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# The Car as a Second Home

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**Abstract**

The utilitarian purpose of a car is for transportation, but our research, conducted over the course of a year, revealed how people refer to the car as something that encompassed much more than that. The car was considered more like a “space” or a “state” rather than a device or machine. When designing experiences for the car, our team faced challenges using conventional product evaluation methods to assess them, due to this very reason. This paper describes the journey of this realization and our current thinking in terms of evaluating technologies in the car.

**Author Keywords**

Home, Methods, Design, Family, Multi-disciplinary

**ACM Classification Keywords**

H.5.2. User Interfaces: Theory and Methods

**General Terms**

Experience Design and Research, Usability

**Introduction**

Bringing up the car as a research space for this workshop might not seem immediately relevant but through the research conducted during the past year our team has come to see the car as a central space for individuals and families to spend time -in many ways- as the time spent at home. The car witnesses several of



Image 1: Videotaping the in-car experience.



Image 2: Evaluating a prototype in-situ.

the intimate human behaviors that are also carried out at home such as: eating, fighting with spouses or siblings, singing out loud, talking to ourselves, being entertained, picking our noses, sharing -from trivial to deep- conversations and moments with our loved ones, and even having sex. Furthermore, the car mimics certain areas of the home that blur the boundaries of public and private spaces, much like a living room with large windows on street level or the front yard. The utilitarian purpose of a car is for transportation, but our research revealed how people refer to the car as something that encompassed much more than that.

When our team started designing experiences for the car several methods of research to assess them were employed that captured particular elements and provided some insights, but failed to give a holistic perspective and presented many challenges. It took several studies for the team to realize that only through considering the car as a space we could properly understand the impact of our designs in people's lives in the car.

### **Failed Research Methods**

The mission of Intel's Interaction and Experience Research (IXR) Lab is to promote and evolve user experience innovation as applied to technological interactions. We aim to re-imagine the computing experience of the future, defining new user experiences and new user platforms. IXR researchers consisting of both user interface technologists and social scientists to create the next generation of user experiences. Design is a big part of our work where prototyping and evaluating those concepts are key components of the process. For the past year my role in the team has been to assess, in terms of experience, designs built by

the team related to the transportation domain, in particular the car.

The initial studies I set up were guided by typical qualitative assessment methods: focus groups, diaries, in depth interviews, self- assessment questionnaires, and others done in lab settings. Although the data collected had significance and was shared with designers and developers in an actionable manner, the results failed to provide a holistic view of how the place the technology would have in people's lives. The experiences we were designing for the car had little relevance in the lab setting and in the way that I was framing the research. I was utilizing methods to uncover usages and assess experiences for a particular technology or product and not for an environment.

Ultimately, these failed experiments gave me enough information to contemplate other methods for evaluation. I realized that evaluating prototypes in the car couldn't be approached as apps on the phone, a new web site, or a wearable device. A parallel can be drawn from researching TVs and attempting to evaluate certain usages in an office space that would only emerge in a living room setting. This realization led to many other concerns since some of the elements of the car (as the mental load, the noise or the unpredictability) are hard to replicate, and beyond that, the rich social situations that the car witnesses (even when the driver is alone) play an important role in how any technology in it is experienced. The car occupies a central role in peoples' lives and being sensitive to that, opened the doors to thinking about evaluating technology in it in a whole new way.



Image 3: Recreating the car experience.



Image 4: Recreating the car experience.

### The Car as a Space

One of the elements that provided insights that eventually led to re-thinking the research methods was how people defined the vehicle and their ideal driving experience. What gave the clue was the fact that if the word “car” were removed from statements from participant’s transcripts, they would be much closer to defining a “space” or a “state” rather than a device, product or machine.

That change in thinking about the car gave rise to a whole new way of approaching evaluations of in-vehicle designs. The first step identified was to evaluate car technologies in-situ (in people’s cars) while driving. Unfortunately, for obvious reasons, having someone drive while interacting with new equipment was not possible. For that reason, the redesign of the evaluations took place with the setting of the vehicle parked (but having people seat in the driver seat [Image 1 and 2]). In some situations, even that was not achievable. In those cases, we attempted to re-create the car environment as much as possible [Image 3 and 4]. Our data collection methods included interviewing people in their vehicle and asking them about their current use of technology (while actually seeing it and interacting with it), filming and observing how people interacted with prototypes while in the driver seat [image 2] and utilizing the lab space with recreation of cars [image 4] to lead contextual conversations rather than evaluating prototypes. These methods were borrowed from methods that are used more typically for in-home research [2]. To continue the research efforts in that direction, we are currently building a platform that will allow us to collect

longitudinal data [1] while people are driving in a non-distractive way.

As raised by the workshop authors, these methods might have validity and practical challenges and it is my hope that by participating in this workshop I will gain perspective from other’s experiences to overcome them (or attempt to minimize them) as well as share more details about the research conducted in the car, that can certainly be useful to be applied in the home environment.

### About the Author

Dalila Szostak is an experience design and researcher at the Interaction and Experience Research Laboratory, Intel Labs, currently focusing in the area of transportation.

In addition to the author, Carlos Montesinos, Victoria Fang, Alexandra Zafiroglu, Jennifer Healey, David Grauman and Tim Plowman are part of the design and research team.

### References

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