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User Requirements of Furniture Influenced by a Move to a Senior Housing

Focus Group Interviews on Changes for People in the Third Age

Abstract

User-centred design approaches within the field of furniture design for old people involves an act of embracing and balancing various end-user needs and assessing their relative importance for the product experience. It is often assumed that older people's physiological needs dominate their other needs. In the present study, three focus group interviews were carried out with the exploratory purpose of gaining an understanding of how people feel and think about changes when moving to and living in an apartment in senior housing, outside the housing market, and what impact this has on their opinions of furniture and other interior products. Twelve people aged 59–93 took part. The outcomes of the focus group interviews point to demands on products that support the physical, psychological and social changes that relocation and aging may bring, and correspond to an independent and self-determinant identity. User requirements related to usability and affective product experience for the design of totally new or improved products are proposed. The paper discusses the complexity in the research assignment to communicate and bring end-user knowledge and experiences to life, and suggests that designers will benefit from carrying out or being involved in user-centred research.

Keywords: furniture design, user experiences, aging population, user-centred design, people in the third age

Introduction

What does a furniture designer need to know about older people's needs and requirements? This paper addresses the question of the needs that arise when people in late middle age/the third age leave a home where they lived for most of their adult life and move to a smaller dwelling. The aim is to contribute to design-relevant knowledge about older end-users' needs and aspirations for the design of furniture. How do they think and reflect concerning furniture and other interior products when they change homes? What are their needs, wishes and aspirations? The relocation in focus is that of moving to and living in a newly built apartment in senior housing, outside the housing market, that has been particularly developed to fit the needs of seniors. What impact does this relocation have on old people's experiences, opinions and attitudes about furniture and other interior products?

A well-known conclusion drawn from demographic studies is that the proportion of old people in the populations of industrial countries is growing. Between 2005 and 2050, in the more developed regions, the population aged 60 or over is expected to nearly double (United Nations, 2007). This expected situation is a new one for societies: People now live longer, and are healthy and active longer than in any previous age, while many citizens are entering the third age phase of life. The third age is a tentative concept articulated by Peter Laslett (1991) in order to capture new lifestyles among older people. The division between the third age and the second and forth age do not come at birthdays, nor do they even lie within clusters of years surrounding birthdays. The third age refers to the period when people fully or partially leave the job market, careers and the most demanding family obligations, but still live a life of relative independence of others' help and support (Laslett, 1991). The concept is used in this paper as a means to avoid thinking about biological age as a cohesive factor and to avert an out-of-date image of older people and the products they stereotypically benefit from.

The patterns of how people move changes over time and probably between the cohorts of older people. The tendency for old people in Sweden to move has been low for a long time, but now seems to be increasing among people 55 and above (SOU, 2008). With increased age, there is also a significant tendency to move from detached houses with private ownership, and a less significant tendency to move to central parts of a municipality (SOU, 2008). Moreover, older people in general express strong preferences for remaining at home as long as possible (see, e.g. Fänge & Dahlin Ivanoff, 2009; Rioux, 2005).These tendencies suggest that many people in the third age will move to simplify their ordinary housing circumstances, often to dwellings that are somewhat smaller and easier to maintain. However, little is known about how people in the third age reason about the relocation and downsizing of their ordinary housing, and what impact this has on their opinions of furniture and other interior products. The material currently available on the expected needs of people in the third age is general, and not broken down into design-relevant knowledge about end-users' needs and aspirations, for example in the design of furniture (see, e.g. Daunfeldt, Gustafsson, Hortlund, & Rosén, 2008). There are three major possible reasons for the insufficient knowledge in this field. Firstly, there is an existing lack of communication between the furniture industry and its end-users (Brege, Johansson, & Pihlqvist, 2004). Secondly, there are negative stereotypes associated with aging and older people. Thirdly, existing knowledge and recommendations on furniture for older people often use the physical, psychological and cognitive declines that age may bring as a starting point (see, e.g. CEN/CENELEC Guide 6, 2002). In short, the dominant approach in this field is one of doing things *for* old people instead of exploring ways of doing things *with* them.

The common idea is that continuity in a person's environmental experience is beneficial to his or her quality of life and independence (Hwang, Cummings, Sixsmith & Sixsmith, 2011). Furniture and interior products as objects, memories and/or enjoyments may play a crucial role in enabling user independence and well-being in the home. In this paper, well-being refers to the enjoyment or satisfaction that people, living in their own home, feel in everyday life situations. Moving away from a home where an individual has spent his or her earlier years is a big challenge for older people, but many other actors such as planners, funders and authorities can benefit from information about the issues that arise. For example, supporting people to continue to live in their own homes is generally less expensive than options such as residential care (Sixsmith & Sixsmith, 2008). Changes that have occurred over time are that more old people are expected to want to, but also have to, live in their homes instead of moving to a residential care facility. Their homes will probably more frequently be the place where care is given for older people in need. Technological developments enable advantageous support for the individual in daily activities, in terms of safety and security, and increasingly, support for care giving.

In this paper, the generated findings will be reflected from the point of view of design practices, in particular a human-centred approach to design. Design practice is understood as a process of developing solutions with users' needs as a starting point. A human-centred approach to design is understood as ensuring that the user is the centre of focus throughout the design process. The present research concerns, in particular, the early stages of a human-centred design approach. Early and continual focus on users is recommended by Gould and Lewis (1985) as an important principle in user-centred design, where the users need to be directly involved from the beginning of the design process, such that they can actually influence the design and not only be asked for validation. In order to be applicable in design practices, the participants' positive comments on product qualities will be broken down into a series of user requirements. A framework of product experiences and a concept of usability will be used to sort and present the findings. The intention is to articulate and clarify the values of affective product experiences and make them more explicit in order to embrace a

holistic view of end-user needs in the design process.

The purpose of this research is to create knowledge of valuable conditions for the design of furniture and other interior products for a wide range of users in different life phases. The perspective is that users are experts on their everyday lives and situations. The participants are primarily seen as generative users, i.e. users that help researchers and designers to generate knowledge and ideas. The term *generative user* is described in Edeholt's thesis *Design, Innovation and other Paradoxes* (Edeholt, 2004). It refers to persons who are not necessarily end-users, but who help the designer to generate ideas.

From the viewpoint of environmentally sustainable design, it may be worthwhile to lengthen the lifespan of furniture and other interior products, as well to enable people to remain in their homes without making major changes. Therefore, the reflections have the aim of giving conditions for the design of useful furniture and other interior products which will be desirable for a wide range of users and will contribute to long-term use. This paper also discusses how user-centred design approaches may bring design-relevant knowledge to life.

Overview of current research in the field

A home is more than a roof and functionality; an individual's home is a defining part of his/her identity and lifestyle. The home has a central place in the lives of very old people because it is where they live and spend so much time (Dahlin-Ivanoff, Haak, Fänge, & Iwarsson, 2007). The significance of the home is based on the fact that it means so many different things to those who live there (Dahlin-Ivanoff et al., 2007). It is where we relax, entertain, are entertained, share our experiences with family and friends—perhaps increasingly so later in life, after withdrawal from the labour force (Leeson, 2006). The consequences for older people when moving from their own home to a care environment have been studied by Marcoux (2001); such a move results in a smaller place to live in, with a smaller set of things. This move is accompanied by the compulsion for people to divest themselves of some of their belongings, a process that is called 'casser maison', literally 'to break the house'. This pertains to a ritualised form of construction of the self through the emptying of the place. Marcoux (2001) states that people inhabit their things as much as their space. Provided that possessions are important to such an extent in the creation of place and in the sense of a 'maison', it is common to hear among older people in the process of moving that it is the things themselves that make the house *their* house. Possessions are often considered to be at the heart of the construction of the home (Marcoux, 2001). In research that examined how experiences in the home and feelings about the home are related to quality of life among an aging female population, Rioux (2005) concluded that well-being is strongly related to satisfaction with the home, neighbourhood and level of residential embeddedness or connection. The feelings of being rooted in an environment through memories and objects are the primary reasons for living in one's particular house or flat and choosing to stay in the home (Rioux, 2005).

This paper concerns furniture suitable and desirable for the growing proportion of people in the third age. Not all of us will go into the subsequent 'fourth age', which is a life phase characterised by dependency and frailness. Only about 15 per cent of Swedish citizens 65 years or older are dependent on home help services or live in residential care housing (Johansson, 2010). A major contrast between the design of furniture for residential care housing, intended for the share of people in the fourth age that are living there, and the design for people in the third age is that the latter decide on and pay for the pieces of furniture themselves. Thus, people in different phases of life benefit from different design solutions, and those in a certain life phase may benefit from different design solutions in the context of different housing environments. To find a single design solution accommodating all diverse user requirements is sometimes possible, but not always. Such solutions often tend to be

compromises and not very good for anyone (Paulsson, 2006). There are situations where the ideal design solutions for people in different life phases, or different housing environments, are contradictory. Today, people in the third age life phase are expected to make their own decisions, as they have a great deal of choices about who they want to be and the kind of life they want to lead. This life phase shows a diversity of needs that are continuously changing, in part because younger generations are gradually replacing older ones in the older adult population. Different generations have different experiences and expectations. The people of tomorrow's third age are expected to make increased demands on a range of products that are more varied and brought into line with their needs and aspirations. Many, but far from all, are expected to have increased purchasing power, stronger social networks and higher levels of education compared to the older people of today (Daunfeldt et al., 2008). They will presumably be more active and continue to work or develop their recreational pursuits. However, aging may result in a number of biological, psychological and social changes (Tornstam, 2011), and is sometimes accompanied by diseases that affect functions, skills and abilities. While not all older people have disabilities, the prevalence of disability or limitations is highest among this demographic group (CEN/CENELEC Guide 6, 2002). Although people are now living longer and may develop a range of disabilities over their lifespan, these may no longer be perceived as barriers to enjoying a high quality of life.

Existing recommendations on furniture for people in the third age

Existing recommendations on furniture for older people often take the physical, psychological and cognitive decline that aging may bring as a starting point. The approach is often from an expert's view that represents the interests of the end-user. Östlund (2008) argues that for a long time, the dominant paradigm for addressing older adults' needs has been to do things *for* them based on an understanding of aging as a growing helplessness, and expresses that the system of product development instead should start looking for ways to do things *with* them. One of the few existing recommendations that particularly refers to people in the third age is that the most active among older people require chairs that facilitate ingress and egress and that provide seated comfort while not restricting movement (Holden, Fernie, & Lunau, 1988). Chairs that stimulate different sitting positions are recommended, because constrained sitting is bad for everybody's health (i.e. contributes to chronic disorders, muscle pain, impaired circulation, etc.; Lueder, 2004).

This research is in line with an inclusive design approach. Thus, it is suggested that designers understand the use limitations and possibilities and develop solutions that can respond to possible future changes in human abilities that aging may bring. *Inclusive Design* constitutes a strategic framework and associated processes by which business decision makers and design practitioners can understand and respond to the needs of diverse groups of users (Coleman, 1999). The ultimate goal is to develop products and services that can meet the needs of the whole population (Paulsson, 2006). Inclusively designed products are meant to be used by everyone. The challenge of inclusive design, according to Rønneberg Næss and Øritsland (2005), is to move from looking merely at users, products and tasks towards a more holistic view of how people use products to socially construct their reality. Otherwise, inclusive products risk being irrelevant to most people and stigmatising to those who need them (Rønneberg Næss & Øritsland, 2005).

Various end-user needs

This paper follows Desmet and Hekkert's (2007) definition of *product experience.* It is used to refer to all possible affective experiences involved in human-product interaction. Note that human-product interaction does not only refer to (1) instrumental interaction, but also to (2) non-instrumental interaction, and even to (3) non-physical interaction. In this paper, *usability* refers to the relationship between the end-user (and his or her skills and abilities) and (the

properties of) the product. Jordan (2000) argues that individuals seek more than usability alone, and points out that the designer needs to understand people holistically, from how they use products to the roles products play in their lives. The construct of user experience broadens the discussion of functionality. It moves us from a focus on the product's mechanical operation to the way it fits into a user's life. The product does not exist in a vacuum. It becomes meaningful only in relation to the user in a given environment for a given time. However, these aspects are usually not under the designer's control, since they typically involve an individual's connections to people, places or events that are important only to that particular individual. End-users expect their cultural, social and aspirational needs to be satisfied by the products with which they surround themselves. To meet these diverse needs, designers must actively develop research strategies especially aimed at generating design-relevant end-user findings from a holistic perspective. Usability can most likely be a source of and generate affective product experience, and a user experience can most likely influence and co-create the user's satisfaction with the product's usability (Desmet & Hekkert, 2007). The conception of which knowledge is useful in the design process is to a high degree a matter under negotiation. With the increased awareness of the necessity to elicit user needs beyond usability, user-centred design methods are making it easier for the user to participate with designers in the design process, and are becoming more established in the discipline (Bruseberg & McDonagh-Philp, 2002). While user-research methods may be familiar to other disciplines, conventional design training has not, until recently, incorporated such activities (Bruseberg & McDonagh-Philp, 2002). Such methods, however, have not yet had enough impact on design practice.

The concept of *user requirements* can be defined as 'those requirements which the user has for the artefact in use, and which are manifested by the problems arising in the context and/or articulated as problems, wishes or desires by the user' (Karlsson, 1996, p.22). The definition implies that the user requirements are not always articulated verbally by users and if they are, can be so in many different ways (Engelbrektsson, 2004). User requirements can be more or less accessible, and can be divided into the three following categories: captured, elicited and emergent (Karlsson, 1996). *Captured* requirements are easily accessible, since the users are already aware of the problems and have reflected upon them. If the designer simply asks users what their requirements for a product are, these are the ones she or he will be told about. Other requirements are not so easily captured. The user may not be aware of a problem or may have compensated for the deficiencies of the product, which means that the problems are no longer consciously reflected upon and are therefore not present in the user's mind (Engelbrektsson, 2004). By probing with questions and/or using a mediating tool that can be anything from living environments and a real product to a hand-drawn sketch requirements that users take for granted or are not yet aware of can be *elicited*. The third category of requirements is *emergent*. These are impossible to articulate before a new solution is tried, but instead emerge during the use of a new product and as a consequence of new experience. The three categories of requirements can also be expressed as visible, hidden and latent needs, or defined in terms of active, not yet active and latent needs. An issue here is also the fact that as human beings, we have access to our conscious thoughts and beliefs, but not to our subconscious ones (Norman, 2002).

Method

A focus group interview (FGI) approach was chosen that centred on the following questions: How do today's people in the third age think and reflect concerning furniture and other interior products when they change homes? What are their needs, wishes and aspirations? FGIs are widely used in human factor, social science and market research investigations, but are not so frequently used in design research (Bruseberg & McDonagh-Philp, 2002). FGIs

applied during a new product development process are primarily used to explore new concepts and identify new opportunities (van Kleef, van Trijp & Luning, 2004).

An overview of the current literature on focus group approaches was carried out by Bruseberg and McDonagh-Philp (2002). They found that one of the perspectives that support the method's applicability for design research is that the technique is suited for exploratory purposes, because questions with an open-ended nature can be examined. The information gained is qualitative, and consists of experiences, opinions, ideas and motivations for behaviour, rather than 'figures and facts'. It is not suited to be quantified or generalised. The qualitative information from techniques such as FGIs is particularly vital for design decision makers; hence, designers should be closely involved into the information-gathering process. The principal advantage claimed for FGIs is the ability to use participant interaction to gain in-depth and rich data that would not be obtained through individual interviews (Webb & Kevern, 2001). FGIs are chosen over personal interviews because of this interactive effect: The statements of one participant can trigger comments by others (van Kleef et al., 2004). Quantification of results may, on the contrary, contribute to loss of in-depth information, as vital insights into attitudes and perceptions of users tend to be filtered out in the process. Designers benefit from taking part in FGI sessions by observing, providing responses to users, actively taking part in the discussion, and working directly with users in participatory workshops or acting as FGI moderators (Bruseberg & McDonagh-Philp, 2002). Moreover, FGIs are suitable to gain an understanding of user needs beyond the functional, such as customer delighters (Burns & Evans, 2000), leading to products that provide enjoyment as well as functionality (Jordan, 2000).

Participants

All participants lived in apartments developed by a Swedish company, Seniorgården, with the explicit business idea of offering people over 55 years of age the opportunity to live in beautiful and functional homes as long as they wish (Seniorgården, 2010). The ambition was to recruit participants who were characteristic representatives of the growing population of people in the third age, and were expected to have increased purchasing power and increased demands on products of various aspects. The target group of Seniorgården is people who have high demands on quality and are attracted to housing built with care. One of the company's advertising phrases is: *'Together with some of Sweden's best architects, we create a living space for people with high demands on comfort, design, layout and choice of materials—to the last detail'.* Seniorgården is one of many companies that offer housing for people in the upper part of middle age and older, a housing alternative that became more widespread during the 1990s. The majority of the people who have moved to apartments in senior housing outside the housing market seem to be satisfied, and it is possible that this will lead to a greater interest in this housing alternative.

The selection of people, places and occasions was made considering the fact that relocation in general is a major event in life. Relocation to smaller housing may, in particular, be a critical event that highlights people's relations to their possessions and entails new needs for furniture and other interior products. The living area was reduced, for all the participants, when they moved to the new apartment. Most of them had previously lived in single-family dwellings. The apartments that they now lived in, varied in size from two to four rooms, including a kitchen; they were 69 to 135 square meters in size. The participants belonged to a tenant ownership association, a type of joint ownership of property in which the whole property is owned by a co-operative association, which in its turn is owned by the members. An assumption was that the participants were affluent, since the apartments were in the high price range, held to high standards and situated in areas considered attractive. Thus, participants corresponded to the target users of the project *PLUS-products*, whose framework

this study was carried out within. The overall aim of this project was to ensure future competitiveness and development of small and medium-sized enterprises (SMEs) in the Swedish furniture industry. The collaborating companies were considered to have a common need to develop their home markets and be prepared to achieve better success in the future consumer market.

Three FGIs were carried out in senior housing, outside the housing market, located in north Stockholm with the author as a moderator. Each of the three senior housing locations had shared premises in the buildings such as dining rooms and guest rooms. None of the senior housing had personnel. The interviews took place in a dining room, a shared premise in each tenant ownership association; this was a room that was easy for the participants to get to and was on their home ground. This was done to make them feel more secure than if they were in an unfamiliar environment. Twelve people aged 59–93 took part (Table 1). There were four people in each FGI. Both genders were represented in each group. In one focus group, the participants had lived in their apartments for six years and in the other two focus groups, less than one year.

Table 1. Participants (n=12) in focus group interviews.

Characteristics	*n (%)*
Gender and age (years)	
Females (62, 66, 68, 70, 70, 79, 85, 93)	8 (67%)
Males (59, 78, 81, 82)	4 (33%)
Occupation	
Working	1 (8%)
Retired, working part-time	1 (8%)
Retired	10 (84%)
Marital status	
Married/common law spouse	6 (50%)
Widowed	6 (50%)

The study was approved in an ethical examination. All the participants were informed about the background and aim of the study, and that it would not be possible to identify individual persons and their statements when the data were made public. All participants consented to participate in the FGI session before the discussion started.

Procedure

The interviews consisted of questions in a sequence of themes (Table 2). The three FGIs were conducted in the same way and took over one hour to complete.

Table 2. Themes and questions in focus group interviews.

Themes	*Questions*
1. New housing	What did you do with your household goods when you moved? Have you bought any new pieces of furniture or other interior products? Have you found the furniture that you were looking for?
2. Changes	What did you think it would be like before you moved in terms of activities, your domestic comfort and time spent in the home? What did it turned out to be like? Have your activities in the home changed? What new things do you do? Have you stopped doing things since you moved here? Why? Have your demands in terms of furniture and other interior products changed?
3. New needs	What are your needs today for furniture and other interior products? What do you think about your future needs?

	Where do you prefer to sit at home?
4. New wishes	Is there any furniture or other interior product that you think needs improvement? Do you think your future needs can be satisfied by smart furniture or other interior products? What does added value means to you?
5. Ideas for improvements	What pieces of furniture or other interior products do you consider suitable for people of all ages? Why? Do you have any ideas about furniture or other interior products designed with the needs of seniors in mind that will attract and please a wide range of consumers?
Conclusion	Do you have any further thoughts about what has been said in this discussion?

Open-ended questions were used to allow the individuals to respond without setting boundaries or providing clues for potential response categories, as well as to allow ample opportunities to comment, explain and share experiences and attitudes. With the interviewees' permission, each interview was audio recorded. In order to concentrate on the discussions and observe the interaction among the participants, no field notes were taken during the FGIs.

Treatment and analysis of the data

The audio-recorded data were captured by means of a tape-based approach that is slightly less time consuming than a transcript-based strategy (Krueger & Casey, 2000). This approach relies on listening to a tape recording of each interview and then developing an abridged transcript of the relevant and useful portions of the interview. It is a condensed version of the interview with irrelevant conversation removed. Only a member of the research team with a thorough understanding of the purpose of the study can develop an abridged transcript (Krueger & Casey, 2000).

The data analysis was conducted based on the participants' statements within the discussions. Similar trends of design-relevant statements were drawn together and discussions were compared to reveal patterns. Various end-user issues and ideas, regarded as useful for a furniture designer to know and reflect on, considering older people's changed needs and wishes in connection with relocation and downsizing, were kept as a base for the attention and selection of statements and discussions. The data were examined in terms of how trends of statements and discussions related to the variation between individuals and between groups. It appeared that the themes and questions did indeed consider pressing problems and issues, and dealt with the participants' everyday lives, since they easily and sometimes eagerly discussed and shared their experiences and attitudes. The audio recordings were listened to, and the discussions transcribed were viewed a second time, as this paper was being written with special and rigorous attention to the interactions in the groups in order to ensure that a sense of the whole was captured in all FGIs, with focus on both consensus and contradictions within the analysis. Frequently stated end-user needs were identified as keywords. The identified keywords that represented the participants' positive statements on usability and affective product experience were used to formulate a series of user requirements.

Results and discussions

The aim was to gain an understanding of how people in the third age think about and reflect on issues related to furniture and other interior products when they have recently moved to newly built senior housing, outside the housing market, and are living in a smaller space. The results of the FGI study are summarised and presented with selected quotations in order to bring user needs and aspirations to life. The quotations were chosen to highlight common and shared opinions, but also to illustrate diverse views between individuals and groups such as age groups and gender groups.

Changes

Results from all three FGIs demonstrated that moving to more compact living is a critical

event; involving changes in housing that take time to understand. Aspects mentioned were (1) changes in the living situation and the spirit of togetherness, (2) the fact that the move required a massive reduction of possessions and that (3) the new housing environment called for the need for another type of furniture and other interior products. The study also resulted in statements about how older people themselves reflected about and expressed new needs related to aging and desirable properties of furniture and other interior products.

Many participants appreciated the feeling of togetherness, care, helpfulness and safety that arose when people in the same life phase moved into the same building at the same time. One person who had fallen and broken her leg some years ago experienced that living in a supportive and accessible apartment made her feel that getting older did not seem so dangerous: 'I think I am going to manage here in any case'. The group agreed: 'We feel good here, it is a place where we can grow old', was a comment made in another FGI. 'In this building we read a lot and drink a lot of red wine', was another comment. This may have an impact on the notion of privacy and public relationships, including the extent to which the home focuses on relaxation and informalities or formalities and hospitality norms.

Major aspirations of the FGI participants were to live in and take care of their homes as long as possible in order to remain independent and to improve their quality of life. Comfort and pleasure in the home seem to be important factors for well-being. In this paper, comfort is understood as a pleasant state or relaxed feeling of a human being in reaction to its environment. Relocation leads inevitably to a changed housing environment, and thus has an impact on the perceived comfort in the home. According to the participants' statements, the comforts of home seem to be linked with history and memories, as many people want to keep their possessions to convey a pleasant state or relaxed feeling.

Many of the participants expressed that the reduction of possessions was emotionally tough and time consuming. It took time to make decisions about what possessions to keep and what to do with the rest. According to some, new furniture was bought gradually and not directly in connection with the move. An apt choice of words was, 'It's about meeting the demands of the new living; you have to pick and choose and buy things that will give comfort and pleasure in the future'. Several participants described wishful thinking about space before moving in, and they were surprised that they would not have room for more of their furniture and household goods. One woman said, 'I got a shock the first time I came to the apartment; there was no room for the grand piano'. It was often the case that belongings held memories and sentimental values, and were part of the owner's identity, which made it emotionally hard to dispose of them. As humans, we may connect and interact with some products that help us to communicate and construct who we are, or our commitments to deceased family members. Some participants said that they had a good cry when they got rid of certain possessions. An apt choice of words was, 'Of course you want to keep and take care of your old possessions'. Books were mentioned in two of the FGIs as hard to separate from because they are a part of one's identity. Owners were often anxious that certain possessions should be inherited by their children or in other ways stay in the family, or have a future life pleasing others somewhere else. The oldest participant, a 93-year-old woman, said that 'I keep some possessions just because children, grandchildren or great-grandchildren may change their mind and gratefully receive them. You know they have other tastes, so to speak'. Changes of attitudes among different generations were discussed in the interviews. The oldest participants thought that one should make use of things and not get rid of them. They wanted to keep pieces of furniture that had been handed down from parents to children, even though they were not used in an instrumental way. Some considered themselves as having been raised in the 'old tradition of gratitude and orderliness', where inheritance was important and related to responsibility, and where property was fundamental. One person stated that, 'Things we have had with us affect us. It differentiates our relation to things from that of our children and

grandchildren'. Aspects such as economic constraints or environmental consideration were not found in the participants' statements concerning their unwillingness to replace their furniture.

New needs

Many participants experienced that it was hard and cramped moving to a small apartment from a single-family house or a larger apartment. They wished for more space, according to some because a home that is too cramped leads to domestic discomfort. One man reflected on this in the following way: 'No, I'm like many others who have moved here; we have brought more or less suitable furniture; it simply has to fit in'. In contrast, some single women among the youngest of the participants had another perspective and expressed themselves as follows: 'You cannot just bring your furniture. In fact, these new apartments require small and dainty furniture. You cannot have a big and impressive sofa here because no space will be left. I have disposed of some furniture just because the proportions of the living room were wrong'. Another woman stated, 'I thought that came to a special, spacious and beautiful apartment. I was pretty tired of my dark furniture, so I did not bring them. I wanted to have lightness around me because everything was fresh and white and new, and there were so many windows here'.

A main principle that is often mentioned in design for older people is to change as little as possible. In accordance with this principle, the majority of the participants wanted to keep as many of their possessions as possible. However, as a negative consequence of the move to a smaller place, they had to either dispose of some beloved furniture or live in a cramped home. On the other hand, some participants expressed that the move and a new housing environment created a need for change and opened up new opportunities. This readiness to change or perceived control over decision making may improve the individual's well-being as well as the opportunity to stay in the home as long as possible does. According to Rioux (2005), the well-being that old people feel in the home may be an important contributor to successful aging.

The results from the FGI study indicate that a barrier to obtaining more appropriate furniture may be that many owners, especially in older generations, are attached to their possessions and want to keep them even if they are not considered quite suitable in an instrumental way or from a usability point of view. Some participants also expressed that their neighbours behaved similarly and kept too many possessions. This was interpreted as a factor contributing to the fact that their neighbours were not satisfied with living in the new setting. Results from the FGI study are in agreement with the findings of Pynoos, Nishita and Perelma (2003), who state that 'Too often, older persons adapt their behaviors to their environments rather than change their settings to meet their needs'.

In Sweden, newly built apartments for seniors often have many windows (Fig. 1). Some of the windows have a low bottom window frame, not only to shed more daylight into the apartments but also to include more people, for example wheelchair users, in being able to enjoy the view. According to the participants in the FGIs, light and airy homes with daylight and a view give a feeling of freedom and increase well-being. Several people experienced that the rooms in the newly built apartments invited one to decorate in a light and airy way, with modern and dainty furniture. However, rooms with too many windows result in few continuous wall surfaces. This made it difficult and inflexible when the participants wanted to rearrange their furniture. Such apartments are also designed to give space for people with disabilities, as well as their assistants, so that they can offer better care in the home. The kitchen, bathrooms and bedrooms in particular meet such needs, often at the expense of a smaller living room. However, shared premises such as dining rooms and guest rooms seemed to compensate for the smaller space in the apartments. Access to the shared rooms made extra

furniture like chairs and beds unnecessary in the apartments. It seemed as though the guest rooms also were appreciated by visitors that stayed overnight.

Figure 1. One FGI was carried out in this residence in Bromma, an area seven kilometres north of Stockholm that is considered quite attractive.

The results of the FGI study indicate that the need to buy new pieces of furniture or other interior products is often triggered by the exchange of existing possessions for something more appropriate, functional and pleasurable. To meet these needs and aspirations, it is of vital importance that the designer has knowledge about and considers both the value of the existing possessions and the demand that they do not fulfil. Schifferstein and Zwartkruis-Pelgrim (2008) state that enjoyment may be the main driver of attachment to new products, whereas memories may be more important for old products. Objects people have owned for a long time may evoke many memories, and are likely to accumulate even more memories over time. Retro or vintage products may also have the potential to evoke memories and may therefore be perceived as attractive. Some of the participants who had bought new furniture for their new apartment had chosen a mixture of both old and contemporary pieces.

New wishes

It was difficult for the individuals to speculate on future needs, since these depend on personal health. One participant who had been critically ill due to skeletal cancer and was periodically restricted to her wheelchair said that she did not have any plans for the future. She experienced life here and now, and enjoyed life more today. This was ‘as it should be for everybody’, the group stated. ‘One should not mourn; one has to live in the present’, was another comment.

When there was a discussion of what was suitable for people restricted to a wheelchair, one person stated, 'That thought hasn't crossed my mind, because I'm not in that situation'. Despite the difficulties in reflecting on future needs and the participants´ unwillingness to speculate and trying to anticipate future physiological and cognitive changes, the study generated results about how old people themselves reflected on and expressed new need related to aging and properties of furniture and other interior products. Some participants thought that the fact that it was getting harder to distinguish and remember things was important to consider when buying new items. The increased importance of lighting and contrasts between dark and light colours was mentioned in several FGIs as aspects that compensated for changes in eyesight. Ergonomic requirements in the home with suitable heights and angles on chairs and tables were considered by one man to be similar to those in offices. 'But you do not want the feeling of an office at home', he said with a laugh. In one FGI, a woman expressed wishes to find a larger range of adjustable tables and chairs in domestic furniture shops. Differences in body sizes and body movements were discussed in the FGIs, along with the resulting complexity of trying to satisfy all people. Products should be smart, easy to use and not too 'technical', according to one woman. One person commented, 'You do not become more flexible with age'. A participant in another FGI banged her fist in the table and said: 'Either the furniture or I have to be flexible'. Another aspect of the matter, concerning the impact of low expectations, was revealed when the oldest participant, a woman, stated that, 'We have conformed to what we are used to and do not have great expectations for furniture'.

Differences in expectations of sitting comfort were discussed, from high comfort in cars to modest comfort in the home. In a discussion of comfortable furniture and a comment on the fact that people nowadays spend a lot of time sitting, there were contradictory opinions on the importance of physical activity and the need to motivate mobility: 'I put things I often use high on shelves expressly to do that motion; I do that as physical training'. The comment was followed by laughter and support from the majority of the group. The needs and aspirations for physical activity highlight a complexity in usability aspects and the importance of motivating mobility. Moreover, Rioux (2005) reflects that it may be that any housing-related hindrance made life at home all the more precious, leading to increased general well-being. That is, it may be these material difficulties were experienced positively because the old person overcame them every day, thus proving his/her ability to live in the home (Rioux, 2005). As human beings, we appreciate challenges that we perceive as adequate and that we can overcome.

A comment that all participants in one FGI agreed on was, 'I regret that in my prior life I bought so many big, broad, soft easy chairs. You don't sit so well in them anymore. The things you like change. We may reflect about furniture that suits us for our entire lives, but I'm not so sure. I regret, for example, that I never considered and put enough money into better dining room furniture; comfortable chairs with proper armrests that you can sit in and eat for a long time. If I had bought comfortable chairs when I was newly married, I would be very happy to still have them today. This never-ending buying just because you don't reflect on the fact that you should have the pieces of furniture in more than one way'.

One question concerned what added value meant to the participants. Answers were characterised by including both aspects of usability and affective product experiences. An apt choice of words was, 'Added value for me is that a product complies with its basic values and that it gives something in addition to that. What it gives can be of various kinds. It can give extra pleasure, an extra aesthetic experience or some kind of extra kick'.

Ideas for improvement

That the participants had chosen to move to housing especially developed for seniors

indicated their insight that the design of the environment can encourage successful adaption to the changes that age may bring. The key to aging in place, according to Pynoos et al. (2003), is maintaining the right fit between a person's abilities and the demands of the environment. The participants expressed the importance of the design of furniture starting from the user's physical and cognitive assets, skills, limitations and needs for rest and mobility. However, to be used with joy and dignity and be desirable for seniors, a piece of furniture has to be comfortable and pleasurable. To be attractive on the senior market, a piece of furniture has to reflect the user's identity, create a homelike feeling and not be perceived as a typical assistive product or a product obviously for elderly people, residential care or offices.

Comfortable, practical and durable furniture and other interior products that are easy to clean and maintain were valued and needed. Examples of issues raised are as follows: ideas about indoor rollators that could facilitate mobility in the home and transport things; computer cupboards integrated in the interior; stools that made it easier to work in the kitchen for a longer time; the possibility of raising the head of the bed; climbing stools that made it safe and easy to reach higher; dust-safe, built-in storage; sitting furniture for the hall; and various supports that relieved pressure from heavy books, laptops or newspapers. What was vital for all the suggested ideas was that they should provide domestic comfort and not be bulky or cumbersome. An example of a smart, space saving and effective piece of furniture suitable for small apartments mentioned in one of the FGIs was a low climbing stool with wheels that lock when you stand on it, and that was an integrated part of the kitchen interior. All participants agreed on this. However, according to one participant, one should not climb due to the risk of falling.

User requirements for furniture

Products that were highly valued in the participants' statements can briefly be described as usable, comfortable, pleasurable, inspiring, making it easier to be with others and providing an aesthetic experience, an emotional relation and an opportunity for living in the home for a long time. General usability requirements elicited in the FGI study were, for example, properties that make furniture easier to clean (i.e. enable the user to reach under with a vacuum cleaner, are easy to move and not too big and bulky and/or movable with wheels that do not damage the floors). Built-in solutions such as space-efficient wardrobes, stools in the kitchen and computer cupboards were appreciated. This was also the case with easy chairs and chairs that were stable and safe, not too low or too soft, with easy ingress and egress, allowing users to rest their legs and change sitting position. Some statements indicated that adjustable easy chairs that allow changing one's sitting positions are suitable. Furniture should be easily accessible and suitable for many diverse users. Beds should allow raising and lowering of each end separately. Material properties were discussed in the sense of being easy to take care of and clean. Easy maintenance was desirable, for example the possibility to wipe off surfaces of furniture with a wet rag. Dark surfaces were considered to require more cleaning because dampness and dust were more visible. Wood was mentioned as a preferred material, motivated by statements about maintenance.

Elicited usability aspects are formulated as user requirements and shown in the first column in Table 3. Appropriate functionality, suitable access, operation and maintenance are important requirements, but not enough from the users' perspective. Users also want their furniture to convey the appropriate affective product experience. This may be due to exploring, expanding, expressing and supporting the user's identity. Intentions for how product form should be experienced can be viewed as overarching objectives that are distinct from other influencing factors in the design process (Crilly et al., 2009). With such a view, the form development process is driven by the designers' efforts to guide or constrain the way in which the product will be experienced, and the success of the final solution may be

determined by the degree of correspondence between designer intent and consumer response (Crilly et al., 2009). Designers strive to encourage (or reinforce) positive associations whilst discouraging (or diminishing) negative associations. Designers intend to elicit emotional responses in users by designing products that will surprise, satisfy or delight. In the design process, these emotional responses often involve verbal definitions of intentions that can be translated into some appropriate form (Crilly et al., 2008). Based on the findings, participants' statements about affective product experience are identified as keywords to describe messages that the furniture should convey.

Focusing on the participants' positive comments on product qualities, a series of user requirements were formulated for the design of furniture (Table 3). The framework of product experiences, introduced by Desmet and Hekkert (2007), and a concept of usability were used to sort and present the findings in a series of user requirements.

Table 3. User requirements for furniture elicited in the FGIs and presented in four categories, usability and three levels of product experiences, based on the framework of Desmet & Hekkert (2007).

Concept of usability	*Affective product experience*		
Usability aspects	*Aesthetic experiences*	*Experience of meaning*	*Emotional experience*
Space saving	Small and dainty	Reflecting user's identity	Domestic comfort
Flexible	Light and airy	Reflecting the new living	Desire
Easy to use	Beautiful	Self-determination	Pleasure
Easy to clean	Harmonious	Independence	Spirit of togetherness
Easy to move		Individualism	Inspiration
Offering easy reach		Relaxation	Motivation
Usable over time		Security	Happiness
Stable and safe		Friendship	Pride
Preventing falls		Joy of living	
Healthy		Modern	
Sustainable		Timeless	
Efficient		Evoking memories	
Usable in more than one way		Attachment	
		Peace and quiet	
No sharp edges		Fitting in with other products	

The intention in using the categories of the framework of product experience to describe user requirements was to articulate and clarify the values of affective product experiences and make them more explicit in order to support more sensible and well-balanced decision making in the design process. Desmet and Hekkert (2007) argue that even though these three components of an experience can be clearly conceptually separated, they are very much intertwined and often difficult to distinguish in our everyday experience. User requirements presented in a holistic framework may help to recognise the values as experienced by end-users and give support to decision making in the product development process for the design of new products for the intended users.

Trustworthiness

Highly interpretative processes have been used in the analyses of the data, for instance, reducing the data, generalising from the data and highlighting specific statements. The researcher's awareness and thorough understanding of the purpose of the study can be seen as a guarantee that the results have been interpreted for the reader in a suitable way.

The questions in the FGIs captured the participants' active needs. Factors influencing the outcome were the unspoken norms and the contradictions between what users say they want and what they actually end up doing. The interaction within the group may also have influenced comments and statements in other ways than would have happened in individual

interviews. Since the FGIs were carried out in shared premises, no instrumental human-product interaction occurred with furniture or other interior products in the home environment. Although there was no physical interaction with products in their context of use, however, the validity of the focus group interviews can be justified on the basis that the participants had *use experience* in their homes, and so carry with them the context of home. By this it is meant that whatever the elicitation context, users with *use experience* can imagine themselves in their normal use context and base their statements on this image instead of on the one presented to them by a specific representation (i.e. *mediating object*; Engelbrektsson, 2004).

The FGI study presented involved only a limited number of people with something in common and assumed similarities that were relevant to the study. It is worth noting that the age span among the participants turned out to be as wide as 34 years. Thus, the youngest could in fact be a grandchild to the oldest participant. This age span reveals one aspect of the complexity of approaching older people as a homogeneous group, since they belong to different generations. However, this age span and the interaction in the interviews elicited in-depth and rich findings about needs among different generations, needs that the participants took for granted and different perspectives on various needs. This made it possible to analyse some general differences in experience, opinions and motivations for behaviour among different generations.

An FGI study has the advantage of enabling a small-scale study while still being useful for eliciting end-user knowledge and experiences to raise problems and address relevant and pressing issues in everyday life. The purpose is explorative in that it aims to identify all potentially relevant issues, not just the translation into product design (van Kleef et al., 2004). According to van Kleef et al. (2004), FGIs are more appropriate for marketing purposes, as they reveal more abstract consumer needs and values that are too intangible and allow too many degrees of freedom for unambiguous translation into product design. However, the authors of this paper emphasise the importance of considering needs and values that are beyond usability. These may be regarded by some professions as abstract and hard to capture.

Forthcoming use in research

The focus group study provided rich knowledge about the consequences of relocation and people's needs and aspirations. The study provided some knowledge—but not enough—about the context of living in the home, and how the participants interacted and were affected by the living environment of their home. Physical objects in a physical context would probably offer enriched knowledge. A study carried out in the context in which users lived was thought to provide deeper insights into end-users' needs, wishes and aspirations related to everyday interior products than the focus group study.

The results have been used as a starting point in a subsequent study with situated interviews in homes (Jonsson & Sperling, 2010). That study used an open thematic interview guide inspired by results from the present study and has covered themes such as comfort, pleasure, interaction and ideas of improvement of furniture and interiors. Further studies with end-users in their home focusing on issues of everyday life will probably provide more specific and valuable in-depth findings on unfulfilled needs. This may be due to the impact of the authentic environment and the opportunity for the researcher to observe human-product interaction and to raise and elicit situational issues. Such studies with instrumental human-product interaction or other studies with existing products or prototypes in usability labs may present more specific findings on usability and affective product experiences, knowledge that would be of greatest value in the later parts of the design process.

Bridging a user-centred way of thinking to the system of product development can be seen as the designer's field of work. The ideal-typical role of the design profession in the system of

product development is that the designer strives to find new solutions from a user's perspective (Edeholt & Ek, 2008). Designers cannot always be knowledgeable about end-users' needs and aspirations. The design practices that develop solutions that make life easier, more efficient, more comfortable or more pleasurable rely, largely, on insights about future users of new products. To design totally new or improved pieces of furniture for older people, results from user-centred studies have to be communicated to the system of product development. More preferably, people in the design process, especially designers, should be closely involved in creation of knowledge, followed by hands-on design work. An improved dialogue between the key actors can be created by establishing face-to-face meetings between end-users and designers. This will give designers an active role in carrying out the work to gain a better understanding of intended users and end-users an active role in giving feedback and actually influence the design. In the practice of design in the area of *Aging and Design*, it becomes especially important for designers to meet older people so that they may comprehend their situations and expand their understanding and empathic horizon because they tend to have different experiences and expectations. Understanding others' understanding, according to Krippendorff (2006), requires listening to what they say they experience and acknowledging their understanding as legitimate, not inferior or mistaken, even when it deviates significantly from one's own. Krippendorff (2006) has called this a second-order understanding and wants us to note that this is absent in technology-centred design.

Conclusions

An approach to furniture design that embraces various end-user needs is required to develop successful products from the viewpoint of users, since users benefit from more than general, must-be-met, aspects of functionality and the mechanical operations of interior products. Moreover, the importance of considering the diversity of peoples and their needs increases in the design of products that benefit users with emotional aspects, identity and meaning. If designers know which end-user needs dominate the experience of the particular product, they can concentrate on creating appropriate solutions for it. Furthermore, if designers know which individual needs are at issue, they can concentrate on developing suitable solutions for the customisation of particular product properties.

The present article suggested applying a sensible and well-balanced approach to meeting various end-user needs in user-centred design approaches within the field of furniture design for older people. Messages that pieces of furniture are intended to communicate should be planned with care and emphasis in order to make them relevant to most people in diverse phases of life, and not be stigmatising to those who need them. In addition, a dialogue between various end-user needs is required in the development of desirable products. Consequently, designers should create furniture that supports the physical, psychological and social changes that aging may bring and meet changes in society to better correspond to diverse end-users in the third age who strive for an identity as an independent and self-determinant individual.

Results from focus group interviews, such as in the present study, may be most beneficial for design project definition, user understanding and concept generation in the early parts of the design process. Information from user research can help to establish the direction of future design projects. Prospective exposure to users and their context allows designers to gain useful information on their beliefs and behaviours. This article concludes that designers may benefit from being closely involved in the creation of end-user insights to ensure that the findings are adequate for the present challenges' specific needs and embrace a holistic perspective on humans' needs.

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