"The Snatcher Catcher"– an interactive refrigerator

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ABSTRACT
In order to provoke a debate about the use of new technology, the Snatcher Catcher, an intrusive interactive refrigerator that keeps record of the items in it, was created. In this paper we present the fridge, and how we used it in a provocative installation. The results showed that the audience was provoked, and that few people wanted to have the fridge in their surroundings.

Keywords
Interactive, intrusion, provocation, everyday computing

INTRODUCTION
In a world where the intelligent home is on the agenda for development of new technology, designer and consumers has to ask the questions: How far are we willing to go? How intelligent do we want our own homes and our private spheres at work to be? Do we want our homes to register every movement, every action performed and to keep a log file over our behaviour and our lives? Finally, do we want our homes to know more about us than we do ourselves? In recent years technology that intrudes on our personal life has been developed, e.g. [2, 3]. However, ethical concerns in new technology are seldom discussed in technical forums. In order to promote a debate about issues like: where is the limit of intrusive technology, and when are we willing to give up integrity in our homes. As a provocative contribution to the debate we have made a refrigerator that watches its users.

THE SNATCHER-CATCHER
The Snatcher–Catcher is a refrigerator that keeps track of who took what and when (see Figure 1). One scenario for the Snatcher-Catcher is a common kitchen in a student dormitory, or in the kitchen at work. You come into the kitchen in the morning to get yourself a cafe latte and you open the door to the fridge and realize that someone has taken your milk. In your anger you shout: –Who the --- took my milk? Since the fridge keeps track of how moved items in it, it shows a film of the person taking your milk as answer to your question.

Figure 1 The Snatcher Catcher

The current prototype of the Snatcher-Catcher is implemented using a wooden frame with a wooden door, and uses sensors, a camera and a projector. The sensors keep track of the items if they have been moved. The

camera starts filming when the door is opened. If something has been moved during the time the door is opened, this is connected to buttons on the door. When the door is closed and a user press a button connected to an item in the fridge, the film is shown on a back projection screen on the door, which is only active when the door is closed.

PROVOCATION AS A METHOD

Provoke means excite, stimulate, pique or irritate. Provocation has been used in art since the beginning of the 20th century in the radical avant-garde movements. But design researchers also use provocation as part of their method. Gaver [1] invented the Cultural Probe, which is a package with different material "designed to provoke inspirational responses" from the users. Like a Cultural Probe, the Snatcher–Catcher installation is one way to trigger feelings about privacy and integrity, and also irritate and stimulate people to give us immediate feedback during the presentation.

"Most people feel an attachment to the place where they live and work; consequently they develop a protective attitude towards 'their' territory" [4]. When art, and especially provocative art, is placed in public places people tend to feel that they are imposed of something they had not asked for. It is often the same thing with technology. Technology that takes a great place, either in the physical space or in the mental space, is often found provocative. This is obvious during an initial phase of using technology, until we have got used to it. The mobile phone for example, was intrusive when it first was used in public spaces. Nowadays the discussions whether it is good or bad with people talking private matters loud in public are not as frequent as before.

The refrigerator is a natural thing in a work place kitchen. A surveillance camera in a fridge is not suspected. Even though the camera is there for 'your sake', to see who stole your milk, you might get upset to notice yourself being filmed every time you open the fridge door.

Our attempt is not artistic but to provoke people to respond to the idea with the Snatcher-Catcher. The provocative prototype is not one stage in a technology development of an intelligent refrigerator. It is more like a set of questions on what privacy is worth. By showing the Snatcher-Catcher we might find some answers to that through the audiences' comments and acting.

PRESENTATION OF THE PROTOTYPE

The prototype fridge has been shown twice, first at the Museum of Science and Technology in Stockholm as part of an exhibition on the disappearing computer theme, and the second time at a conference on Human-Computer Interaction as a demonstration. The purpose of showing the fridge prototype was to investigate the reactions of the audience. The audience was invited to approach the fridge by posters and by a presenter. The poster shortly introduced the context of the Snatcher-Catcher. The presenter acted as salesman of the Snatcher-Catcher as a part of the installation. The presentation was enthusiastic and the "salesman" talked about the possibilities of the technology used in the fridge. The presenter gave a brief introduction of the context of the fridge, and the problem the fridge was supposed to solve. Then the functionality of the fridge was demonstrated and the audience was invited to act as thieves and owners of items in the fridge.

Both demonstrations were video filmed, and the second time there was also a questionnaire handed out to the audience. We had deliberately made few and comparatively open questions so that answering the questionnaire would not take much effort. However, many of the visitors answered the questions more thoroughly, than we had expected, to be exact 31 out of approximately 75 responding.

REACTIONS

The four questions were: Your spontaneous reaction, Describe the Snatcher-Catcher with three words, Where would you like to place a fridge like this, and Can you see other usability for this kind of technical solution.

Most of the users had a positive attitude to the fridge. People were laughing when they were told the scenario and understood the use of it. They gave comments like 'this would really be something to put in our kitchen at work'. The reactions were predominately in the direction that the fridge would fill a need, and that it was a cool extra gadget. They could see many areas of use for it, but they would not like it in their own surrounding. It would be more suitable to place it 'in the girlfriends kitchen' or at someone else's workplace. Some people also answered by asking questions. –'Nice, but what do I do it the thief is bigger than I am?' and '–Nice, but is it possible to build a 'who didn't wash the coffee mug' too?' and '–Will I get my milk back if I know who stole it?' There is of course no good answer to these questions, but they show the difficulty with trying to solve a social problem with technology only. Interesting is that the positive comments are focused on some kind of justice (and perhaps revenge).

There were, however, some that where more doubtful. On the con side, the main objective was that the fridge was close in function to the dictatorship described in the novel 1984 by George Orwell. The feeling of having a Big Brother watching you everywhere was too close. The fridge was intruding the personal privacy. In the negative comments, focus lies within the personal integrity.

DISCUSSION

The main result we have seen from doing this provocation is that people do not seem to get that upset of being registered, as long as it not is in their close environment. The fridge was generally well met by the audience. Maybe the setting made the intrusion less. The audience is

prepared to be a bit provoked in a setting like that. They want to encourage and they want to be a bit surprised, and as persons working with technology, they have a general positive attitude towards technology.

One reason for the positive comments in the questionnaire could be that the desire of revenge and justice is higher, than the sacrifices you do with intruding the personal integrity. The reason behind this could be that the fridge is to far for being a threat to them. The reactions of not having a problem placing the fridge anywhere, except at their own home emphasise this. The question that raises then is how close is close enough?

In this study the audience were provoked, either giving positive or negative responses. An interesting question: how could we have made the fridge more intruding in order to get stronger responses from the audience? An idea is to make the installation in a real setting at a work place. Another idea is to make the fridge reacting on speech, so that the spontaneous reaction of the users is used for interaction.

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