

ProbeTool Cam: A Work in Progress Research Prototype

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ABSTRACT

We will present to the Object Outcomes workshop, a work in progress artefact created as part of the ProbeTools design research project, which is engaged in producing digital Cultural Probe devices. The ProbeTool Cam prototype is an example of research through design and will be presented at a stage midway through it's development cycle, allowing those present at the workshop the opportunity to discuss design details still under consideration. The device has an intended future as an open-source design for others to build their own Cultural Probes cameras to use in user research studies, and is so representative of an object built as research and for research purposes.

Author Keywords

Design; research through design; batch-production; prototype; culture probes

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous;

INTRODUCTION

The ProbeTools project builds on Cultural Probes [1], a design-led approach to social research in which collections of tasks are designed to elicit responses from people that illuminate participants' lives, values and desires. Designed to be engaging, playful, aesthetically appealing and open-ended, Probes can be an effective way for designers to work with participants to gain an understanding of the context for their designs. Since their introduction about fifteen years ago, Cultural Probes have become an established method in the repertoire of designers, researchers, technologists and social scientists. However, the traditional media of Probes such as film and audio tapes are dying out, and it is more difficult for practitioners to achieve the sensibilities of probe-like activities using feature-led digital devices.

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The growing ubiquity of mobile computing might seem to compensate for the death of old media by allowing the design of probes based upon new devices, and indeed other researchers [2] have based probe studies on smart phones and similar devices. There are several drawbacks with using commercial devices for probes, however. Perhaps most importantly, probe returns are most revealing when they are *spontaneous and unedited*, whereas most common digital devices allow review, editing and deletion. Probe tasks also benefit from *playful constraints*, whereas commercial devices are typically feature-led. Finally, probe materials are usually presented as collections of *separate, stand-alone* items, whereas commercial devices typically present a relatively homogenous collection of 'apps' that compete with one another and must be explicitly activated. In general, it appears difficult to use smart phones or tablets to develop probes that fully realise the simplicity, playfulness and personality characterising the best examples of the approach.

ProbeTool Cam is device under development within the project that aiming to provide, among other objectives, a bespoke digital alternative to the disposable camera used in many Cultural Probe projects. It is one of several devices under development in the project that deal with the capture of image, video or audio. It is intended to be a robust and replicable computational device specifically designed for Probe studies and social research more generally. To our knowledge, there have been no other efforts to produce computational products specifically for social research;

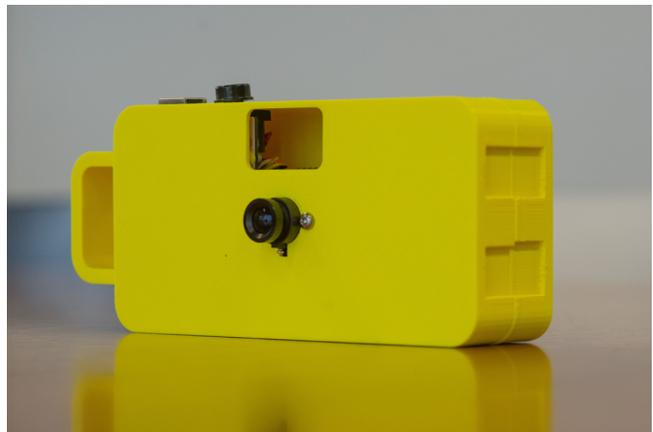


Figure 1: The ProbeTool Cam

ProbeTool Cam

A simple image-capture tool could be designed to look like a camera, with viewfinder, shutter release, and frame counter, but also to include features that allow its use as a versatile ProbeTool:

- Separate wrappers allow customised instructions for use (e.g. requests for pictures).
- The wrapper also covers the charging and data point, allowing researchers but not participants to access the pictures.
- Option dials, also hidden by the wrapper, could be used to configure the camera, for instance setting how many images it takes.
- Other controls could reconfigure the device as a single-shot or time-lapse camera, change the interval between pictures, configure image processing, or make it sensitive to sound.

This approach would allow the same device to be used simply to create a wide range of Probe tasks.

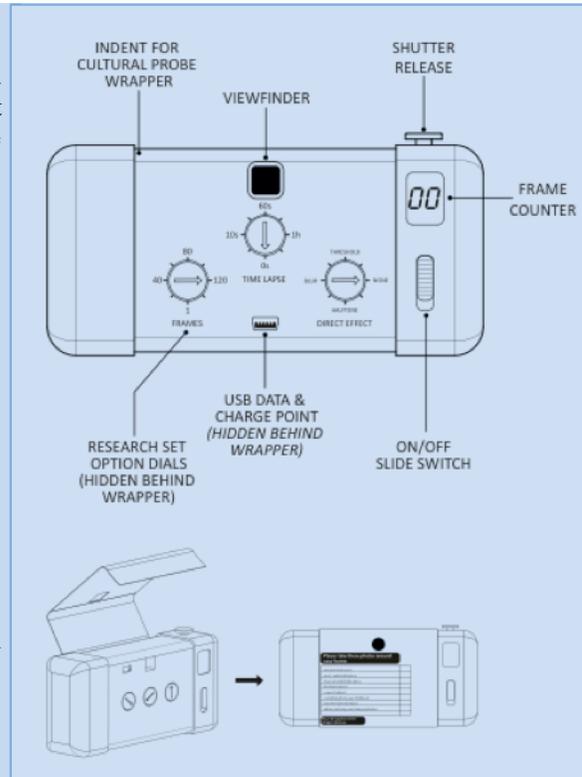


Figure 2: An initial proposal for the ProbeTool Cam

instead social researchers tend to rely on off-the-shelf technologies and so the ProbeTools project is thus intended to contribute fundamentally to HCI and social research more generally.

We have taken a practice-based approach to the design and development of the ProbeTool Cam, having at the time of writing produced several iterations of device. Working towards a design that others can replicate, we anticipate batch-producing and testing around 30 units whose design brief is broadly as follows:

- Simple and inexpensive to build
- Designed to be tailored in individual probe studies
- Produced to allow reuse
- Open source to allow adoption and customisation by a wide range of researchers

The design of the ProbeTool Cam however also has to embody multiple research agendas and questions that add to this brief:

- Retain Cultural Probe sensibilities and analogue affordances within a digital device that may exploit digital processing techniques to create a new image capture experience
- Design a camera that can be used generically in Cultural Probes studies yet be rich and engaging enough to capture unique user research experiences

- Create an open source system that encourages the replication of Cultural Probe sensibilities through examples of good practice

DISCUSSION

We will discuss how research through design has to tackle both the design brief and research questions simultaneously, and how research artefacts have to embody both agendas. We will also argue how some of the seemingly inconsequential aspects manifesting devices, such as issues with manufacturing techniques or power management become key research activities that are completely embodied in the design of the artefact, and how recognising this is critical for understanding the research fully.

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