Lessons from Living In A Prototype

Audrey Desjardins
Simon Fraser University, Surrey, British Columbia, Canada
adesjard@sfu.ca

INTRODUCTION
In this position paper, I present a two-year long autobiographical design project: the conversion of a Mercedes Sprinter van into a winterized camper van [6]. Over the past two years, I have reconfigured, together with my partner, the space in a cargo van to welcome activities like cooking, eating, sleeping and entertaining during our biking and skiing trips. This project allowed me to investigate the complexities and nuances of a case where people engage in a process of making, transforming and adapting a space they live in. This project relates to previous research investigating how people live with design artifacts (digital or not) in everyday settings and how they creatively appropriate, remake, or modify them through ongoing practices. It extends and builds on previous research focused on everyday reconfigurations of spaces and adaptations of everyday artifacts (e.g. [5,14,16,18,20]) as well as research on do-it-yourself (DIY) practices of design and making (e.g. [2,9,12,15,19]). As a human-computer interaction (HCI) research project, it opens a radically different and productive context for revisiting concepts that are currently at the center of HCI research: ubiquitous computing [1], smart homes [8], and the Internet of Things (IoT) [3]. While some research is starting to explore the role of end-user development and DIY processes and practices in smart homes and the IoT for the home (e.g. [11,17,21]), the van conversion project offers a rich example of how the processes of designing, making and living are interrelated and co-evolve.

In the context of this workshop, this project can help articulate new questions regarding how we might investigate and start to understand objects as outcomes of design research. To foreground, in this position paper I offer four themes the van conversion project can explore. Firstly, the van conversion project refers to a space (including a collection of interrelated objects) as opposed to a single object. Secondly, this project was developed as an autobiographical design project; hence it was not designed specifically to inquire a set of HCI research questions. Thirdly, since the van is not mainly a technological artifact, it seems like there is a need to translate the design knowledge embedded in this ‘analog’ object to matters of interaction and computation. Finally, much of the design knowledge embedded in this artifact has been disseminated to a Do-it-yourself (DIY) audience through five online tutorials, suggesting a new way to communicate design knowledge.

THE VAN CONVERSION
We bought a Sprinter van in October 2013 with the intention of converting it into a camper van for camping and ski trips. The van was new with nothing else in it other than the driver and passenger seats. The walls were not finished; they were the bare metal sheets. The back of the van represented a space of approximately 6 feet wide by 10 feet long by 6 feet tall. The complete van conversion was planned over five years with different stages such as insulating the walls and floor, adding a complete kitchen unit, electricity, water, solar panels, etc. Each stage includes
breaks that allow us to live in the van and go skiing, mountain biking, or camping; however small changes, additions, and repairs are ongoing, even while traveling with the van. To date, the van has been through four major building stages: insulating the walls, creating a back platform for storage, finishing the walls with cedar tongue-and-groove panels, and building a unit that serves as benches and a table that converts to a bed.

The design and build of this project was never intended to serve as research in HCI. However, this project offers a rare opportunity to take an in-depth look at how people live with (and in) the things they make. It allowed me to extract many of the sensibilities and nuances of the intertwined processes of making and living, and to identify qualities of the relationship that exists between the maker and the thing that is made. As the project moved forward, it became clear that it was revealing and illustrating issues and matters of concern that were relevant to HCI research. Hence, I used an autobiographical design approach [10] to articulate and present those insights.

THE VAN AS AN OUTCOME OF DESIGN RESEARCH
I have discussed the findings of the autobiographical design investigation in [6], with a focus on the relationship between the maker/users (my partner and I) and the reconfigured space (the van). Here, I present four themes that can help us deepen our investigation surrounding objects as outcomes of design research.

A space (and many objects)
This workshop proposes to look at objects as design research outcomes. The van is not a single object; it is a combination of a space, furniture, and artifacts. This project can allow us to think beyond the object and to reflect on the interrelations created between the object, other objects and the contexts they might be used in. Moreover, each designed object within the van can attain different levels of refinement, between roughly sketched ideas to polished details. For example, the walls were finished with precision, while a kitchen unit was bought and simply installed as a sketch for what a future kitchen could be. By ‘living in a prototype’, I saw the productive tensions between the sketched and the polished. I wonder how the quality and the level of finish of this project can be evaluated.

Autobiographical design
Autobiographical design is defined as “design research drawing on extensive, genuine usage by those creating or building the system” [10:514], and the design must respond to the genuine needs or desires of the researcher/maker. Hence, by definition, autobiographical design does not start with a set of research questions aiming at producing new interaction design and HCI knowledge [13]. While some research through design projects set in advance research questions to explore, the van project’s research questions were articulated post hoc. Are there differences in how we understand objects as design research outcomes based on the motivation for their creation? The van conversion project can support an exploration of the opportunities of formulating research questions after the design process.

A non-technological artifact to inform HCI research
An important characteristic of the artifacts of design research is that they hold material knowledge [4,7]. The van conversion project is mainly a non-technological one, however, in [6], I argue that, and describe how, it can hold important lessons and insights for the how researchers might think about smart homes, ubiquitous computing and the Internet of Things. Here, I wonder how much articulation of my experience with the conversion process is necessary to be externalized in order to gain those insights for HCI. What are the conversion processes necessary to translate insights from a material (or analog) project to valuable insights for a computation-oriented discipline?

DIY tutorials as a way to disseminate knowledge
In research through design, we often discuss how new interaction design knowledge can be produced for researchers and practitioners [4,7]. In the case of this autobiographical design project, design knowledge was produced for another audience: for the DIY online community. Before the van conversion project became a research project, I documented the making process with the intention to contribute back to the DIY community online. For each build, I created tutorials on the online platform www.instructables.com and added timelapse videos of each day of work on the van. Over the months, the Instructables platform has archived all the readers’ comments and questions, as well as my answers.

When I started to look at the van conversion as a design research project, I realized the value and the opportunities of having such documentation from an autobiographical design project. In this workshop, I am curious about what other types of alternative design research dissemination strategies might exist.

THE QUESTIONS I WANT TO ADDRESS
Based on the four points presented above, I am curious to dive into more depth in the following questions:

- What is the nature of the differences between looking at a space rather than an object as an outcome of design research?
- What are the particularities of autobiographical design vs designing and living with a prototype for research purposes?
- How much of the non-verbal knowledge do we have to externalize for the research to make a strong contribution to interaction design and HCI research?
- How does material knowledge about non-digital things transfer to material knowledge in computational things?
- What role can DIY tutorials play in disseminating object outcomes?

REFERENCES


