Old Adults and Robots

Frennert, Susanne

2012

Old Adults and Robots

Susanne Frennert
Certec : *Division* of *Rehabilitation Engineering* Research in the *Department* of *Design Sciences*,
Faculty of Engineering,
Lund University
Sweden
Susanne.frennert@certec.lth.se

Abstract
What happens if you put assistive robots in the hands of old adults? Will they accept or reject the robot? If they accept the robot, in which ways will the robot change the everyday lives of old adults?

Old adults have a lifetime of experience technological changes. Seniors have adopted as well as rejected new technological advances in the past. If domestic assistive robots are adopted and adapted by seniors, then these robots will affect and will be affected by the social interaction they meditate. In order to understand how robots might support seniors in the future an understanding of the meaning of domestic assistive robots in their social context is essential. The primary research goal of the PhD project is to examine the ways in which robots can take on social meaning in the lives of old adults.

Author Keywords
Position paper; workshop; elderly; everyday practice; assistive robots

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

Introduction

At the moment I am a PhD student at Certec the *Division* of *Rehabilitation Engineering* Research in the *Department* of *Design Sciences*, Faculty of Engineering at Lund University in Sweden. In the past I have been working as an external lecturer at ITU teaching accessibility and usability (with Simeon Keates) and at the university of Malmö teaching usability and project management (PMI). The teaching has given me experience in lecturing, running seminars, and individual tutoring. I have also been freelancing as a professional field interviewer at SIFO (SIFO is a non-bias governmental institute that conducts consumer research and testing) and at Aging Research Center (a multidisciplinary centre that is a collaboration between Karolinska Institute and Stockholm University) interviewing more than one hundred elderly about their everyday practice and life.

I'm experienced in the field of usability engineering, and have in the past, on behalf of SONY R&D, UK, carried out a usability evaluation of EPG (Electronic Program Manager). Prior to this I was employed as a usability engineer at uNeed AB in Malmö, which included contribution to user experience research and design, using a variety of methodologies including cognitive walkthroughs, expert reviews, heuristic analyses, card-sorting, observational research, and in-person interviews.

I have a B.Sc. in Cognitive Science and a M.Sc. in Ergonomics and Human Factors, University College of London (UCL).

Current research

The aim of my PhD project is to explicate old adults everyday practice with assistive robots and to gain an understanding of the process of domestication of assistive robots in old adults home. Qualitative research methods such as participatory observations, contextual inquiry, photo diaries and in-depth interviews will be used to elicit narratives describing the domestication process or rejection of assistive assistance. The analytic approach in my research is inspired by Roger Silverstone et.al's theoretical framework of the concept of domestication, where the user is seen as an active consumer, taming new technologies by defining its nature, scope and function [1] [2].

The research is situated within two user driven design Projects: GIRAFF+ and HOBBIT. The GIRAFF+ Project focuses on developing a robot that combines social interaction and long-term monitoring to promote independent living. The HOBBIT Project focuses on developing a robot based on a mutual care concept. The hypothesis underlying this concept is that a user may accept the robot more easily if the user is needed, and from time to time has to help and teach the robot how to perform its services. The prototypes (HOBBIT and GIRAFF+) will be evaluated in a lab setting as well as at old adults home.

I will do, in parallel to Girraff+ and Hobbit, a two-to-three year longitudinal study involving vacuum cleaning robots (iRobot Rumba). The aim is to explore how assistive robots can transform from being a novel innovation to becoming an artefact that becomes embedded in the everyday lives of old adults. These are small robots that can be used to clean selected rooms

in a home but in the future these may be followed by larger and smarter robots with accessories such as arms that can do dusting, tidy up, fetch and find items and smarter programming for alerting family or a help units if it perceives there is a problem and remind when it is time to eat, sleep or take medicine etc. [3]. By understanding the process of the rejecting or adoption of small vacuum cleaning robots we may increase our understanding how assistive robots get integrated into the structures, daily routines and values of old adults. This knowledge will increase our understanding of human nature and behaviour as well as offer insights in how to develop new, better, more appropriate and interesting domestic assistive robots for seniors.

A qualitative multi-method approach will be applied, and each method will be complemented by other methods for validation. The three projects: Giraff+, Hobbit and iRobot will be carried out simultaneously and the understanding and information gained from each project will feed into each other.

Ethical and moral issues of the findings will also be discussed. "How might the entrance of robots into our homes changes us as people"? A successful adoption of assistive robots may affect collective norms such as the domestication of the mobile phones has had; we feel that we have to be available all the time anywhere [4]

My contribution to the field

I started my research in January 2012 and so far I have been collecting data by the use of multiple methods; questionnaire, workshop and interviews to capture perceptions of assistive robots, in how old adults imagine the potential role of assistive robots (or lack of one) in their lives and their resistance (for some) to its acquisition. I have been accepted for an oral presentation of my findings (so far) in October at the International Conference of Social Robotics in China and a poster presentation at NordiChi in Copenhagen.

Why would the workshop be relevant for my current research?

At the moment I am asking my self; when and how is age relevant? For whom? I would like to understand more about the cultural constructions of "elderly", contemporary identity theory and age and how age categories are being mobilized. Another concern is; is it possible to develop appropriate, desired and interesting domestic assistive robots for seniors?

My reasons for participating in the workshop is that I hope to learn a lot about elderly and methods that I can use in my research as well as to meet other people who are interested in elderly's daily practice.

Conclusion

I would appreciate the opportunity to attend the workshop and share my experience and learn from others.

References

[1] Silverstone R, Hirsch E (1994) Consuming technologies. Psychology Press,
[2] Berker T, Hartmann M, Punie Y (2006) Domestication of media and technology. Open Univ Pr,
[3] Severin EO (2003) Robot companions: mentorbots and beyond. McGraw-Hill/TAB Electronics,
[4] Turkle S (2011) Alone together: Why we expect more from technology and less from each other. Basic Books (AZ)