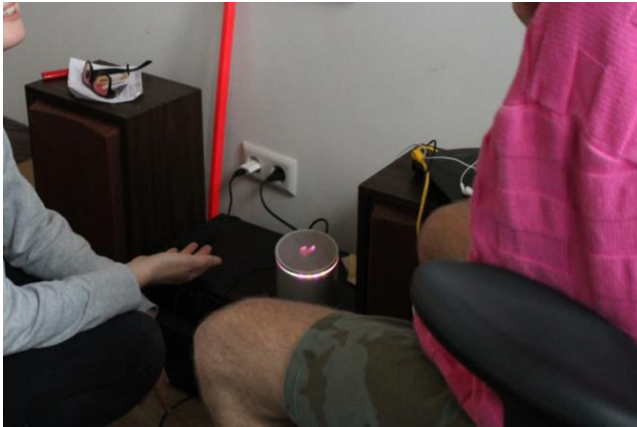


Figure 2: AIMY during deployment (Burghoorn and Roijackers)

Jack and June, developed in response to 'Aesthetic pleasures and gendered tech-work in the 21st-century smart home' [14] explored perceptions of gendered technologies by making two high fidelity packaging prototypes of gendered smart home assistants.

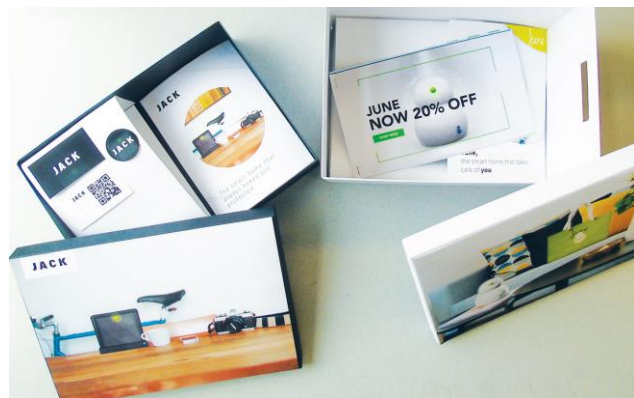


Figure 3: Jack and June smart home assistant packaging (Pronk and Claassen)

Smart Cup, developed in response to 'Convenience and energy consumption in the smart home of the future: Industry visions from Australia and beyond' [6], used a cup equipped with random light behaviour to explore the boundaries of people's expectations of smartness to derive implications for the future smart home.

The next step is to analyse these materials from the course and compare them with the outcomes of the Making Everyday Futures workshop, as well as link them to other work in RtD that aims to explore present or future everyday living.

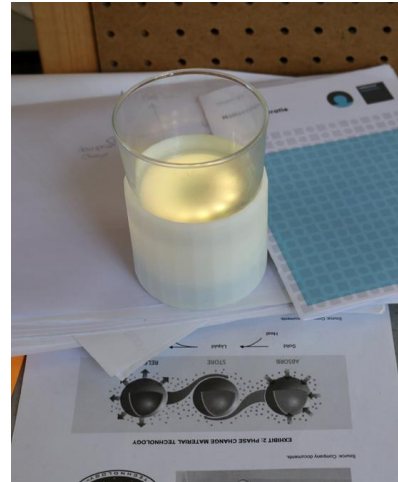


Figure 4: Smart Cup (Chantzopoulou and Loos)

Discussion

Currently I am in the process of bringing the outcomes of these projects, within the embedding of the broader research field of RtD, to social science conferences. I want to promote RtD as an approach in these communities because I think they can offer a valuable new perspective on (future) everyday life that remains obscured in other approaches. I also think that through these approaches, the bridge between these areas of the social sciences and HCI can be strengthened. Going to these conferences will help shape my arguments to eventually work towards a paper in a social science journal presenting these ideas.

In the workshop, I will bring in the results of the Making Everyday Futures, the student projects and the set-up of the course itself to reflect on the role RtD can play in contributing to our understanding of future everyday life.

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