

Vast and scattered empirical material from interLiving

Lindquist, Sinna

CID, NADA, KTH

SE-100 44 Stockholm, Sweden

sinna@nada.kth.se

Westerlund, Bo

CID, NADA, KTH

SE-100 44 Stockholm, Sweden

bosse@nada.kth.se

Sundblad, Yngve

CID, NADA, KTH

SE-100 44 Stockholm, Sweden

yngve@nada.kth.se

ABSTRACT

With this position paper we want to start a discussion on how to deal with a vast and scattered empirical material, collected over a three year period of time, in different countries, and through different methods. The paper will describe the variety of material (photos, diaries, drawings, log files etc), the reason for it being assembled (social science goal of understanding users, computer science and designers goal of generating design ideas) and how it has been used in the design process. Unfortunately, this short paper will have more questions than answers on how to handle such a vast and scattered material the best way.

Author Keywords

Cooperative design, multi-disciplinary work, triangulation, material, data, technology probe, illustration.

INTRODUCTION

The material that is in focus for this discussion is generated within the interLiving project (Designing Interactive, Intergenerational Interfaces for Living Together) that is funded by EU's program "Disappearing Computer". The partners are CID (Centre for User Oriented IT-Design), at the Royal Institute of Technology in Stockholm, INRIA (Institut Nationale de Recherche en Informatique et Automatique) and LRI (Laboratoire de Recherche en Informatique Université de Paris-Sud) in France.

The project aims are to study and develop, together with families, technologies that facilitate generations of family members living together. The objectives are to understand the needs of diverse families, to develop innovative artifacts that support the needs of co-located and distributed families and to understand the impact such technologies can have on families. interLiving is a cooperative design project in the Scandinavian tradition of working closely with the users throughout the whole design process (Bødker, et al., 1987,

Greenbaum and Kyng 1991) and also to work in multi-disciplinary teams. The users in interLiving are three families in Sweden, containing of 23 individuals in the ages between one and 76 (and two dogs!) spread out in eight households, and three families in France. The multi-disciplinary teams contained researchers from ethnology, psychology, graphic design, industrial design and computer science.

MULTI-DISCIPLINE AND TRIANGULATION

To understand many aspects of an individual's needs, goals, wishes and desires, and to give input to the design, we have chosen a multi-disciplinary approach that draws from both social science, computer sciences and the design fields. This approach, called triangulation (Mackay & Fayard, 1997) assumes that we will learn more if we experiment with multiple methods to investigate the same aspect or question. Each science has its own well-tried methods, which work well in its own context. Working in a multi-disciplinary team, as in interLiving, we had to break barriers of firm and grounded knowledge of how you do research and find new ways of working together, to blend the different methods and perspectives into joint multi-disciplinary research work.

This means for example that we collect material and generate data that normally is used in one discipline but here will be used by researchers with other backgrounds.

MATERIAL AT HAND

From these three years of close work together with family participants, the project has approximately 100 hours of video, 300 annotated photos, maps, diaries, artifacts, drawings, log files, prototypes, notes, drawings, e-mail conversations, letters.

The material from and about the users was collected in two countries. That means that the tangible material (maps, photos, drawings, diaries, etc) is scattered in two countries, usually stored on a shelf in an office. The non-tangible material (log files, e-mails, films, etc.) is stored on different servers. So, there are several geographical places as well as medial spaces for the data.

As another angle of approach to the material, we can group the collected data/material/stuff into two main categories; material made by families and material made by researchers



One of the installations of the videoProbe, one of the technology probes developed in interLiving.

of the family work. (Common for all the material is that it should facilitate the project to succeed according to the projects main objectives, that it is initiated by the researchers and finally collected by the researchers).

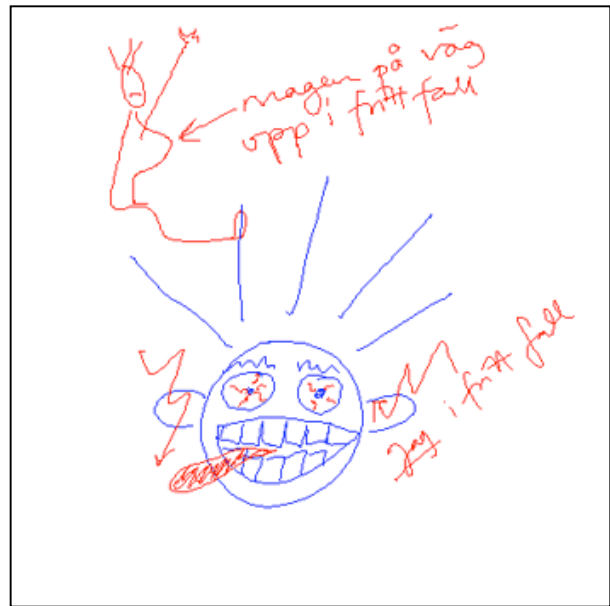
Materials made by families are: annotated photos, diaries, drawings (physical, digital), maps, films.

Materials made by researchers of the family work are: video recordings, descriptions, notes, log files, e-mail, SMS, illustrations.

This collection of different materials was gathered for specific purposes and during planned activities. Below we will describe examples of such activities that did not just generate expected material and data. The very same material gave us a possibility to 'extend' and 'reuse' it in a way we could not foresee.

Technology Probes

One aim of the project was to explore new design methodologies. With inspiration from the concept of cultural probe (Gaver & Pacenti, 1999) we developed *technology probe*, "which combine the social science goal of collecting data about its use of the technology in a real world setting, the engineering goal of inspiring users (and designers) to think of new kinds of technology" (interLiving Deliverable 1.2 & 2.2). The technology probes



A drawing made on the messageProbe describing how the woman experienced the evening at an amusement park.

were developed using the multi-disciplinarity both to make the probe, and, when used, feed the researchers with different kinds of data to inform the design.

One example of such a technology probe is the messageProbe, a shared drawing surface that is seen remotely on two or more locations (Hutchinson, H. et al. 2003). This was implemented with a Wacom interactive pen display connected to a Macintosh cube at each location. The probe was placed in the families' homes and used by the households for about a month. Together with it came a diary for the family members to write down thoughts and comments about the probe.

From this use we got a huge log file with all the digital data. Unfortunately, even the computer scientist found it difficult to read the file. In order to discuss the usage of the probe with the families (what was good, bad, fun, boring etc.) he created a program that extracted all the pictures made by the families, from the log. We then printed those pictures and brought them with us to the families to discuss the probe use. It is invaluable to have something common tangible and visible to refer to during such discussions!

It turned out that those pictures actually helped us a lot in understanding the families' communication more than their use of technology. The diaries with short sentences like "It is sooo fun!", "It really pisses me off when it doesn't work!" and "It is very nice but it takes so much of my time", helped us deepen our discussion of their thoughts and about technology and their way of using it.

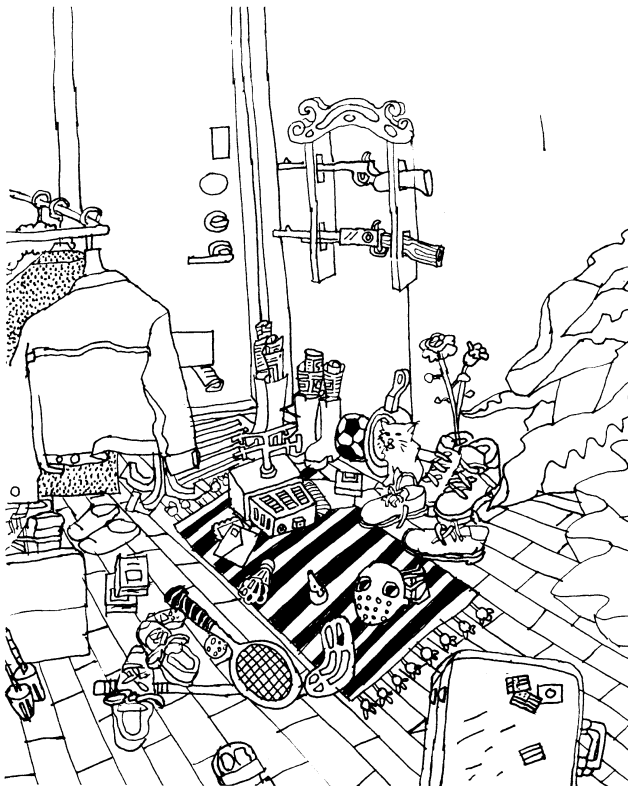
This is one example of a certain kind of material, the log file, that is normally generated for a the computer scientist to control that the software is working properly, but was

'reused' by the designer and the ethnographer in understanding the users communication and context. Perhaps this is more of an 'extended use' than 'reuse'.

Illustrations

At half time of the project we had to decide what design ideas, that had come up so far, should be developed further. We arranged a joint workshop in Paris together with both the French and the Swedish families. We wanted the family members to influence the decision of what prototypes that should be developed. For that we had collected lots of bits and pieces, mostly text and artifacts. We chose to use quotes from all the different meetings we had had so far. Of course, we made a selection that we believed showed the range of interests that had been expressed so far throughout the project.

We compiled a list of quotes from the family members that we thought reflected their different needs and desires and then designed "needs and desire cards". We were not sure they were inspiring enough and since there was only text on them they all looked very similar. We contacted an illustrator to make illustrations that reflected on the 17 different groups of quotes. We chose an illustrator, Henrik Färlin, with a style that we thought reflected the state the project was in. The drawings would be full of details.



One of the illustrations used to frame the workshop. Illustration Henrik Färlin.

After several rounds of discussion and sketching on how to set up the workshop we ended up just giving the families

the illustrations to work around, without the quotes attached. We realized that the illustrations actually could be seen as an analysis of the quotes. The visualization transformed the information into another medium that permitted new interpretations.

Interviews

All the interviews have been conducted in order to get to know the families, to inform us on a specific topic or to discuss something like in the example of the messageProbe. All interviews have been filmed, mostly to record the talking, but also give us all a shared understanding of the families homes, their own context. Most of the interviews have been conducted during the first year of the project (interLiving Deliverable 1.1)

During a workshop later in the project, parts of the filmed interviews were 'recycled'. Some scenes with interesting quotes by the family members were cut into a film to show at the workshop to all families. That was a way to share information about the project and about the individuals to all researchers and family participants.

WHAT CAN WE MAKE OUT OF THIS?

We have tried to show that it is possible to 'reuse' already collected material and data. But, in the interLiving design process the reuse was more ad hoc than deliberate. That should of course not be considered a failure or as if we had no clue what we were doing. But it would be good to have a better understanding from the beginning of the project of how to collect and store such a vast material, how to make it more accessible to all researchers inside interLiving (also outside interLiving).

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