



# Strategic Promotion of Ageing Research Capacity

## When Designers Meet Older People

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*Meeting the challenges of  
an ageing society*

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# When Designers Meet Older People

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Older people have a major part to play in the design of everyday products and environments. Often designers pay little attention to the needs of older people so their involvement can therefore ensure that designers start to think differently. Working with three groups of older people and a group of carers, the research team developed a methodology for generating and discussing design concepts with older people. As a result, a range of concept designs based on the needs and aspirations of the participants were created. In the process the research team gained a number of insights about designing for older people. The experience was challenging and revealing, and underlined the need for much closer engagement between designers and older people.

## Key Findings

- Older people can provide valuable inputs to discussions with designers about design concepts and offer important guidance about the development of those concepts. However, because 'older people' encompasses a wide and diverse group of people, the concerns, encouragement and practical advice which they offer varies greatly.
- The experiences of the designers in the study strongly reinforced the recommendation that designers should follow the key principles of user-centred design.
- The study led to two key insights for designers. The first is the potential for the development of *wellness monitors* in contrast to those which are concerned with monitoring problems, failures and illness. Secondly, there is a need to move away from a growing dependence and belief in the infallibility of sophisticated interfaces for monitoring the health of an older person. These serve to distance those who use the monitors from those who are being monitored. This dependence could be changed by developing products with minimal interfaces so that users are encouraged to interpret the information displayed and thus become actively engaged in the process of making sense of the situation portrayed by that information.

# Introduction

## The Issues

Older people require and deserve better designed products and environments, but many designers have little experience of designing for anybody except the 'average' person. Few have been introduced to the need to design for diversity in their formal training.

Although designers are often encouraged to adhere to a number of key principles and perspectives when working with older people, many are not aware of them or how they should be applied. For example *user-centred design*, an approach which includes the views of users, is often spoken of, but its practice is not widespread. Designers are also urged that they should develop a better appreciation of the issues arising from the design of products, by engaging with all those groups of stakeholders involved with a product, such as those who manufacture, transport, install, configure, maintain and ultimately dispose of a product. This approach should lead to a better *design understanding* which could then be expressed in a variety of ways, such as practical design prototypes, provocative design concepts ("challenges for design") and the identification of opportunities for further design work.

Products and services are often developed on the basis of a medical model of ageing; to "cure" a perceived "ailment". The associated development process recognises that the design of products and systems for older people should support their health and wellbeing needs, but it is important that they should also satisfy their *wants, needs and aspirations*.

Designs can be viewed in many ways, not just in terms of how they are used, for example they can be considered as personal objects, aesthetic objects and lifestyle decisions. With this in mind, products and systems designed for older people today may not be suitable for older people in the future. The *next generation* of older people is likely to have a different set of expectations and aspirations from today's generation of older people.

## The Aims of the Study

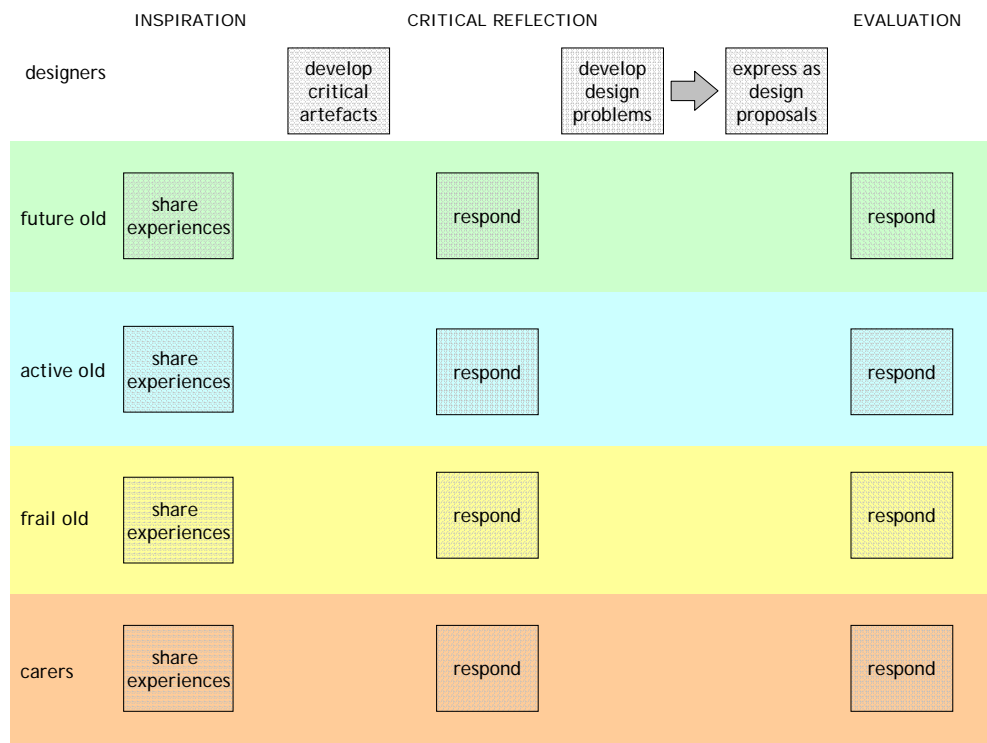
The study aimed to provide guidance on the design of a physical living environment which could be used to evaluate theories about how older people respond to conceptual designs and prototype products. Through this it aimed to develop new ways of defining the problems and barriers associated with maintaining independence, quality of life and care at home in later life. In particular, it looked at how *emotional design* can generate objects that engage with and provoke users. In summary, it set out to provide experience and insight to members of the research team, all designers, in working with older people.

## The Study

Three workshops were held with each of four identified stakeholder groups.

- Active Old – older, socially active people, who were highly mobile and involved in mentally or creatively stimulating activities. Most were from a local community group.
- Frail Old – older people with greater healthcare needs who required the assistance of third party care and/or assistive technology. These were recruited from a local 'extra-care' facility.
- Carers – people who are or have previously been carers (not just of older people) and were members of a local carers panel.
- Future Old – people below retirement age - "tomorrow's older people", predominately middle class and well educated.

The workshops were designed to provide an ongoing "dialogue" between the participants, as stakeholders, and the researchers, as designers.



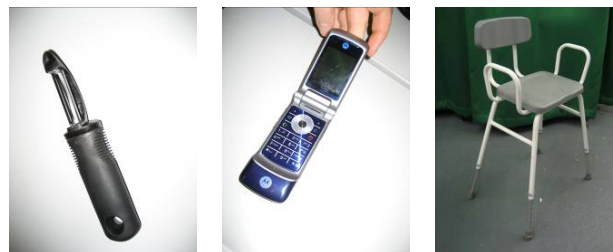
Four stakeholder groups were involved in three phases of workshops.

## The Workshops

In the first workshop, participants were asked to share their experiences with the researchers. In the second and third workshops the researchers “replied” using two series of design concepts which prompted further discussion. These design concepts were informed by the preceding discussions and, in the second workshop, were deliberately provocative.

**Workshop 1** - “us listening to you”. Participants were asked to bring two objects or photographs of these objects from inside their homes: one that they considered to be a useful “favourite” object; and another that they considered a “nuisance” object although necessary. They presented their objects and described the reasons for their selection.

In some workshops this discussion took place in a structured manner – each participant presented their objects in turn. In other workshops the discussion was more freeform – statements from one participant inspired other participants to share similar or related experiences.



Examples of one ‘favourite’ and two ‘nuisance objects’

**Workshop 2** - “us talking back”. A series of design concepts were presented as “conversation starters”. Participants were not explicitly told that the concepts were products of a critical design process or were intended to deliberately provoke. Six concepts were presented in the workshop using a PowerPoint® presentation projected onto a large screen.

- **Made to Measure Mask** – a customised ‘made to measure’ respiratory mask which could be produced at a local hospital. This concept was inspired by a participant who had to constantly adjust and modify a number of masks supplied by the hospital which had to be worn when sleeping.
- **Ripple Rug** - monitoring systems can be intrusive, this concept was a rug which monitors the presence of movement around an individual’s home. The movement is represented as ripples in an image in a relative’s home. Greater movement is represented by multiple ripples. If a person falls, this might be represented as a splash to alert possible danger.



Ripple Rug

- **Meal Mates** - a 'virtual' dining experience. The social aspect of eating is important but for many can be impossible due to location or mobility problems. The concept embeds technology into everyday household objects, the chair, table mats, cruet set. Assuming one's social community was networked with similar devices, the user could 'invite' friends for lunch by laying the table with the 'smart' table mat that would activate a video link through a screen on the chair. The cruet set might be a speaker. The concept might bring families who live at a distance closer together.
- **Hospital at Home** - The benefits of making hospitals more like home to aid recovery and rehabilitation have been widely discussed. This concept suggests that the hospital would come to the home. An appropriate medical facility would be delivered and nurses/clinical staff would be responsible for small residential communities rather than hospital wards.

- **One Control Fits All** - a standard interface used to control household items, such as a kettle, or for basic function control: On, off, more, less.
- **What if?** - Consumer information and knowledge of product suitability is important when acquiring and making new purchases. There is currently an abundance of consumer journals that provide information and evaluate consumer products such as cars, cameras and white goods. This concept suggests an approach, which has to some extent become entertainment (for example *Top Gear*), is used to promote equally important products, such as, wheel chairs and potato peelers.

**Workshop 3** The design concepts presented in this workshop were described to participants as a way of "continuing the conversation". The ideas embodied in the prior design concepts in Workshop 2 were developed in response to the discussions at that workshop. Three concepts were presented.

- **Biscuit Tin Buddies** – A wireless biscuit tin which can be used to communicate with family and friends over coffee. In this concept, the tin is wireless, has one volume function on the knob on the lid, where a speaker and microphone are housed. It also functions as a biscuit tin.
- **Glow Gems** – A sensor in the home which transmits to a piece of jewellery worn by a family member or carer. In this concept, the stone in the jewellery changes colour gradually over the course of the day in response to the older person's movement around the home, providing the carer with a continual reminder of their family member and providing positive feedback that 'all is well'. Lack of activity or colour change in the jewel will alert the carer to a possible problem.
- **Mediblocks** – Used when an individual is recovering from an operation and requires daily check ups. In this concept, a monitoring station will provide a direct link to the doctor who can quickly assess a condition. The portable station can be relocated in the home as the patient recovers and becomes more mobile. Each station can be equipped with the appropriate medical provision for assessment and administration of medication.

## Findings

Working with the information and opinions offered by the participants in Workshop 1, design concepts were developed which participants in Workshop 2 were able to recognise and discuss, offering their views and observations. The different groups had different opinions about the design concepts. These are summarised below.

The “Carers” group tended to have different views to the other groups. This was probably because of the experience of caring for others - they had seen, first hand, extreme disability and dependence.

The discussions highlighted many concerns about the social implications of design, as well as the utility of the concepts, and the desirability of the proposed products.

The differences in views expressed, between the groups, reinforces the need to adopt a user-centred approach to design, especially in understanding the needs and aspirations of the user. Interestingly the “Future Old” group were more likely to support the concept designs because of their potential, whereas the other groups felt issues of practicality were generally more important.

The revised concepts presented at Workshop 3 addressed issues raised in Workshop 2, and received a similarly broad range of responses. In general the “Active Old” group were the most comfortable with the technology embedded in *Biscuit Tin Buddies*, whilst *Glow Gems* created much debate and curiosity amongst all groups. All groups were positive about *Mediblocks*.

	Active Old	Frail Old	Carers	Future Old
<b>Made to Measure Mask</b>	neutral practical issues, masks in general	neutral masks in general, cost	neutral masks in general	neutral accepted as useful
<b>Ripple Rug</b>	positive practical issues	neutral practical issues	negative practical issues, cost	neutral resolution
<b>One Control Fits All</b>	positive practical issues	positive practical issues	positive engaged with issue	neutral practical issues
<b>Meal Mates</b>	negative and positive resolution	negative resolution	neutral engaged with issue	positive engaged with issue
<b>Home Hospital</b>	neutral practical issues	positive engaged with issue	negative practical issues	positive accepted as useful
<b>Top Wheelchair (What If?)</b>	neutral wheelchairs in general	neutral wheelchairs in general	neutral wheelchairs in general	neutral engaged with issue

Note: The table indicates the typical overall response of the groups to each concept, and the most frequent areas of discussion or outcome of the discussion.

## Discussion and Implications

### Design Insights

The workshops had a major impact on the research team's understanding of the context of design for older people. This understanding is expressed below as several "design insights".

#### *"Wellness" monitoring*

The majority of systems for monitoring older people are based on the idea of triggering and alerting when something is wrong: for example, alarms which monitor falls, intruders, and wandering. Such systems only communicate when there is a problem. However there is an opportunity to develop systems that monitor and communicate when everything is all right.

With alarm systems, the monitored person's wellness could be implied by a lack of any alerts. However a lack of alerts could also be because of a failure in the alarm system. "Wellness" monitors would provide reassurance to both the person being monitored and those doing the monitoring through an explicit communication of everything being okay.

#### *Supporting not replacing social practices*

Products and systems which translate potentially complex and ambiguous situations and then present them in a simple way (for example "falls monitors"), can cause problems. Firstly, their interfaces dictate how people respond – people only perform the tasks that the systems dictate. Secondly, those reading the monitors can mistake the situation a system presents for the real situation. For example, by mistaking that a fall detector just alerts falls, when it actually alerts that it has been activated for whatever reason. Thirdly, they may absolve themselves of responsibility for verifying the progress and completion of tasks that the systems support – "the fall detector is watching out for Grandma, so I don't have to call round to check on her".

Products and systems which do not attempt to translate the basic information but present it as measured may not readily cause such problems. The information is less easily mistaken as being the real phenomena that sophisticated systems are intended to represent – users must interpret the information with which they are presented.

Finally, because basic information needs to be interpreted, the users cannot absolve themselves of responsibility for verification. The product cannot complete the task; the user has to "make sense" of what ever is happening.

### The Project

The project has highlighted important factors concerning the engagement of *users* in design research. Creating an ongoing dialogue is a more productive approach to engaging users than just asking for opinions on design concepts and solutions. In this study, the researchers were able to respond to the dialogue of the workshops by generating design concepts, and the participants were then able to respond to these concepts.

The nature of the project's working methodology and topics for investigation have clearly informed the design of a "user-laboratory". As a consequence, significant funding has been secured to resource and support this facility. In addition, significant external funding has also been awarded to conduct major research studies within the context of ageing.

The aim is to use this "user-laboratory" to propose creative strategies for the development of future living environments in which people of all ages and abilities are enabled and empowered to live with dignity, independence and fulfilment. The research undertaken in this environment will adopt a holistic, human-centred approach, rather than focusing solely on, for example, medical or social care provision, or future technological possibilities. A key aspect will be the experimental production of appropriate stimuli for the creative development and communication of future scenarios. This will make the intangible, tangible, and help people to articulate their aspirations, hopes and fears, to inform the creative development of design ideas.

## The Research Team



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## The Study

The study received financial support from SPARC of £23,178 and ran for 12 months ending in December 2007. Additional support was provided by the Sheffield Hallam University.

More information about the study can be found on the SPARC website [www.sparc.ac.uk](http://www.sparc.ac.uk) and obtained directly from the investigators.

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## SPARC

SPARC is a unique initiative supported by EPSRC and BBSRC to encourage the greater involvement of researchers in the many issues faced by an ageing population and encountered by older people in their daily lives. SPARC is directed, managed and informed by the broader community of researchers, practitioners, policy makers and older people for the ultimate benefit of older people, their carers and those who provide services to older people.

SPARC pursues three main activities:

**Workshops** to bring together all stakeholders interested in improving the quality of life and independence of older people.

**Advocacy** of the challenges faced by older people and an ageing population and of the contribution of research to improving quality of life. SPARC is inclusive and warmly welcomes the involvement of everyone with a relevant interest.

**Small Awards** to newcomers to ageing research, across all areas of design, engineering and biology and at the interfaces relevant to an ageing population and older people. In 2005 and 2006 SPARC received 185 applications for support in response to two invitations for competitive proposals of which 34 were supported.

## Executive Summaries

SPARC is supporting its award holders through funding, mentoring, a prestigious dissemination platform, professional editorial assistance, international activities and provision of contacts. Each of the projects has been small, yet the enthusiasm for discovery, and impatience to contribute to better quality of life for older people, has more than compensated for the very limited funding which was provided.

This executive summary is one of a series highlighting the main findings from a SPARC project. It is designed to stand-alone, although taken with summaries of other projects it contributes to a formidable combination of new knowledge and commitment by newcomers to ageing research, with a view to improve the lives of older people. This is a tangible contribution towards ensuring that older people receive full benefit from the best that research, science and technology can offer.