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Designing technology to meet the needs of the older user

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The Other Side of Technology

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Editorial Preface

The elderly population is growing fast in most developed countries. At the same time, birthrates are low, and the overall effect is that the elderly form an increasing proportion of the population. This raises a variety of problems for individuals, for families, and for societies as a whole. Elderly people often suffer from mobility, memory, communication and general health problems. They tend to become both physically and socially isolated, which leads to distress and poor mood states, all of which contribute to a worsening of their quality of life and health. Despite the potential of recent technology to address needs of older users in areas such as social communication, information and entertainment, they remain largely excluded.

Many older people find themselves bewildered by recent developments such as mobile phones, DVD players, set-top cable TV boxes, and the internet. There is an urgent need to address this situation, by targeting the design and development of technologies and systems to help increase the quality of life and enhance the functional independence of older people. This can lead to improvements in quality of life for both the elderly and their relatives, and a reduction in the societal costs. But the technology must be designed in ways that address the psychological needs and capabilities of older people, who do not form an homogenous group.

There is thus an urgent need for more research on the topic of this special issue: *Designing technology to meet the needs of the older user***.** The three themed papers accepted for publication, after anonymous peer review, provide a useful cross-sectional view of research approaches as well as covering three key topics in the field: memory support, internet browsing behaviour, and mobile phone design. The research approaches represented are, firstly, the creation of new technologies to compensate for specific forms of cognitive decline in the elderly; secondly, an examination of how and for what older people actually use the internet today; and thirdly, a proposed design approach aimed at increasing the inclusivity of product developments, thus reducing exclusion arising from technological advances.

The survey paper, *A Review of Memory Aid Devices for an Ageing Population*, by Niamh Caprani, John Greaney and Nicola Porter, provides a very useful and timely review of memory aid devices for the elderly. The focus is on prospective memory, in other words remembering to complete intended acts. This is a key topic, because independent living depends on it. If the plan is to heat food for dinner, it is of obvious importance to remember to check its progress and remove from the heat at the appropriate time. Prospective memory often declines with age, especially in the over 80s - the fastest growing demographic group. The good news from this survey paper is that electronic memory aids have the potential to meet the needs of this population and help with this problem.

An investigation into Older People's Browsing Activities, by Prush Sa-nga-ngam and Sri Kurniawan, looks at the internet browsing behaviour of older people in three different countries: Thailand, the United Kingdom, and the United States. The paper presents new quantitative data based on questionnaire responses, covering various aspects of internet experience and current browsing behaviour. Exploratory Factor Analysis is used to extract usage patterns from a large set

of interactive tasks and activities. The results are interpreted in terms of the following research questions: What and how do older people browse online? What functions in a standard browser do they use? And: What additional functions would make such a browser more useful for this group?

Inclusive Design and Human Factors: Designing Mobile Phones for Older Users, by Matthew Pattison and Alex Stedmon, addresses the key topic of mobile phone use by older users, from a design perspective. Increasingly, participating in everyday social interaction and accessing timely information means carrying and using a mobile phone. But the way these devices are designed seems more directed to the young and would-be-fashionable than towards the needs of users, and especially of older users. The paper reviews evidence and suggestions about what the requirements of this large and expanding group of users actually are, how current mobile phone designs match up (or fail to), and also looks at some specific products designed to meet these requirements. The authors suggest that an integration of effective human factors work with an inclusive design ethos within the product development process will maximise the benefits of technological advances and minimise exclusion.

We are very happy to welcome you to this special issue.

Eva and John Waterworth
Guest Editors of the Special Issue
Umeå University, Sweden

As is customary, the journal includes also two reports from funded research projects. The first contribution of this type is also in line with the topic of the special issue, and was written by Luciano Gamberini, Mariano Alcaniz, Giacinto Barresi, Malena Fabregat, Francisco Ibanez, Lisa Prontu. The project, called 'Eldergames' plans to build a mixed reality gaming platform for elderly users; it aims to exploit the beneficial effects of playing games to compensate the decrease in some cognitive abilities due to aging. The contributions, titled *Cognition, Technology and Games for the Elderly: an Introduction to ELDERGAMES Project,* presents findings from psychology literature that substantiate the project's claims and suggest specific ergonomic requirements for elderly users. The second contribution, which falls within the 'Other contents' section, is called "*Augmented itineraries": Mobile services differentiating what museum has to offer* and is authored by Maria Cristina Brugnoli, Federico Morabito, Giancarlo Bo, Elena Murelli. It describes a field study conducted with the prototype of a wireless device ('MOBILearn'), which uses the opportunities disclosed by a networked, portable tool to provide museum visitors with customizable and interactive information.
Therefore, we join our guest editors Eva and John Waterworth and welcome you in this issue 4(3) of PsychNology Journal.

Luciano Gamberini, Anna Spagnolli, Giuseppe Riva
Editors-in-Chief