Designing for Aging across Borders: Craft, Body, Personhood

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This position paper contributes to the HCI agenda on aging with a focus on novel design methods and interactive systems emphasizing personhood through body-centric and sensory stimulation approaches. It presents three case studies focusing on innovative technologies for cuing autobiographical memories in old age, supporting stimulation needs in dementia in the Western context, and for supporting weaving craft practices in developing context. We conclude with three design principles highlighting craft practices, bodily involvement, and personhood that can be seen from the lens of the individualist-collectivist cultures.

CCS CONCEPTS • Human-centered computing • Human computer interaction (HCI)

Additional Keywords and Phrases: Aging, Memories, Practices, Developing contexts, Body-centric technologies, Sensory stimulation

1 INTRODUCTION

This position paper contributes to the HCI agenda on aging across borders. It focuses on novel design methods and interactive systems emphasising personhood through body-centric and sensory stimulation approaches. It presents three case studies focusing on innovative technologies for cuing autobiographical memories in old age, supporting stimulation needs in dementia in the UK context, and for supporting weaving craft practices in developing context. It aims to explore how to support older adults' current practices through innovative design, and how to tailor such technologies, and design guidelines or methods underpinning them, to different cultural contexts. We draw from HCI research in aging, and body-centric technologies, to further highlight three case studies from my body of work in this space over the last years. The concept of personhood in aging has received considerable HCI attention through research methods such as craft-based activities [22][30]. Related to craft, we have seen also a growing HCI interest in the role of the body in the design process, both of the user [11][28] , and of designer [26][29], framed under the somadesign methods [1]. Another approach to support personhood is through memory technologies intended to strengthen the sense of identity in old age. Here we have seen different technologies from lifelogging [5] to tangible artifacts [30] supporting memory recall or forgetting [9][23][24]. The paper concludes with a reflection on the key themes emerging across these case studies, highlighting craft practices, bodily involvement, and personhood that can be seen from the lens of the individualist-collectivist cultures.

2 STUDIES

2.1 Case Study 1: Technologies for Self-Defining Memories

Self-defining memories are a special type of autobiographical memories capturing significant emotional events in one's life. They are important for one's sense of self, yet likely to deteriorate as people age, hence digital cues for supporting them could be particularly useful. We explored these memories through three studies. The first study consisted of a ten week craft project with 3 participants (all women, between 56-69 years of age) [25]. Findings indicate that participants face challenges in identifying their self-defining memories, and that most of these memories tend to be associated with positive emotions and interpersonal relationships. Findings also indicate that not only memories are challenging to access, but also their best cues, either because they never existed or were lost. In this context, the value of newly crafting cues for such memories was particularly emphasized.

In the second study, we explored self-defining memories through contextual interviews with 8 older adults [15]. Findings show that most of these memories elicit positive emotions around achievements or intimate relationships, supporting mostly relational self, followed by the personal self. Another important outcome is that most of the cues for these memories are objects, either ready-made or crafted, albeit less so digital ones. Objects crafted through sewing, weaving, embroidering or wood crafting have been successfully used to cue self-defining memories, and especially those related to loving relationships. Our findings argue for the importance of personal involvement in the making of crafted cues, which unlike ready-made objects, could better support memory recall due people's stronger involvement when the memories are formed or encoded. Findings also indicate that such cues are more likely to be effective when they embody layer meaning, by relating to multiple goals or self-identities. Not at least, object-based cues, despite their value, can become less accessible since they are cherished possessions that can be passed to adult children or lost in later life.

The third study focused on co-designing flavor-based cues for self-defining memories with 4 older adults using 3D printing technologies [4]. These co-design process was body-centric involving rich sensory stimulation and engagement. Findings indicate the importance of relationships in the identified memories, and that most of these self-defining memories were also about positive emotions. The most used tastes involved in the flavor-based cues were umami, salty, and sweet highlighting the pleasurable qualities of these food-based experiences.

2.2 Case study 2: Technologies for Stimulation

In a recent study focused on dementia, we explored how novel large displays may be used to support personhood [17]. This fits in the larger body of work on how public and personal devices can be successfully integrated [1][3][10]. Through a one-year deployment of such wall displays in a dementia care home, and 24 interviews with staff, family members and residents, we explored how these displays become domesticated and integrated in the care home life. Through a participatory design and research approach, the care staff were entrusted and supported to source the online generic content for the displays in order to meet residents' in the moment emotional needs. Findings indicate that the displays engendered strong attachment and engagement, through 4 psychosocial interventions. These involved nature-inspired content such as sea- or forest-scapes videos supporting mood and behaviour regulation particularly for agitated residents, staged experiences such as being in a church or restaurant, supporting sensory and social stimulation, music-based videos supporting sensory stimulation and mood regulation based on residents' emotional needs and interest in listening, singing, or dancing, and collective reminiscing mostly with genetic but also personal media. A key finding was large displays' potential to strengthen

residents' personhood by providing multiple choices for watching the displays, interacting with them, requesting content, or having the content provided by staff based on residents' needs.

2.3 Case Study 3: Technologies for Weaving Practices in Developing Context

Finally, we also explored the cultural heritage practice of songket weaving, a handmade fabric made of metallic threads inserted though cotton or silk, with over two hundred years of history in South Asia [30]. This fits in the larger body of work on understanding and designing for socio-technical infrastructures [6][7][8]. We interviewed 92 participants in a region of Malaysia recognized for its songket quality, including merchants, customers, designers and government staff, as well as 26 rural weavers. Most of the weavers were women, of 25 to 80 years of age, with about a third of them over 65. Findings indicate participants' resourcefulness for integrating mobile and social media technologies in their practices such as Facebook, Instagram and WhatsApp for reaching out and communicating with customers. Findings indicate the challenges of rural weavers, as they are at the bottom of a hierarchical structure with less capital, skill, mobility, knowledge about the market and visibility in the market. Interestingly, this economic vulnerability of rural weavers, reflected in limited wages and welfare, is underpinned by an exploitative relationship with their merchants, paradoxically perceived as beneficial by the weavers. Such mutually advantageous exploitative relationships [31] require special HCID attention when we aim to design for economic empowerment and justice, away from the paternalistic Western-centric approach, while accounting for the local values.

3 DISCUSSION

We now reflect on the key themes that these three case studies highlight, in the context of aging across borders. If the first two case studies reflect Western context (UK), the third reflects developing context (Malaysia). Our themes highlight craft practices, bodily involvement, and personhood that can be seen from the lens of the individualist-collectivist cultures.

3.1 Craft practices

In Case study 1, we have seen the value of crafting memory cues for supporting the recall of self-defining memories [4][15][25]. The importance of craft has been less highlighted in Case Study 2, although much research has shown its value in dementia care for supporting agency and personhood [17]. In Case study 3, craft is less a leisure or therapeutic activity, but a means to earn a living [32]. Interestingly, most forms of craft presented in the three case studies, are gendered crafts, taken predominantly by older women. Digitally augmenting craft practices raises interesting design challenges and opportunities, and HCI work in this direction has started to emerge [20][30]. We argue that this is an interesting design space to design for aging across borders, with potential benefits for experiencing pleasure of working with one's hands, and creative self-expression.

3.2 Bodily involvement

The role of the body while designing for aging is another important aspect, matching a growing HCI interest in body-centric technologies [1][11][16][28][29]. As seen in Case study 2, sensory stimulation is much needed in older age, and technologies augmenting it can be particularly useful [17]. Thus, large, wall size displays increase attention and arousal leading to enjoyment and immersion [14]. In designing flavor-based cues, we employed a sensory rich process that was particularly engaging and enjoyed by participants. Craft activities taking place over 10 weeks in

Study 1 were particularly enjoyed due to the sensory stimulation and creative expression [25]. In the context of designing for aging across borders, bodily involvement is particularly beneficial in itself, and a valuable resource to design with through craft-based activities.

3.3 Personhood through the exercise of choice

When crafting is performing as a leisure or therapeutic activity, it is likely to support personhood. Key here is the aspect of choice, which we have seen as particularly important to support personhood also in Case study 2 [17]. Personhood is also be related to the different levels of self-identity such as personal, relational or collective self [27]. We have seen the stronger importance of relational self across all three Case studies. This is interesting, given that the studies span different cultures. While this is to be expected in the more collectivist Malay culture, it is somehow surprising in the UK individualist culture. However, the gendered aspect of this practice, and women's affinity for interpersonal relationship and mother role, may weight heavier than the individualist aspects of Western culture. One way to harness this insight when designing for aging across borders is by supporting the exercise of choice, albeit not just for personal but also for relational self, especially for female older adults.

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