

Interaction Design for Older People

This paper explores the conceptual aspects of interaction design for older people in context. Discussion is grounded in interdisciplinary research from the MyUI project.

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Introduction

This paper highlights an approach to promoting e-Inclusion which focuses older users in context. It is based on research conducted as part of the user-centred, collaborative work of the MyUI project (Mainstreaming Accessibility through Synergistic User Modelling and Adaptability). The research has raised important conceptual issues during its conduct, particularly regarding the 'practical ethics' of modeling disability and age-related impairments. In short, there is no neutral language with which to describe disability [1, 2, 3], as such all research is conducted through a particular ideological lens. In this interdisciplinary and cross-cultural research, the application of critical perspectives, grounded in social theory and disability studies, has offered fresh insight into the conception of impairment and disability amongst the technically-based prerogatives of human factors and HCI research. This paper introduces the MyUI project and the value of applying post-structuralist approaches from critical disability studies for human factors research.

MyUI

MyUI is a 30 month EC project funded under Framework 7 of the European Commission that looks at the ways in which interfaces may be able to detect and infer accessibility barriers and user preferences. We explore how systems can then self-adapt to meet the requirements of individual older users, particularly those affected by stroke or dementia, in their own homes.

As an EC project, MyUI has specific aims and objectives:

- To establish user requirements and context to provide technology that self-adapts in real time.
- To expand the horizons of Universal accessibility by producing re-usable components and guidelines which allow the development of personalised and self-adaptive interfaces for ICT.
- To develop an interactive prototype TV platform that delivers 3 applications at home: a television service, a social networking application and a digital exercise service. These applications will demonstrate self-adaptive interfaces that are accessible to all.

In this way the project is developing adaptable accessible networked services for communication, exercise and entertainment that are delivered through interactive TV. MyUI relies on user input and rich qualitative feedback to gain an in-depth and ecologically valid

understanding of older users, their environments, their objectives, their existing use of relevant technologies and hopes, difficulties, preferences and achievements in their use of technology.

This end-user input is informing developers at every stage of the MyUI project, resulting in an ontology-based context management infrastructure that collects user and context information in real-time during use. As a result, user interfaces self-adapt to an evolving model of the individual user and their environment. The MyUI adaptation engine relies on empirically based design patterns for specified user and context characteristics. By collaborating with users in-situ, MyUI seeks to developing accessible and bespoke services for all.

Conceptual Challenges and Opportunities

In addition to these technical and practical research objectives, as part of the collaborative process significant inter-disciplinary and conceptual challenges are implicitly negotiated. These relate to epistemologies, theories of knowledge, as they are understood in the social sciences. In particular, conceptual challenges exist in relation to disability and impairment and the necessity of recognizing the complex and situated nature of disability.

Within human factors design there can be a tendency to migrate towards medical approaches to age-related impairment. This is because frequently medicine appears to offer the most coherent system for categorising difference. The social model of disability is often offered as the alternative to this system. However, critical disability studies also highlight alternative views of disability and impairment, highlighting socio-cultural, discursive and post-modern approaches, with powerful applications in the design process. These perspectives uphold the salience of user engagement, attention to context and allow purely diagnostic approaches to design to be challenged. However, the critical project, in which ambiguity is actively pursued to advance design goals, can sit at odds with definitive aspects of user modelling, for example through persona, scenario or design pattern.

Over the course of the MyUI project, this tension has been scrutinised, leading to an engagement with a Foucauldian *practical ethics* [4] and Derrida's notion of *undecidability* [5] for user modelling with respect to older people. This paper introduces these two notions that encourage attention to the what we attend is the 'main danger' [6] in design; modelling to archetypes can obscure the true, ambiguous nature of disability and impairment. In this way we encourage a deconstructive process that attends to 'who is missing' in the persona, scenario and pattern to find a practical and ethical point of departure when using these tools.

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