



HAL
open science

Cross Cultural Differences in Designing for Accessibility and Universal Design

Helen Petrie, Gerhard Weber, Jennifer S Darzentas, Charudatta Jadhav,
Zhengjie Liu

► **To cite this version:**

Helen Petrie, Gerhard Weber, Jennifer S Darzentas, Charudatta Jadhav, Zhengjie Liu. Cross Cultural Differences in Designing for Accessibility and Universal Design. 16th IFIP Conference on Human-Computer Interaction (INTERACT), Sep 2017, Bombay, India. pp.518-520. hal-01680230

HAL Id: hal-01680230

<https://inria.hal.science/hal-01680230>

Submitted on 10 Jan 2018

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution 4.0 International License

Cross Cultural Differences in Designing for Accessibility and Universal Design

Helen Petrie¹(✉), Gerhard Weber², Jennifer S. Darzentas^{1,3},
Charudatta Jadhav⁴, and Zhengjie Liu⁵

¹ Department of Computer Science, University of York, York, UK
{helen.petrie, jenny.darzentas}@york.ac.uk

² Department of Computer Science, Technische Universität Dresden,
Dresden, Germany

gerhard.weber@tu-dresden.de

³ Department of Product and Systems Design Engineering,
University of the Aegean, Ermoupoli, Greece

⁴ Accessibility and Inclusive Design Group, Tata Consultancy Services,
Mumbai, India

charudatta.jadhav@tcs.com

⁵ Sino-European Usability Center, Dalian Maritime University,
Dalian, People's Republic of China

liuzhj@dlmu.edu.cn

Abstract. This workshop brings together researchers and practitioners interested in cross cultural differences and cultural sensitivities in accessibility, assistive technologies, inclusive design and methods for working with disabled and older users. It will provide an opportunity to discuss and debate the opportunities and challenges for developing accessible and usable technologies for people with disabilities and older people in different cultural contexts.

Keywords: Cross cultural differences · Cultural sensitivities · Accessibility · Universal design · Assistive technology · Users with disabilities · Older users

1 Overview

The population of older people and people with disabilities is growing rapidly throughout the world, due to many complex changes in societies from decreasing birth rates to increasing survival rates from accidents and chronic health conditions. There are currently between 110 and 190 million people with substantial disabilities [1] and approximately 901 million older adults (meaning people aged 60 or older), worldwide [2]. The United Nations (UN) predicts that the population of older adults will increase to more than 2 billion by 2050. The UN also predicts that the number of older people will exceed the number of the young people, aged 15 or younger, for the first time in 2047. This change in the balance of older to younger people (known as the age dependency ratio) has many consequences, one of them being that older adults and people with disabilities will need to live more independently, without as many of the younger generations to care for them. Many analysts and researchers [e.g. 3] believe

that technology will provide at least a partial solution to this problem, allowing older adults to live in their own homes safely and independently for as long as possible.

These demographic changes are worldwide phenomena, although different countries are experiencing them at different rates and in different ways. In addition, there are many cultural sensitivities and differences in attitudes to disability and old age, which have important implications for designing interactive systems for disabled and older people. However, designing for cultural diversity is an aspect of universal design can increase the overall number of users and the usability of interactive systems for those users [4]. Therefore we believe that bringing together researchers and practitioners from different cultures with an interest in accessibility, assistive technologies, Universal Design and methods for working with disabled and older users will be beneficial to exchange ideas and good practice and develop greater understanding and synergies across cultures.

People with disabilities and older people have needs and wishes for technology that HCI designers and developers are often unaware of or fail to understand fully. In European countries we have observed that designers and developers of interactive systems also often have difficulty establishing contact with disabled and older people and lack a good range of techniques to work with them in the development process, in spite of being eager to develop technologies to support these user groups.

There are also many cultural and societal differences between countries which affect needs and attitudes towards technologies for disabled and older people. For example, the effects of demographic changes in China are comparable to European countries, but attitudes to family are typically somewhat different from European attitudes (although there is much variety across Europe), as is the acceptability of older people taking physical exercise in public. These and many similar factors can have a substantial effect on what kind of interactive systems might be developed to support older people, how they are developed and how they are used. In relation to disability, there are also very different attitudes and policies in different countries there as to whether people with disabilities should be integrated into mainstream society or cared for separately. These attitudes and policies have a great effect on the development of interactive systems.

The workshop will address a wide range of topics in this area, depending on the interests of participants. We will work towards producing a jointly authored paper for publication on the challenges in cultural differences and sensitivities in accessibility assistive technologies and Universal Design.

2 About the Organizers

Professor **Helen Petrie** who holds the Chair in HCI at the University of York (UK), current chair of IFIP WG 13.3. Her research focuses on the design and evaluation of technology for disabled and older people.

Professor **Gerhard Weber** who holds the Chair in HCI at Technische Universität Dresden (Germany), past chair of IFIP WG 13.3. His research focuses on personalization of multimodal systems for the benefit of people with a disability.

Dr **Jenny Darzentas** who is a Marie Sklodowska Experienced Researcher at the University of York (UK), and Adjunct Lecturer at the University of the Aegean (Greece), working on supporting designers and developers to design for older people.

Charudatta Jadhav who is Head of the Accessibility Centre of Excellence at Tata Consultancy Services (Mumbai, India), working in research areas such as automation in accessibility assessment, inclusive interaction and service design, accessible security.

Professor **Zhengjie Liu** who is Founder and Director of the Sino European Usability Center (SEUC), Professor at School of Information Science & Technology of Dalian Maritime University (DMU), Director of NCR-DMU HCI Research Center, Co-founder and Co-chair of ACM SIGCHI China.

References

1. <http://www.who.int/mediacentre/factsheets/fs352/en/>
2. United Nations, World Population Ageing (2015)
3. Mynatt, E., Melenhorst, A.-S., Fisk, A.D, Rogers, W.A.: Aware technologies for aging in place: understanding user needs and attitudes. *Pervasive Comput.* **3**(2) (2004). ISSN 1536-1268
4. Marcus, A., Aykin, N.M., Chavan, A.L., Prabhu, G.V., Kurosu, M.: SIG on one size fits all? Cultural diversity in user interface design. In: CHI Extended Abstracts, p. 342 (1999)