The researcher's role at stake –

The meeting between the objective researcher and the subjective individual.

Abstract

In this paper, written for a course in Human Computer Interaction about ethnography informing design, I will through the empirical material from a field study, share reflections on technology development research. Specifically, I will look upon the self-reflection the researcher has to make when entering the field. That in return rises questions about the more general issue of the gendered researcher's role in technology development research and in cooperative design.

This paper has two parallel tracks. First, how can observation field studies inform the design? Here, the study made the research team understand something about small craftsmen enterprises. Second, taking a phenomenological stance to the observation, the track is about the researchers own reflections upon her self, her fellow researchers and the situation as a whole.

The study didn't give any specific or narrowed down input to the technology development project, as planned. But instead, this particular observation study at this small family enterprise, show the problematic matters that is always part of field observations. Looking at it from a wider perspective it reflect issues in cooperative design and the researcher role.

Background

It is not very often that you do observations in a field that you do not know much about and where you do not know what to look for. Most of the time, you have a hunch of where you are heading and you have questions to the context you are about to meet. In research technology development projects the focus in field observations are usually quite clear. In short, either you observe how people use technology in order to improve it, or you look for obstacles in the field that could be eliminated with technology.

This field study I am about to tell you about was conducted within the technology development project Daphne. The aim of the study was to find design ideas.

Cooperative design project Daphne

The field study was conducted within a research technology development project, Daphne. It is a three-year multidisciplinary project with a wide scope of interest. "The vision of DAPHNE is that of integration of devices into a universe constructed of a tapestry of different regions each offering different digital capabilities" (http://ada.sics.se/daphne/).

The research objectives are:
- To develop new theories and concepts to understand how interaction can be supported across a wide range of physical settings each offering different levels of digital support.

- To generate new design and evaluation methods appropriate to these technologies based on a combination of approaches from cognitive science, social science, and art and design.
- To create new devices to establish new relationships between users, activities and devices across a broad set of physical environments.
- To develop new forms of adaptive infrastructure to support heterogeneous environments offering different levels of support and enabling different classes of device as they move between varied locales.

The project aimed to work in a cooperative design tradition. Here I will give you a brief background to cooperative design. The cooperative design approach has arisen from a democratic stance, namely to bring in the users, the target group, the stakeholders, into the process of development. One fundament for its origin is the concepts developed in SIMULA in 1967. SIMULA was an object-orientated language. Looking at it retrospectively, SIMULA was perhaps not developed as a programming language but as a mechanism to communicate complex systems to users in their own words (Nygaard, 1990). Inspired by this approach the work performed at Centre for Working Life (Arbetslivscentrum) in Sweden, illustrated by the DEMOS (Democratic Planning and Control in Working Life On Computers, Industrial Democracy and Trade Unions) project, was a one approach to develop the concept further (Ehn, 1989).

These projects were starting at about the same time that co-determination laws were being enacted in Sweden. The method was called *work-orientated action research,* and in the DEMOS project working groups were formed with local unions, and the academic researchers acted as resources. The starting point of the investigations was always from the workers' perspective.

The democratisation of the workplace was brought about by employee influence through unions and collaboration with management in some Scandinavian countries. In the early 1980s the cooperative design projects focused on the skills of the worker and how these could be used as leverage to push computer system design more towards a user's perspective. The theoretical starting point was Braverman's (1974) assertion that the act of dividing labour and deskilling workers is dehumanising. Thus, the issues of quality of work and workers skill were put at the foreground of the system design projects. An example of this was the UTOPIA project (Bødker et al 1987).

Today the cooperative design approach is much about bringing in different work skills into the design process. Much work is done in multidisciplinary teams with ethnographers, industrial and graphical designers, computer scientists, psychologists, sociologists, artists etc. in order to provide for that as many perspectives as possible is being covered, to define the design space and to bring in the best (for every user, occasion and context) method to inform the design (Gaver et al, 1999, Westerlund et al, 2003, Sundblad et al, 2004).

Field study preparations
The purpose for doing observational studies within the early stage of Daphne was to investigate which users to work with in which context. This identification of users and context was to fulfil some of the objectives of Daphne. The observations in this sense

were open ended. But there were also the other underlying agenda of finding design ideas that could be fed right into the project. In a contradictory way, the observations were open-ended in terms of what to look for, but work related problems like logistics or communicational problems and technology was in focus.

The project decided to visit a work place that was noisy and dirty and that did not belong to the frequently studied work place areas in CSCW (Computer Supported Collaborative Work), like hospitals, offices etc. In order to generate as many design ideas as possible, we believed that the constraints in the physical context would be of help in defining and narrowing the design space. The choice of work place fell on a bakery that my work partner knew of, a family enterprise situated in Stockholm's near surroundings.

The study was conducted by two researchers; me the writer, with a disciplinary background in ethnology, and my fellow work partner D, with a background in industrial design. The decision of doing team based field studies derives form previous project work where we have found it unbeatable to share the same experience across disciplinary boundaries (Westerlund, Lindqvist & Sundblad. 2003, Sundblad (ed.) 2004).

In a pre-decided context, in this case the observation at the bakery, it is of utter importance that you reflect upon those matters to be able to understand what you observe and what relevance it has (Agar, 1980, Hammersely, 1995). We did not need to make any special preparations for this study in terms of clothing, language etc. But of course, one can not ignore the fact that before you enter a new situation, a new context (every context!?), you prepare yourself (Crabtree, 2003). You ask yourself on both a conscious and an unconscious level: What will I meet? How do I enter this field? Who am I? How will I be perceived and understood? You put yourself in relation to what you think you will see. And you act and behave in relation to that pre-understanding.

The bakery study

Below are the refined notes form the observation. I have kept them as complete as possible, to form a whole story, from which I can highlight some issues.

> It was a beautiful, though a bit chilly, Monday morning in the end of August. My work partner D and I met early, 7.45 a m at Stockholm Train Central to go to Hökarängen tube station and from there, walk to the bakery. We had to be that early because bakers start work very early in the morning, around 3 am. (That means that they stop work early too, at around 11 am.)
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> D had got a hand drawn map from Nils, the bakery owner, of where the bakery was situated. We walked from the modern shopping center area into an older more quiet living area with blocks of flats. Most of the blocks had business localities at the ground floors, some used for various enterprises, some seemed just to be closed down. Walking towards the address for the bakery, I really had no idea of what to expect. Was the bakery small or big? What do they bake? How do they bake? What people work there? Are bakers a certain kind?

We see the bakery through the fairly dirty big windows at ground level at the end of the street. The bakery occupies the whole bottom floor. One small airing-window is open and we can hear the noise from the work blended with the sound from a radio and the lovely smell of newly baked "whatever". We have to go round to the back of the house to enter the bakery.

The door to a hall like room is open and inside there is a man standing at some sort of counter, with his back towards the entrance. There are also three tall carriages with piles of baking sheets on them. D and I enter and the small room becomes crowded. D is saying that we should come and visit them today. From the rather confused looks upon the man's face, D continues with saying that he talked to Nils the other day and he said that it would be ok if we arrived at about eight or nine. The man, still a bit confused, says ok, welcome. Two small birds try to get into the bakery the same way we arrived. They picked some crumbs from the floor before the man shooed them away.

We enter the bakery from the small entrance room. The air is thick of lovely sweetness. You can almost taste it. There are four people working with baking, a small old man, a tall young man, the man from the entrance and a young woman. Nils hasn't arrived yet. He is out making deliveries, someone tells us. We stand quite close to the door. We don't know what we are looking for. The sound in the bakery is not very high. There is buzzing pulsing sound from the dough machine working in the back of the room, close to the windows. The tall young man is watching the dough and working with something at a fairly long and stable wooden working table. There are three other tables, one very long, stretching through the whole room. The legs of the table are made of metal and they look as if they can be changed in height. That doesn't seem to be done too often, though.

I feel just a little bit uncomfortable. I have the sense I am being in the way for their work. The girl starts talking to us as she is making cakes with fruit and jelly, on a table close to the entrance where we stand. She wonders where we are from, and I tell her what we are working at KTH (Royal Institute of Technology, Stockholm) and that we are working in a technology development project about human and computer interaction. She continues talking and tells us that she has worked here form November, and at her last workplace, a bakery in Sollentuna, they had computers to be able to print out marzipan with pictures on. She said that they always had problems with the scanner and the printer and the colors. "We don't have these kinds of problems here." She tells me that they do not even have a computer at this place. Not even a fax machine. Just telephones.

Among the first things the old man says, nodding to D, was,: "It is good when they are not too big. They are much easier to handle when they are smaller". He was referring to me. I can't remember in what context he said it. I think both D and I were a bit affected and surprised. I was just smiling and D commented that he didn't thought it had to do with size. The whole thing just felt embarrassing.

The old man has put a sheet with some brown chocolate dough on and one sheet with grated coconut. He is talking to D and me. He says that it is strange that if you call the chocolate balls *negerbollar*, you will increase the sale. (Direct translation of *negerbollar* form Swedish to English is *negro*

balls, a fairly old concept and I would guess not very politically correct even when it arouse.) The old man continues that this is so probably because someone reported a baker to the police for using that word. According to the girl, there was a person from Stockholm, who made a report to the police that a bakery in Sjöbo, a small community known for its anti-immigrant attitude, used the word *negerbollar* on a sign in the bakery window. Anyway, the selling of chocolate balls has increased it said in the paper. D comments that that is probably just in Sjöbo. And yes, everyone agrees. You can't call them *negerbollar* in Stockholm. The old man says that it is strange because they have always been called *negerbollar*. He thinks this fuzz is just rubbish. The girl agrees.

Some time later, the old man was working with a part of the dough that was ready in the dough machine. He was going to do twists and was preparing the dough in lumps. "A dough is like a woman. It makes resistance in the beginning". D comments, mostly to me, that "the jokes here are a bit old fashion". No one seemed to hear his comment.

I notice that there are a lot of naked ladies on the walls. There is a billboard with photos of nude Asian girls and some postcards. Of course, one post card looks like a cinnamon bun, but the rest are of more or less naked women. On one photo there is a small Asian woman or girl, hard to tell, sitting in a big western man's lap. I found it difficult to examine the pictures thoroughly.

There are at least five calendars on another wall. Only one seems to work as a calendar. That is the one closest to the "office", the calendar with dates on. The other ones is showing bikini-girls. The dates have expired a long time ago.

The "office" is a table overloaded with papers and telephones and other stuff. There is a calculator in a plastic bag and pens and notes everywhere. Lars, the man we first met in the entrance, is sitting at the office most of the time talking in the phone, sometimes to customers and sometimes the conversation seem to concern more private matters. All of a sudden, he could say:

"Ok Ida, (the girl) do you think you can make some *prinsesstårta* (princess cake)?".
Ida: "Is it urgent?"
Lars: "No"
Ida: "Ok!"

Then she starts working together with the young tall man. He is taking care of the other part of the big dough, the part that is not going to be twists. He is cutting them up in pieces and put them on a scale. He weigh them and then throw them onto the longest table in the middle of the room, where the old man grabs them, kneads them, rolls the pieces out, puts them on red plastic plates with small bumps in, puts the plates, one by one, with the dough in a bun rolling machine for 10 seconds, takes the plates out and throw the buns onto another table. He does that with all the lumps until he almost had a whole table with buns. He rolls them long and then let them ferment under a big cloth.

Lars rolls them out and takes five rolled dough lumps at a time to the rolling machine and let the dough roll through thee times, if I remember correctly. The machines looks like a light metal mangle. Every time he lowers the cylindrical roller. The dough gets bigger and bigger and the thinner and thinner. He doesn't have to stop the machine when he grabs the dough. D and I are fascinated that the dough never seems to stick anywhere. Lars can hold five lumps at the same time and put them on top of each other and they never stick together. He puts the rolled dough onto the long table and puts different kinds of paste onto the dough and then Ida takes care of them and rolls them out them on trays. When a tray is full, five pieces on each, she takes a scissors and cut each piece in one cm slices but only half way through the roll. She bends the first slice backwards to the right, the second backwards to the left and the third backwards and in the middle. The last bit she bends under the flat bun. She presses the whole flat bun so the slices are a bit more as a whole. I can see that she has done this many times before. It strikes me that they are talking quite a lot to each other during their work, but almost never about work.

Every tray is put into the freezer until tomorrow morning. Then the fermentation takes place. Nils, the owner is arrived, and he shows us that they actually have a computer that is the freezer and that can be programmed for fermentation. There is a bit of dough over and Nils does cinnamon buns and puts them in another freezer, because the programmable freezer is full. I can tell that Nils have done quite a lot of buns in his days. He makes them real fast while he talks and laughs continuously to us and to the others.

Analysis

I see two interesting paths to walk through this very long story I have put forward here; the technology development path and the path that leads to me, the observer. The technology path was tread up for Daphne reasons. The other path comes from the strong feelings of prejudice and ignorance I was overwhelmed by and could not reject reflecting upon despite the preparations and my own experience. These paths are referring back to and heading towards the same information and understanding. This is an attempt to analyze the story with a phenomenological approach.

Phenomenology
Phenomenon means *to appear, to show*. With a phenomenology alignment, research starts off with the 'thing itself'. Edmund Husserl (1859-1938) meant that we can not capture a description of the real phenomenon, but merely the individuals experience of it. We all experience the world through the phenomenon, through the 'thing' as it shows. If we want to know anything, we will have to go back to the phenomenon. Husserl meant that you can not put your own pre-understanding aside, that phenomenology is a theory about the conscious. (Stanford Encyclopedia of Philosophy)

Maurice Merleau-Ponty (1908-1961) who has taken the phenomenology further, meant that to capture the phenomenon we must see beyond the understanding of the world as objective, and instead experience a 'lived world', He turned strongly against the Cartesian division of mind and body (Merleau-Ponty, 1997). There is no objective mind, no pure conscious, no free *subject*. It is through the undividable body that we

perceive the world. I will use the phenomenological viewpoint to investigate the meaning, the sense-making, of what I experienced.

Reflection
To be reflexive is central in any research, or at least should be. In the meeting with the Other (informant, research object) the researcher's self is there all the time (Ehn & Klein, 1994, Wolcott, 2001). Ehn and Klein shows through the anthropologist Bronislaw Malinowski's (1884-1942) own private diary from the Trobriands, how the researcher Malinowski differs from the person Malinowski. In his own diary he calls the informants "bloody niggers" while in his scientific writing he portray theirs lives impartial (Malinowski, 1967). He thinks like two different persons, the racist white man and the broad-minded researcher. In his personal diary, the two roles can meet and talk more freely about the things that in a scientific work would have been impossible. Today, the reflexiveness is part of the ethnographic scientific work. I think of reflexivity as the thinking of my own thinking, which is part of the creation of understanding, part of creating meaning (Babcock, 1980).

Body
There is a body's dilemma. We can think of the objective body, but that is merely the idea of the body. The body itself is not an object or a thing that is just there. Nor is it the subject, the free mind. The body is what we have to be in the world and perceive it. But I, my body, is also an object. I can think of myself and reflect upon what I believe is the world's understanding of me.

It is so easy to see the gendered body and make our understanding grounded upon that. According to our knowledge of what the sex is and to the connotations of female and male, we predict and understand a body. The sex (together with age, race etc) is what we use to divide and understand people. The visual aspects of the body very often it gets in front of the understanding of the individual.

The role of the researcher
Mostly based on my own experience, but also on studies within the field of technology research and specifically within cooperative design, the role of the gendered researcher is not discussed (Fritz, 1999, Berner, 2004, Ilstedt, 2004). Breaking down and/or visualise power relations is one of the supporting thoughts for cooperative design. Bringing in users in the design process, taking 'the little man's' party is fundamental. Somehow, gender issue is forgotten when it comes to investigating and understanding power relations in theses kinds of projects in a cooperative design tradition.

When it comes to the researchers role in cooperative design, there are no discussions about the ruling norm what so ever. The parole is that we are all equal, but some more than others! To me, this study rose both theoretical and methodological questions about the role of the researcher and reflection about gender. How do we perceive the role of the researcher? What connotations is the role carrying with it in this field of technology research? How can researchers within this research field examine themselves from a gender perspective? How can we prepare not to be surprised by our own prejudice and pre-understanding?

Change of focus
"It is good when they are not too big. They are much easier to handle when they are smaller".

The first joke the old baker said nodding to my partner made me very aware of me being a woman and my partner being a man. Of course I know that, but that is not how I see us when we work. Of course, there are other more important qualities that we have and that I see in a work relation. My and my partner's bodies were in the way for the baker to understand us as researchers with bodies without gender. Perhaps he didn't know, perhaps he didn't care.

That joke was also the starting point for my change of focus, deliberately or not I don't know. I started to look at the bakers representing their sex and age. My eyes were drawn to the pictures on the bulletin board, the tiny Asian girl in the lap. I was aware that they had several calendars at which the dates had expired. They were only left on the walls for the pictures.

At later discussions with D, he told me he had not noticed the pictures on the bulletin board or that the dates of the calendars had expired. He had instead observed the technology they use, all the equipment the use for bookings and book-keeping etc. I don't know whether he was disturbed by the joke or not, but his observations were focused on work and technology. He noticed the things we were after, communication and technology.

Instead of just being the observer, I had, through the old mans comments, become the object for observation. I was transformed from a *researcher* in a technology development project into a *woman*. Suddenly I was not the working professional anymore, but merely myself. The two views clashed and I became aware, even at site, that I registered other things, other signs, than I had set my mind to do, and that also made me look the baker as just a dirty old man, rather than a skilled baker.

The language we use to conceptualize the world to make it understandable, also show how it reflects back on us (Barthes, 1997). In our bodies we incorporate the connotations that is related to concepts we are surrounded by. When I am going out on a site to do field work I will of course reflect upon who I am and what I might appear as in the eyes of the other. That is part of my job as a field-working ethnologist. But one connotation to *researcher* is sexless or a body without a sex. That is I how I conceive the concept and being a body without a sex is part of myself in the researching situation.

The old mans jokes, coming out of now where, took me by surprise. I was disturbed and also a bit offended perhaps. The jokes were addressed the two bodies with a sex and a gender, to my male work partner and to me. It made me realise that we seldom talk about sex or gender issues at work, and we never discuss it in relation to our own research groups and cooperative design.

Prejudice
I felt I could be indulgent with the old man. Nevertheless, all his summed up comments made me very sensitive to certain traces in the bakery. I do not think I would have paid much attention to the story about the *negro balls*, if it hadn't been for

the first sexist joke. The change of focus was not just from communication and technology to gender related aspects, but also towards the bakers as well as my own prejudice. The old man set the prejudice agenda and the others didn't really agree nor disagree with his jokes or comments.

And I was wondering what the baker girl thought of it? Did she care? Did any of the other bakers care? Who had put the pictures on the wall? Did all of them agree on letting them stay there? If so, is it just in my world that I find calendar girls on the wall a bit old fashion, belonging to a time of hard working men in male environments?

Ida had only been working in the bakery for about 6 months or so, she was the newest employee so she was not the one who had put the calendars on the wall. My own prejudice tells me that that it is something that men do, preferably older ignorant men.

Any results for the Daphne project?
So, could this bakery environment be helped with new "devices to establish new relationships between users, activities and devices" or with "new forms of adaptive infrastructure to support heterogeneous environments"?

The bakers' skill and their craftsmanship was most certainly the hub around which everything else in the bakery turned, the technology as well as the economy and logistics. Their skill is not just the making of pastry and bread but also knowing when to do things, how fast and how many. Their skill is also concerned with the fact that they know each other and have different positions within the team. The owner and his son were more concerned with economy and logistics, while the other three could concentrate on the baking.

Ida tells us that at her last workplace, a bakery in Sollentuna, they had computers to be able to print out marzipan with pictures on. She said that they always had problems with the scanner and the printer and the colors. "We don't have these kinds of problems here." She tells me that they do not even have a computer at this place. Not even a fax machine. Just telephones. I think that she means computers as in screen, keyboard and hard disc, because I can see the big oven with digital figures and buttons on and I suppose that it is computable. The bakery had a computerized baking oven and a combined computerized freezer and fermentation room. The computerization is for timing things, like when the freezer turns from freezing to fermenting, or timing the buns in the oven.

When we leave the place, I and D discusses on the way back that a small place like this is better off without technology like ICT and computers that will complicate the work. They use the telephone to communicate with each other and with costumers. They are such a small work place and all of them, except for the old baker, works every day. Nils have had it for eight years and his son and the old man has worked together ever since. They all know what they all have to do and help each other with.

This environment doesn't need a lot of information help since the bakers know exactly what has to be done at all times. They don't have to negotiate every task. They just know because they have done this so many times, even if what has to be done shifts according to season and payment day. If they don't know what has to be

done, they can just ask each other. The only time someone didn't knew what to do, like Ida when the telephone call came about the princess cakes, it had to do with planning. How urgent is something compared to something else? How they will do something is never negotiated.

D and I discusses it would be more interesting from a communication technology point of view to study a bigger bakery with about 20 employees and also a huge bakery industry. There is probably other staff at such places that takes care of orders and wages and so on.

Summary

I have been trying to describe two ways of looking at the empirical material gathered within the frames for the Daphne project. Through a phenomenological stance I have described how the observational study of a bakery, with the purpose of defining a design space, can change direction from work and technology to an observation on gender, body and the reflective self.

The researcher, the observer, is always making an entrance in to the context. The physical appearance, such as gender, ethnical heritage, height, weight, clothes etc, will always make a difference. It is through our bodies that we perceive the world and it is through our bodies that we present us to the world. What I perceived in my observation, my experience, is shaped of who I am and what I am at the moment for the study. I can just observe what my body can live. In return, the story of the observation will be yet another matter. That is the story of me the researcher, trying to observe the organization of work and labor, but ending up being unmasked as an offended woman.

This rose questions, rather than answers, about the researchers role in technology development research projects in general and in cooperative design particular. The male norm is so strong that it is not even discussed, even though we all know that there are differences in how we perceive the researcher depending on the sex. I was so sure in my role as a researcher that I had not reflected upon theses matters myself. I guess I am socialized into this world of plain researchers, without a gendered body, without a sex, that I could not do my work properly. It took a field observation to wake me up.

What about the results for the Daphne project? In fact, we couldn't use this study in a sufficient way. The supposition made about how the constraints in the physical environments (heat, cold, dirt, noise etc) would help us find an interesting design space for communication or information technology failed because of the nature of the work in such a small enterprise. To look at a bigger company with more people could have helped us, or to go really deep into the skill of baking, to see if there are any technology that could help the bakers in their daily baking activities. But to find that out, that would take more than a just a one day of observation.

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