Our little boxes: preconceptions and empathy on design for older adults

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Abstract: To deal with the world's complexity, we often categorize people. Sometimes, we may think that we design for a specific user group e.g. older adults, but we may base our design on social preconceptions deeply rooted in our subconscious. This creates distance between the designers and the users. Lately, I conducted a literature review to collect design guidelines for designing technology for older adults. This made me reflect to my practices as a designer. Do I really understand the users' needs or am I just blind from how the society I am leaving in perceive older adults? This opinion paper presents my reflections on how our preconceptions influence empathy creation, and when we use teaching as a patch solution to bad design.

Key Words: Design practice, older adults, empathy, preconceptions

1.Introduction

In the song "little boxes" by Malvina Reynolds, people are described as shaped by the society to "look just the same" have similar activities and habits, based on the place in their lifetime. It is in human nature to place people, concepts, ideas, even the perception of our own self into boxes, to categorize them. It helps us deal with the complexity we live in. Of course, most people will agree that stereotyping is unwanted, but it seems impossible to have a completely blank slate for every person, and respectively for every user of the technology.

In the past, I worked in the field of designing technology for supporting behavior change. In this field, the first stage for change is awareness of an issue (Weinstein, Blalock, & Weinstein, 2002). Six months ago, I started working on understanding the technological needs of seniors in Sweden. The mentality of our group is to design for seniors without assuming they are novice users of technology. My first task in the new position was to read related literature chosen by a multidisciplinary team of experts and extract design considerations. Through this literature I became aware of my attitude/behavior as a designer/researcher working with senior users.

In this opinion paper I would like to discuss the problematizations emerged by reading the literature regarding designers' attitude and behavior towards designing technology for older adults. The approach in this paper is more reflective rather than analytical, as I try to investigate how my "little boxes" influence me as a designer of technology. More specifically, I will present the literature not as a review but as a basis for my problematizations related to my practice as a designer currently working with older adults. After the presentation of the literature and the design considerations derived from it, I will discuss the two main problematizations in relation to designers' attitude and behavior that can be reflected through the design and unwittingly perpetuate an undesired image of older adults.

2. The literature.

The multidisciplinary design team working on the literature collection consisted of five researchers in the fields of engineering, adaptive systems, human-computer interaction,

social media studies and psychology. The researchers proposed 65 articles based on their expertise and what they thought relevant to designing technology for seniors and adaptive interfaces. Form those articles, each researcher picked at least three, as "must to read", resulting to 14 (see table 1) focused on seniors. My task was to summarize the articles and extract the design considerations to use in our project. The literature was divided in two categories: the articles attempting to understand seniors and the ones presenting seniors.

Table 1: Articles of the literature review. For the rest of the paper the ID of the articles will be used

ID	Title	Reference
1	Multi-layered interfaces to improve older adults' initial learnability of mobile applications.	(Leung, Findlater, Mcgrenere, Graf, & Yang, 2010)
2	Designing User Interfaces for the Elderly: A Systematic Literature	(Dodd, Athauda, & Adam, 2017)
3	Modeling the Oldest Old: Personas to Design Technology-Based Solutions for Seniors	(Reeder, Zaslavksy, Wilamowska, Demiris, & Thompson, 2011)
4	Interviews with digital seniors: ICT use in the context of everyday life	(Quan-Haase, Martin, & Schreurs, 2016)
5	An age-old problem: Examining the discourses of ageing in HCI and strategies for future research	(Vines, Pritchard, Wright, Olivier, & Brittain, 2015)
6	Rethinking Age in HCI Through Anti-Ageist Playful Interactions	(Ferri, Bardzell, & Bardzell, 2017)
7	"Tell It Like It Really Is": A Case of Online Content Creation and Sharing Among Older Adult Bloggers	(Brewer & Piper, 2016)
8	A literature survey on older adults' use of social network services and social applications	(Coelho & Duarte, 2016)
9	Usability Analysis on online Social Networks for the elderly	(Chen, 2009)
10	Computer use by seniorsA multi-disciplinary review	(Wagner, Hassanein, & Head, 2010)
11	Factors Predicting the Use of Technology: Findings From the Center for Research and Education on Aging and Technology Enhancement	(R.Giudicessi & J.Ackerman, 2006)
12	Cognitive Aging and Computer-Based Instructional Design: Where Do We Go From Here?	(Van Gerven, Paas, & Tabbers, 2006)
13	"My Hand Doesn't Listen to Me!": Adoption and Evaluation of a Communication Technology for the 'Oldest Old'	(Neves, Franz, Munteanu, Baecker, & Ngo, 2015)
14	''Who over 65 is online?'' Older adults' dispositions toward information communication technology	(Vroman, Arthanat, & Lysack, 2015)

The articles trying to understand seniors are descriptive and mostly based on empirical (1, 4, 7, 13, 14) rather than literature studies (8, 11). Article 1 supports that seniors prefer static adjustable menus. Articles 8 and 13 list factors that made new technology and social media networks adopted. Articles 14 and 11 present different seniors' profiles using technology. Articles 3 and 7 focus on understanding which older adults' needs are covered by technology. The articles trying to present seniors are based equally on literature (2, 12) and empirical studies (3, 9). Articles 2 and 12 focus on the seniors' cognitive and physical aspects and even compare them to people with disabilities. Article 3 suggests two personas of seniors living in a care facility, and article 9 conclude that seniors do not use social networks because of cognitive, physical, and behavioral differences. Finally, article 6 is focused on gamified design that supports caregivers to empathize with the seniors; and article 5 underlines the vocabulary used in ACM literature to describe seniors inviting the community to avoid perceiving seniors as a socio-economical problem.

Based on the literature, I suggested a long list of design considerations to the team. Here, I present the most relevant to the discussion. These design advices are: (1) address senior's socio-cultural needs, (2) offer multimodal interaction, (2) accommodate for different physical and mental abilities, (3) fix basic usability issues by designing intuitive interfaces and following Nielsen's heuristics.

3. Discussion – Identification of my little boxes

The two main issues to be discussed are the importance of normality and medical model of disability - which seem deeply to influence designers when designing for seniors - and the lack of communicating empathy from the design tools.

Medicalization – Little box of normality. It was interesting to see article 5 exposing the biases in ACM publications towards seniors, concluding that we should stop unwittingly perpetuate the impression that seniors are a socio-economical problem. Seniors (and people with disabilities) often considered depended because of defective mental and physical abilities, as the articles mentioned e.g. 2, 8, 9, 14. This is a residue of the medical model of disability (Jackson, 2018) that assumes there is a normal healthy body and mind and when someone deviates from it, they should be fixed with the use of modern medicine. The model has been criticized that diminish people to only mind and body excluding their social context as a source of their defectiveness (Wendell, 1996), namely, the same person in a different environment may have be perceived as normal. Noting that different environment in the digital world can be different ways of interacting (multimodality), if we choose to not facilitate multimodality, we force users to interact in a specific way which may not be optimal for them.

When designing technology, many factors influence the designers' decisions (Harold G & Stolterman, 2003; Mylonopoulou, Väyrynen, Stibe, & Isomursu, 2018). Therefore, if the medical model is inherent in a society the designer may act accordingly, thinking that seniors have deteriorating abilities and in order to become independent they must recover their previous abilities, supported by technology. Of course, designers collect data from the users and try to understand what users need, want, and value (Nelson & Stolterman, 2012) but how we can be sure that we really listen the users and we are uninfluenced by the medical model?

Often designers use personas to focus the design (Chang, Lim, & Stolterman, 2008) to the specific user group, e.g. seniors. The personas are fictional characters created by the data gathered from the interaction with the users (Grudin, 2006). However, how we gather and analyze the data, and what data we choose to attribute to the persona, can also be influence by the assumptions inherited to the society e.g. medical model. In that way we unwittingly perpetuate specific mentalities.

It was striking that many articles suggested recommendations for designing technology for seniors, long ago discovered for casual users (Nielsen, 1994). Similarly, the importance of intuitiveness in good design (regardless the age of the audience) was also discussed in the past e.g. (Djajadiningrat, Wensveen, Frens, & Overbeeke, 2004). Why these were senior-specific recommendations? It feels like we are used to technology giving us trouble (e.g. because the copy icon is misplaced or because we cannot cancel action we chose). We are expected to deal with it, if we cannot, we need

training. Similar point raised by Perez in her book invisible women (Criado Perez, 2019) (p.151), presenting that women needed education on how to use the new bio stoves while the problem was that the designers focused on improving the air quality without taking into account other needs. This shows that designs focused on what they see as important, discard the users' wants, needs, and values resulting on users training to overcome issues they face with the new artifact.

When one focuses on what seems to be important e.g. physical and mental normality as prerequisite to function, may miss what is important for the users. For example, in the workshops we had with seniors rarely physical issues considered a big problem. A user, for instance, had shaky hands they used a pen to interact with a cellphone, instead, they were concerned about their online privacy and their data. Some of them had a sophisticated folder structure for bookmarks, others used applications on their phone, and some preferred to use laptops. As an observer, I fail to see the difference to other users, as some can remember/comprehend more information, and others can think/act faster. Why we think that the physical and mental decline is an issue if people experiencing it as an everyday reality?

Lack of Empathy – Little box of user needs. Empathy lacks definition (Elliott et al., 2011), but, (Battarbee et al., 2002) described it as "the users' emotional understanding". Only article 6 referred to empathy-building (for caregivers). In design empathy with the users is vital for the product quality (Haag & Marsden, 2019). Many cannot imagine how their life would be if they lack an ability, they consider normal (Wendell, 1996). If the designers perceive the user group as "different", they may keep distance from the user (Visser & Kouprie, 2008).

Due to practical limitations (e.g. budget and time) often the people contacting the users are different than the people designing leading to an empathy barrier. One tool to build empathy with the users is the persona mentioned before (Ferreira, Silva, Oliveira, & Conte, 2015; Haag & Marsden, 2019). However, things like quotes and pictures can raise empathy they were excluded in the suggested senior personas of article 3. Another tool is a framework that helps designers to get into the shoes of the user and then take a step back (Kouprie & Visser, 2009). The point is to understand the user, experience the user's reality, and then take distance and reflect on how you experienced the users' reality and how they experience it. Probably for someone "healthy young" person, shaky hands or defective memory are a problem, but this may be a senior's normal life, and therefore, less of an issue.

4. Conclusions

Before reading the literature, I was unaware of my "little boxes", like many of us are. Now, I try to reflect on what I think is normal for and an issue of a person I encounter, especially seniors. Through the workshop, I hope to cover three opportunities (1) to experience participatory design (2) to discuss what it is rational to expect seniors need to learn, and where we use teaching as a patch to bad design (3) to start being aware of my preconceptions when planning teaching for seniors.

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