Craft-based Exploration of Sense of Self

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Abstract
Self-defining memories are crucial for the sense of self, yet we know little of how to cue their recall in old age. This paper reports on interviews with 3 participants in a 10 week craft project. Findings indicate the challenges of introspection, of recalling negative self-defining memories, and of inaccessible cues, and we conclude with three design implications for addressing them.

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Sense of self; self-defining memories; cues; elderly.

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H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction
By capturing self beliefs and identities, the sense of self is crucial for wellbeing and people's perception of continuity throughout lifetime. Unfortunately, sense of self becomes increasingly fragile in the old age with the natural decline of memory functions or due to the offset of dementia. Much HCI research has explored autobiographical or episodic memories and the value of cueing them for reminiscing [37], reflecting [27], forgetting [29,32], or for supporting sense of self [38,39]. However there has been limited exploration of the *self-defining memories* centred on most important life themes and concerns [7], and how they may also be cued. We report on interviews with 3 elderly women who took part in a 10 week craft project aimed to

sensitize participants to the topic of self-identity and the cues they may use to prompt the recall of who they really are in later life. The aim of this paper is to explore the design space of memory technologies to support sense of self in elderly people, by focusing on the following questions:

- *Who am I*: the identification of self-defining memories that people recall as relevant for their sense of self;
- *How can I remember who I am*: the exploration of cues identified as valuable in recalling self-defining memories both in the present and future when one may suffer from weakened sense of identity;
- *My life scrapbox*: the gathering/crafting of a small collection of existing or new objects capturing these cues.

Related Work

Memory Technologies and Sense of Identity

HCI work on memory covers a breath of technologies and design explorations from wearables for selective caption and recall [34,37] to tools supporting forgetting [29,32], focusing on both collective and personal memories [36] and their specific issues of privacy and control [13]. Memory technologies have been also explored with a range of user groups, but in particular with elderly people due to its potential to address the natural cognitive and memory decline as well as that due to dementia [10,18,34,38], or even in the challenging context of end of life [30].

Relevant memory technologies addressing self include interactive public art installations for supporting the sense of identity of dementia patients while allowing also the exploration of intimacy and possessions [38]. Wallace and colleagues [39] led a co-design inquiry with a dementia patient and her husband to explore and support her personhood and agency. The value of craft for supporting sense of self of participants suffering from Alzheimer's disease or mild cognitive impairment has been also explored through Multimedia Biographies [10] co-designed as collages around major life themes. Findings showed their value in supporting reminiscence of predominantly positive events, but less for one's sense of self. With respect to memory cues, much HCI work has explored the value of different cues and their modalities in supporting recall of episodic memories. Here, the focus has been mostly on visual [34] or audio cues [14], while other types of cues such location-based [19], or crafted ones [25] have been less explored. The issue of self-identity and how it can be supported through cueing relevant self-defining memories has been also less explored.

Cueing the Self

Sense of self or identity captures perceptions and attitudes about oneself, often as a set of roles or identities [35], i.e. physical, moral-ethical, personal, family, and social self [17]. Sense of self is crucial in organizing behavior and contributing to one's wellbeing by providing a sense of continuity in time. A wealth of studies on autobiographical memories have shown their fundamental role in our sense of self [23,24,29] structured around one's *identity as life story* [21]. A useful model here is the *self-memory system* which conceptualizes autobiographical memories as consisting of knowledge of the past, present, and future self, categorized into even-specific knowledge, general events, and lifetime periods [9,22]. The event specific knowledge captures episodic memories and tends to be rich in sensorial-perceptual details.

An important role in such narratives is played by *self-defining memories* of highly significant, emotional events, vividly recalled and repeatedly revisited which tend to capture the most important concerns in one's life [7]. When experienced as negative emotions such events are challenging for the sense of identity, demanding effort of narrating, exploring, searching for new perspectives, or questioning assumptions [22] in order to reconstruct the narratives into ones offering stronger coherence and positive resolution. Coherent redemption narratives providing closure and emotional resolution are particularly important since they correlate with various measurements of wellbeing [20]. The process of narrative processing is challenged by the tendency to make memories that support the current self highly available, and to inhibit those undermining it [7].

Important aspects of narratives are life roles. In interviews with over 30 dementia patients in nursing home, Cohen-Mansfield and colleagues [4] explored the endurance of self-identity through the professional, family, leisure roles, and personal attributes. They showed the all roles deteriorate albeit the family roles are best maintained, and discussed their importance in strengthening the sense of identity. Crete-Nishihata and colleagues [10] suggested the value of ambient displays showing past photos, as well as recent ones automatically captured by SenseCam, for improving the sense of self of people suffering from Alzheimer's disease. Additional insights into sense of identity come from consumer research on the role of possessions [5]. In his seminal work, Belk [2] showed that possessions are both components and determinants of the development of the sense of self, and identified five relevant categories including collections, money, pets, other people and body parts. Csikszentmihalyi [11] extended such work with categories of household objects relevant for the sense of self such as objects of power, self-continuity and relationships, while Sartre [30] identified three ways in which possessions become included in one's extended self, through passionate knowing, creating possessions, or controlling them. Previous work also indicated the value of emotions in creative design [26].

Method

This study aims to explore the cues for self-defining memories and their value in supporting the sense of self of elderly people.

Craft Workshops

To sensitize participants to the issues of self-identity and self-defining memories, we organized and facilitated a 10 week craft project where interested people worked in small groups for two hours weekly. The project was designed as part of the program of activities of Age UK, the largest UK charity for elderly people. The project aimed to facilitate people to think about their self-identity and the cues they may use to prompt the recall of *who they really are* in later life. In the introduction workshop, we introduced the concept of *Scrapbox* which may be crafted to hold the cues for self-defining memories. We used the concept of scrapbox rather than scrapbook, to allow participants to also gather or make small objects as *capturing the essence of who they are* rather than using merely pictures as traditional media for scrapbooks. The project was attended by four participants, all elderly women between 56 and 69 years of age with prior experience of scrapbooking. One participant dropped out half way through the project, while the others attended all the weekly workshops. Apart from the

initial introduction and weekly reminders that this project is about one self, participants were encouraged to craft in a self-directed manner.

Interviews
At the end of the project we collected interviews with the three participants who attended the entire project. The aim of the interviews was to elicit self-defining memories capturing the essence of oneself; and the cues that could prompt such recall. We asked for statements to the questions *Who am I*, *what memories did you identify* and how they can be described in detail, *what objects did you select to capture each of these memories and why,* what qualities these cues have, and how are they organized.

Data analysis consisted of a hybrid approach where existing concepts such as characteristics of self-defining memories were used for the deductive coding, while new concepts grounded on the empirical data contributed to the inductive coding [16].

Findings

Study participants described in total 13 self-defining memories, including 9 of significant positive events and 4 of negative ones. Ten of the self-defining memories were positive events from one's childhood, confirming the findings on the increased number of autobiographical memories from the early formative years, i.e. reminiscence bump [23]. Interestingly, the self-identities that participants provided in response to the question "*who am I*?" included roles related to family identity such as "*mother"* or "*grandmother"* (6 answers) and personal identity consisting of attributes such as "*creative"*, "*pet lover"*, or "*complicated"* (6 answers). The family roles support Csikszentmihalyi's findings on the gendered value of relationships for sense of self [13]. These roles however tend to develop in later formative years, suggesting that self-defining memories precede the development of these identities.

The Challenge of Knowing and Revealing One's Self
While the identification of roles and attributes is less of an issue, identifying memories significant to one's life is a challenging process. Often, participants do not know where to start either because they have too many self-defining memories to search from: "*I don't know. I've got lots of memories. I don't know who I am so I don't know*" [P3]; or too few: "*I don't have a lot of memories"* [P2]. Participants also expressed the need to not remember: "*Unfortunately, I know this sounds awful but it is a fact...a lot of the memories, certainly from 16 onwards except some holidays and things like that, there's not a lot I would like"* [P3]. They also expressed difficulties articulating the memories: "*It's very difficult to put that in words, really. I am who I am. It's very hard"* [P1]; "*things just jump onto me, I don't know. I don't know how to say things […] I'm not very interested in me"* [P2].

The Importance of Negative Self-Defining Memories
An important finding is that although most of the self-defining memories captured emotional positive events, the emotional negative events represented a powerful undertone. These memories address the critical issues of disability, teen pregnancy, and broken relationships. Disability sheds light on the relationship one has with her body [2] and how this shapes one's overall perception of oneself and personal identity: "*When I was five months, I've never learned how to walk properly and it has affected my whole life because there are a lot of things I can't do […] Obviously, it still gets to me now […] I still hate the fact that I limb. [Interviewer: I didn't notice it] Right. But I do. That's*

the biggest thing I know" [P3]. This is a powerful theme reflected on several self-defining memories which were shaped into a redemption narrative: *"I got some operations but [I also] liked the attention. Because when you've been in hospital a lot, you have visits. You get presents. So I was what we call a good brave soldier*" [P3]. This is an important outcome showing that the integration of negative self-defining memories into a coherent redemption narrative is a complex process which may never be fully completed. While the progress on this integrative process is crucial for one's wellbeing [20], findings indicate that for some self-defining memories, this process cannot even begin: *"Unfortunately, without going into too much detail something that changed my life forever, and this sounds awful but it's a fact: I got pregnant at 16 […] To this day, I'm still ashamed"* [P3].

Another negative self-defining memory was the one of broken relationships, affecting both the family and personal self: *"I got married when I was 19 [had three children] and I brought them up alone. Then I met the husband number 2 [who] was a drinker: one time he went to work and I never saw him [and] then I met husband number 3. I lived nearly 20 years with them and then he left. So I thought there's something wrong with me"* [P2]. Such memories are at times described in contrast to a cherished dream: *"I would have killed to be mum, dad and children, just normal. That's what I wanted all my life and I've never managed it"* [P3]. Although such negative events are seldom recalled, they play an unrecognized role in the organization of self-defining memories: *"To be perfectly honest, if I really did do a memory box, there would be lots of blanks. I don't know what it's going to take for me to forgive myself. I still feel as ashamed of getting pregnant at 16. There's such a lot that I wouldn't put in because it still bothers me now. I still hide it"* [P3].

Inaccessible Cues

Unsurprisingly, participants discussed mostly ways to cue positive self-defining memories as the negative ones were not intended to be remembered. Some events however do not have straightforward available cues either because they never existed or have been lost or damaged: *"I loved harvesting. It was my favorite time of the year [and] my father taught me everything […] I led the driver combine when I was about 10 harvesting with my father. [Interviewer: How can you capture the essence of that memory?] Just the long summer nights working on the fields, when the sun went down: the time to harvest … [Interviewer: do you have any cues?] I've got nothing. All pictures all gone [but] I could do a quilt quite easily to recreate that image"* [P1]. This quote suggests the value of recreating the cues through craft [25], and the importance of identifying what a good cue is. In this case: the first person perspective of a larger vista capturing the details of a harvesting summer evening.

A similar example of recreating the cues for a mischievous childhood event is using substitute pictures: *"My grandma planted strawberry plants and one day she was out and I thought "Oh, let's do a bit of gardening to help out pulling weeds" and I've pulled all strawberries out […] I got told off for pulling them all but I did feel loved as a child. Oh yes, yes […] It's just stuck with me there in my head. Sometimes, when I see strawberries I recall that. [A good cue would be] a picture of a strawberry [or better] a cottage garden strawberry"* [P2]. Another example of reconstructing an object key for a specific self-defining memory is by merely copying it from memory: *"My father bought me*

a doll in a little case [but] it got destroyed when my sisters and her friends came around. [Interviewer: Do you think you can recreate the doll?] Oh yeah, I could do that. I have my dolls before... I never thought about doing a doll boy. Yeah, that would be quite interesting to do" [P1]. This suggests the value of craft for supporting the extended self [30,32].

Implications for Design Research

Tools for Supporting the Introspective Self

When asked directly, participants find it difficult to identify key aspects of who they are, despite the 10 week project aimed to sensitize them towards this issue. Findings indicate however that when asked to recall key events of their lives, participants found it easier to recall predominantly positive events. Without prompting, all participants started to recall childhood self-defining memories and the rest were easier to recall in chronological order. This suggests the value of scaffolding the exploration of sense of self with tools supporting the recall of positive self-defining memories. Our craft project was one such tool, but additional ones could have been used during the interview to facilitate recall. For example life timeline or genealogical tree could have assist participants, particularly when combined with craft workshops.

Craft-based Methods for Cueing Self-Defining Memories

Another interesting finding is that at times, the cues for supporting recall of self-defining memories are inaccessible. This is an important outcome, especially in the light of the findings showing that such cues are not easy to imagine. The challenge here is that people find it difficult to capture the essence of an event which is often an abstraction, and to subsequently condense it in a single visual representation. However, if the potential cue can be imagined, then it can also be materialized through craft. Here, we have seen that the abstraction involved in the cuing process ensures that the crafted cue, albeit a mere simulation of what a real cue may have been, it is still considered valuable for cuing its self-defining memory.

Ethics of Exploring (Negative) Self-Defining Memories

Study findings suggest that although the workshops and interviews were predominantly tailored towards the recall of positive self-defining memories, participants still recalled a few negative self-defining memories. Such memories are particularly problematic when they fail to become integrated in redemption narratives. They represent major life concerns which people tend to avoid and much care and sensitivity is required to help participants navigate through and away from such memories, particularly if they are not willing or able to confront them and their underlying limiting self beliefs. Exploration of such sensitive research topic may require explicit provision of counselling service to provide additional support when welcomed by participants.

Conclusions

This paper explores the self-defining memories with the aim to support the sense of self in elderly people. We report on interviews with 3 participants in a 10 week craft project. Findings indicate the challenges of introspection, of recalling negative self-defining memories, and of inaccessible cues which never existed or have been lost. We conclude with three implications for design research [31] addressing these challenges.

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