Method Report: Probes

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INTRODUCTION

Since their introduction by Gaver, Dunne and Pacenti [2], probes have been rapidly and enthusiastically adopted by HCI researchers [1]. The name "probe" references astronomic or surgical probes. The researchers "left them behind when [they] had gone and waited for them to return fragmentary data over time." [2] Consistent with the metaphor, the probes had to be specifically designed to gather data about the target, in this case the user's experience and cultural context. Although more high-tech variants are possible, probes usually take the form of activities that are centered on objects and materials that are familiar from everyday life. Importantly, the instructions for the activities are physically attached to the objects in question and delivered to participants as a package, so they can be filled out at the participants' own discretion and leisure. Examples are (stamped and addressed) postcards with questions on them, or the ever popular disposable camera with instructions on what to capture. They probe activities are completed by the participants, and the completed probe is sent back to the researcher.

Originally, cultural probes (now also called design probes) were envisioned as a way to get glimpses into the personal lived experiences of participants, which would then inspire design. Gaver et al.'s approach was inspired by different avant-garde arts movements such as the Situationalists, and sought to provide a method of relating to participants beyond the highly rational perspective that's usually adopted in science [3,5]. Instead, the shared understanding they want to create between participants and researcher/designers emphasizes subjectivity, experience, aesthetics and trust. In this report, I try to stay close to this critical stance, even though (and indeed, because) many other researchers haven't [1].

A variant on the method was proposed by Hutchinson et al. [4], dubbed technology probes. These differ from design probes in that the participants aren't given a set of familiar set of materials with associated activities, but a piece of technology that integrates into everyday life. These technologies should intrigue and provoke users, and be open-ended in their use. The interesting thing is discovering *how* users use the probes. This data can even be gathered by the probes themselves, by recording various aspects of their use. In contrast to prototypes, technology probes are used early in design and not iterated upon.

USE

For both design and technology probes, it is vital that they are specifically designed for the context at hand. After all, a key feature of probes is that they become part of participants' lives for a while, often provoking reflection and/or discussion before they complete return the probe. This personal, reflective and communicative quality should be reflected in the material objects that accompany them, there should be room for creativity (but not enough to overwhelm). Wallace et al. give a particularly compelling argument for this [5], describing the process of completing a probe as one of co-creativity between the participant and the researcher. Similarly, it is crucial for technology probes to be adaptable by the participants, Hutchinson et al. speak of co-adaption of user to technology and vice-versa.

Typically, probes should be used in the beginning of a project. They are supposed to draw from the experience of participants in order to give inspiration for further design. However, a bit of familiarity with the context surrounding the question and participants is required to design the probes themselves.

The nature of the data generated by probes, and its validity, has been the matter of some discussions. [1] Gaver et al. take the stance that analyzing probes diminishes their use as inspiration, emphasizing they should be seen as parts of the conversation between designer and participant. [3] Nonetheless, probe data has been analyzed, often qualitatively, but also - in my opinion questionably - statistically. Even though the material aspects of the generated data can be very different in technology probes, it's usage and place in research is very similar. That is to say: It gives us glimpses into participants' subjective experience, and inspires further design efforts.

ADVANTAGES AND DISADVANTAGES

One of the main advantages of probes is that they work well for domestic settings and difficult questions. If done right, they can be very gentle and offer participants time, space and opportunity to reflect on themselves. They can reward participants with new insights about themselves, which is a nice gift in return for the time and effort they invest in helping with your research. [5]

The generated data tends to be very useful as input for further design. The aesthetics of the completed probe are a part of the answer. Furthermore, answers are often very creative and rich insights can be gained. The flip side is that data can not easily be analyzed, if at all.

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Lastly, a certain degree of design skill and material is required to construct the probes. While material cost shouldn't be prohibitively expensive for design probes, it can be a factor for technology probes (Hutchinson et al. [4] had to compromise for a missing touchscreen). With the focus all kinds of probes put on design, having an experienced designer on your team is strongly advisable.

EXAMPLE

Wyeth and Diercke [6] used probes to gain inspiration for developing new educational technologies. Probes gave them a gentle way to approach school children and inquire about their worldview. They designed a list of open-ended activities that were supposed to spark the creativity of the children. After receiving the returned probes, they found surprising and evocative ideas. In addition, drawings provide an idea about appropriate aesthetics. No design response was created in scope for this paper, but was planned for the future.

References

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