Pensieve Box: Designing Tangible Platforms for Digital Memorialization Practices

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Abstract
When someone close to us passes away, many of us seek to hold on to the memories, stories and objects that remind us of the departed. With a few notable exceptions, little research has been done into the role of material and tangible reminders in technologically mediated memorialization practices. In this work, we describe a speculative prototype design called *Pensieve Box*, which we employ as part of a cultural probe to explore how individuals might incorporate technology into their memorialization practices. We conducted an interview study with individuals who recently lost a loved one to investigate how a tangible interactive technology might be used within the context of personal memorialization and identified several themes around these practices that can inform future designs.
Keywords: Tangible Technology; Memorialization Practices
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1   Introduction

From the moment we are born, we begin experiencing the world and interacting with it, forming relationships and attachments to the people around us. Often these connections persist, even after the death of a close friend or family member, leaving a void in our lives which cannot be filled, except through remembrance. Geoff Bowker, in his book *Memory Practices in the Sciences* writes: "Time does not pass, it is frozen and collected into an eternal present" (Bowker, 2008). However, this eternal present is accessible only through recognizing past experiences and memories, which decay over time. We use technology to preserve pieces of memory through stories, images, and other media capable of capturing this "frozen time", but these are imperfect solutions in the face of human loss. Brubaker *et al.*(2013) describe how social networking sites support the expansion of temporal, spatial and social practices around death and grieving, writing that social networking sites "become unanticipated memorial spaces that can serve as archives of the lives of the deceased and social space for the bereaved" (p. 162). This is an evolution of pre-digital memorialization practices, which instead assigned significance to a specific location (such as a grave-site or memorial), a specific object (such as an urn or reliquary), or to the personal effects of the deceased loved one (Dobler, 2010). We connect these material practices to the rich body of work around tangible and embodied interaction in HCI, in particular as it relates to personal narratives and storytelling (see, for instance Fishkin, 2004; Hornecker & Buur, 2006; Mazalek, Davenport, & Ishii, 2002; Tanenbaum, Tanenbaum, & Antle, 2010; Ullmer & Ishii, 1997).

In this work, we explore tangible memorialization practices through the use of a speculative prototype design called the *Pensieve Box*[1]. We employed design sketches and an initial physical prototype to orient our conversations with participants in order to explore how individuals might interact with a physical object that serves as a post mortem embodiment of their departed loved one. The Pensieve Box is a physical memorial artifact containing a curated collection of digital "memories", which we contend can occupy a middle ground between traditional material memorialization practices (Grider, 2007; Jorgensen Earp & Lanzilotti, 1998) and the digital memorialization practices emerging on social media (J. Brubaker, Kivran-Swaine, Taber, & Hayes, 2012; J. R. Brubaker, Dombrowski, Gilbert, Kusumakaulika, & Hayes, 2014; J. R. Brubaker & Hayes, 2011; Carroll & Landry, 2010; DeGroot, 2014; Kalan, 2015; Roberts, 2012; Sanderson & Cheong, 2010).

2   Methodology and Study Design

To better understand the design space for a tangible memorialization technology like the Pensieve Box, we conducted a small interview study, using sketches, images, and descriptions of the system to elicit responses from participants who had recently lost a loved one.

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[1] The word "Pensieve" in this context is borrowed from J.K. Rowling's *Harry Potter* stories, which depict it as a magical basin in which one may relive selected memories.

2.1   Designing the Speculative Prototype

We first ideated over a potential tangible memorialization technology: the Pensive Box. We envisioned this as a physical box in which a touchscreen device like a smartphone or tablet could be located. On this device, we proposed to create a digital memorial that could display images of the deceased loved one and provide notifications of important shared dates such as birthdays, anniversaries, and other personal milestones. From the outside, the user would only see an ambient glow, indicating the presence of a preserved memory.   The idea here was to gently provide an opportunity for reminiscence, without subjecting the user to a continuous set of unwanted reminders about his or her deceased loved one.

Figure 1. Sketches and prototype of the Pensieve Box

2.2   Conducting the Study

We conducted interviews with 6 participants who had experienced the death of a loved one in the past five years, drawing primarily from our immediate social networks of family and friends. The participants ranged from 24 – 60 years in age and consisted of 4 women and 2 men. Two of these participants live in Mumbai, India while the others were residents of the United States. Of the participants residing in the US, one was of Indian descent.

The interviews were largely semi-structured and open ended, encouraging the participants to steer the conversation to topics that interested them the most. However, the general focus of these topics

was pertaining to death, their ways of dealing with the death of their loved one, their ways of remembering them, and the importance of physical objects in their memorialization practices.

The interviews were roughly divided into two parts. The first part delved into the participant's perspectives and experiences on death. In the second part of the interview, we showed them five crude sketches of the system and encouraged them to express their thoughts on it.

Participants were asked to bring with them a set of physical objects that reminded them of the person they had lost. This technique was specifically inspired by New South Wales Museum's use of personally significant objects to elicit narratives from diaspora communities in Australia (Thompson, 2006), and more broadly by the ways in which material objects have been used by people to tell their personal stories (Hoskins, 1998). This evoked strong memories and recollections during the interview, reinforcing our interest in tangibility and materiality. The rough sketches of the system also received an active response from the participants who shared interesting design ideas and preferences. The duration of these interviews was approximately 45 to 90 minutes. Two of them were conducted in person, while the others were done using video chat.

2.3   Analyzing the Interview Data

Following the interviews, we transcribed and reviewed the data, conducting an open coding process to highlight important themes raised by participants. Because our interest was primarily on design, we mainly worked to identify possible new design directions suggested by the participants.

2.4   Limitations of the Study

The number of participants limits the kinds of claims we can make about this design space, and we do not propose that the insights gained through represent any kind of generalizable truth around tangible memorialization. However, as this is still a relatively un-researched phenomenon, we contend that even a small sampling of data has value in inspiring new designs, situated in actual memorialization practices. We also recognize that there are some potential confounds in the two distinct cultural backgrounds of the participants within our sample of convenience. We discuss this in greater detail below.

3   Conclusions and Future work

Two primary themes emerged from our interviews:

1.) Participants indicated that social media alone wasn't a good source of material for memorialization, due to the lack of a social media presence for their elderly relatives.
2.) Participants indicated a strong desire to personally curate and select the materials for inclusion in any physical memorial.

We expected that we would see some distinct cultural differences between our participants from India and those from North America, however this did not end up being the case. While we cannot know for certain why this occurred, we believe that it was due to the secular beliefs of both participant groups. One of our Indian participants sums this up nicely:

"I think the question that you asked… about my religious beliefs is very relevant… I think my perspective towards this would have been different if I wasn't an atheist. Because then, I would believe in [an] afterlife and that is whole different direction." P02

Indeed, it seemed that religious affiliation was a more relevant indicator of participant views towards memorialization than cultural background alone. We suspect that a larger study with a more diverse participant pool will bear this out.

From our initial pilot study, we have determined that there is a significant interest in tangible memorialization, provided the platform is an open one. One of the missing pieces in this design space is a system for collecting and storing personal memories, in particular where elderly and less technologically sophisticated individuals are concerned. We propose the development of a platform intended to collect and store individual narratives associated with objects of personal importance, as a crucial enabling technology for tangible memorialization practices.

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