

# Challenges towards the Design of Locative Media for Supporting Interaction Spaces for the Ageing Society

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## ABSTRACT

The position paper highlights challenges when applying ethnography within the design process of ICT for the ageing society. We show that an in-depth investigation of the every-day life of the elderly is essential. Especially when regarding the fact that we cannot talk about the elderly as one homogeneous group but rather as individuals. In our paper we present an early approach on eliciting relevant aspects which have to be taken into account when designing for the ageing society. These are aspects which help to identify and operationalise the different groups and their needs and by this help to design technologies which better meet the needs of the target groups. However this position paper focuses primarily on an aspect which is only seldom addressed though, drawing on our experience, it is an aspect which should be brought to the discussion board: the barriers and challenges of getting access to the field in focus for applying an ethnography-based design approach. Grasping an adequate communication mode from researcher to the prospective design process participants is inherently linked to individual conducts of life.

## Categories and Subject Descriptors

H.5.0 [Information Systems]: Information Interfaces and

Presentation (e.g., HCI) – *General*.

## General Terms

Design, Reliability, Human Factors.

## Keywords

The elderly; every-day living; ethnography; user centered design; field access; end user development

## 1. The “social side” of health and its importance for the elderly

### 1.1 The “social side” of health and the elderly

The European population is getting older and the number of adults over 65 will rise even more over the next years. This will have an immense impact on the level of professional health care services needed. In domestic pervasive health projects mainly the

improvement of physical and mental health aspects are in focus, but social well-being often is not sufficiently paid attention to, which is the third component of health defined by the WHO: Health is “[...] a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” [1].

As all three components affect each other there is not only the relevance of embedding domestic health-support technologies strongly in the everyday life of elderly people [2] which demands for research of real practices and routines of every-day life for applications being accepted and willingly used. Moreover, the social interactions of elderly people in their living environments should come more into the focus of domestic technology development, e.g. comprising everyday life in the neighborhood.

Another important aspect which is often not respected in technology development for the elderly is that “the elderly” are as individual as cohorts of younger age. This means that we have to face a huge variety in backgrounds, interests and possibilities related to the adoption and appropriation of new technologies.

Focusing on the social side of health also sheds light on income-related health issues. The main approaches in pervasive health projects center upon well-educated and higher-income earners, sometimes called the “silver economy”. With this skewed research focus, a huge percentage of poor older persons are out to the periphery. Even in industry countries poverty is a reason that older adults with special diseases suffer more and die earlier because they cannot afford better treatment.

### 1.2 Developing technologies for the elderly

To meet the requirements of supporting social aspects of health of older people a local range of supportive offers and services is essential. Moreover, a supportive environment also comprises being in good hands in communities and interest groups, e.g. in church congregations. This approach also promises to be able to design light-weight and cost-reduced technology to support social interaction as a combined ‘technology and community development’. The approach chosen may build upon resources and help structures existing in the neighborhood, in family structures or in organizations.

This is the frame of our project: the support of the daily living of elder people with a special focus on community support by ICT. After a first orientation phase of discussing our project ideas with

local care providers, doctors, social workers, and housing companies, we started our empirical phase in different living environments, such as an old-peoples' home, in an assisted living environment and in an apartment building for elder people in which no special services for the elderly were provided.

## **2. Need for ethnography-based methods in health-related ICT development**

In domestic health ICT projects researchers value user-centered design approaches and often use interviews and observations of participant users in their requirements elicitation and system evaluation. These phases of empirical data gathering often serve to improve usability aspects [3]. We would like to stress the point that ethnography is more than evaluation and usability testing and that it is extremely important to understand domestic routines of older people. One must find anchors in their daily living which, from their point of view, seem to be adequate and important to technology support. In our very first contacts to the field we experienced a vivid example for this claim: We learned that the phrase "independent living" must not be taken for granted since there seem to be many different nuanced views in defining what independent living means to older persons and which degrees of support for them seems desirable. Extended ethnographical phases in the beginning of a research project therefore have the potential to enrich taken-for-granted research concepts and research goals from a subjective and practice-based point of view. This is especially important for domestic ICT research and development, as – in contrast to organizational field sites – it is much harder to attain knowledge about domestic routines for these also often are taken for granted and unremarkable by research participants [4].

## **3. Challenges in accessing the focused field**

### **3.1 First steps of our field study**

For our approach of ethnography-based product development of home technologies in the neighborhood, we first looked for organizations to support us and help us with contacting older persons who would not only give us in-depth interviews but who, in a later stage of research, would also be interested in co-developing and using our prototypes.

For that purpose we conducted several meetings and interviews with housing companies, care providers, doctors, and social workers. Finally a concierge of a housing company started to contact tenants in a local quarter for us. In the meeting with the housing company people we handed out the concierge a flyer for distribution which displayed a sketch of our technology visions of pervasive ICT in the home and neighborhood. The company personnel reacted very skeptical towards the flyer, saying that the elderly would be put off by the technology visions for two reasons: first, due to the fear of being forced to spend more money on housing services and second, because of their general low affinity to technology. Surprisingly, the next day the concierge gave us the addresses of 5 persons who had indicated their willingness for interviews (out of a higher amount of people who refused to talk to us). But the pre-arranged day for the interviews showed up in a quite unexpected way: When we arrived at the housing area 4 of 5 respondents did or would not open the door. In one instance a woman opened the door but directly reported that she and her neighbors were not at all interested in new

technology mainly because of their low pension that causes chronic economic hardship. And yes, health conditions could be improved, she reported, but she would still be "too fit" to get reimbursements by her health insurance for special health services. Furthermore, she discredited herself as being a good contact person with regards to technology related questions since she has never taken an active interest in technology. After we clarified our interests of getting to know her subjective view on her every-day life and not to discuss detailed technology ideas she finally agreed to an interview.

### **3.2 Reflections on motivations for elderly people to participate in technology development projects**

In the very beginning of our field study we were confronted with rejection toward our research goals that made access to the field nearly impossible. We experienced the need to be clear about what motivates people to actively contribute to the development of new technology that supports their daily live. The intrinsic motivation on the part of the participants could be the understanding that the result of our work can make their lives more comfortable and secure. Intrinsic motivation cannot be influenced directly by other people, but building trust could be a way. Our approach via the concierge failed, maybe because of a lack of trust in his relationship to the tenants and a missing understanding of why new technologies could be helpful in their daily lives.

Learning from this setback, our next approach will be to find other institutions in the area which may function as "door-openers" by means of their trustful relationships to the people, such as from church and care providers. The clarification of motivational issues of older people to participate in our design process will continue to be an ongoing task in our research.

This means that we need to find "boundary-objects" [4] in our very first communication with older interview partners which help to reflect on their social interaction realms (and later on ICT application scenarios) from their point of view.

This is a general challenge in the field of ambient home technology development in contrast to organizational settings. Here, access to interview partners and the communication of the goals (mainly the improvement of existing technology) is much easier than in an area where technologies and related new practices and routines are still in development [5].

In-depth interviews and observations in the home environment of older people are therefore a necessity identifying individual perspectives of life which can serve as anchors in the further communication and, subsequently lead to a communication about meaningful technology support in the home. This also means to slow down the communication of our technology vision. In contrast we should focus on everyday life in the first interviews with the older people.

### **3.3 The notion of "space" in designing locative media for the elderly**

Searching for adequate boundary-objects as individual anchors of the peoples' lives with an analytical "lens" of spatiality is one fruitful way of conducting related research. The trace of the metaphor of space is helpful as it motivates the understanding every-day routines, organization and social needs of elderly

people. In ICT design the “spatial turn” research, such as (Dourish 2006), has directed the view towards the relation to the perception of physical and virtual spaces and in the interplay of spatial contexts, meanings and experiences in relation to ICT. The spatial metaphor directs the view towards space perception, appropriation and use, on one hand related to non-mediated interactions, and on the other hand also in the context of actively producing new spatialities and transforming spaces by new media (6).

Appropriation and use of space are inherently bound to the “anchors” we were (and still are) searching for in our qualitative research. A noticeable aspect which occurred in many interviews was the space of time in regard to the individual life experiences of the interviewees. Recalling former experiences (“recall spaces”) took a huge part of the interviews. Two other dimensions we found out to be important and in different aspects linked to spatial routines were “independence” and “interests”. There were different perceptions of how defining and grasping independence and of which kind of support was desired. The dimension “interest” (of using new technologies, but also in terms of hobbies and the participation in social activities) analogically subsumes a wide-spread variety of aspects. But it seems to be a fruitful focus in relation to space use and appropriation for the operationalisation of the wide-spread group of the elderly for technology design we will elaborate on in further research.

#### 4. Conclusion

Ethnography-based approaches may serve not only as fruitful

methods to better understand nuances of every-day life of the elderly, but also address and support intrinsic motivations of the peoples’ engagement in related research projects. Further research towards motivation which secures ongoing participation of older people in the development process is needed.

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