Motivating Lifelogging Practices through Shared Family Reminiscence

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Abstract

Developments in technology have meant that people can record and store vast quantities of personal information, termed "lifelogs". Lifelogs provide a glimpse of a person's life at a particular time and can range from collections of photographs to bank statements. Researchers are now finding that these personal records may be a valuable source to support memory and reminiscence in older adults.

It is our conjecture that older adults would benefit most from lifelog collections if the practice of lifelogging and lifelog devices is introduced when the individual is high-functioning, thus increasing the possibility of acceptance and allowing time for a significant lifelog to be collected. Our research will explore the motivations for lifelogging. In particular, we will investigate whether shared family reminiscence is a motivation for lifelogging in both younger and older adults.

Keywords

Lifelogging, Reminiscence, SenseCam.

ACM Classification Keywords

H.0 Information Systems: General

Introduction

This paper considers shared family reminiscence as a motivation for lifelogging practices. Lifelogging is the activity of digitally recording aspects of your life such as conversations, videos, photographs, emails and text messages. Lifelogging technologies are now emerging as potential memory aids to support people with severe memory impairments [2]. There has been extensive research into how visual lifelogs can be used to provide memory cues to support memory recall and reminiscence in people with cognitive problems [9, 10]. However, there has been significantly less of a focus on the lifelogging activities of healthy older adults.

One device which has gained significant attention in the field recently is the SenseCam (commercially available as the Vicon Revue, see figure 1). The SenseCam is a small digital camera designed to be worn around the wearer's neck. Unlike most digital cameras, the SenseCam passively takes photographs without any intervention from the wearer. Throughout the day the wearer could collect over 5,000 images which provide an accurate and detailed account of their activities. These lifelog collections may not have direct memory benefits for healthy older adults but as memory is associated with an age-related decline, collections may be valuable to them in later life. We are interested in identifying the benefits (if any) healthy older adults would gain from using lifelogging devices such as the SenseCam. One possible motivation which will be explored in this research study is shared family reminiscence.

Related Work

Reminiscence, the process of looking back over our lives, is typically associated with old age [7]. Reminiscence and reminiscence therapy has indeed proved to be a successful method to improve the mood of older people, including those with dementia [15]. However reminiscence is not limited to older adults. As Havighurst and Glasser [7] put it; *"Reminiscence is not*

figure 1. The SenseCam lifelogging device, now commercially named the Vicon Revue.

simply a phenomenon of old age… a 10-year-old child reminisces" (pp. 245). Webster et al. found that younger adults reminisce just as frequently as older adults however reminiscing purposes tend to differ with age [13, 14].

Story-telling and shared reminisces serve multiple functions within a family group. They serve to maintain memories of past relatives, to pass along moral or life lessons, to create a bond with other family members and to clarify dimensions of your own personality [13]. Mementos such as ornaments bought on a family trip can trigger these shared reminisces [12]. In their study of physical mementos, Petrelli et al. asked participants to tour their home and to pick out mementos that were important to them. They found that there was a lot of variability between the types of mementos (from digital maps to children's artwork),

and the positioning of the mementos (on display or put away for safe keeping). A similar trend can be seen for digital lifelogging with some information put on the Internet for display, such as blogs and other information, such as emails, stored for private review.

Lifelog collections also have the potential to support story-telling. Byrne and Jones [3] investigated the narrative presentation of lifelog data through card-sorting tasks. Participants who were avid lifeloggers were asked to choose (from their multiple media collections) types of 'artifacts' that represented specific stories from their life. The study showed that participants used photographs (in this case SenseCam images) 50% of the time to support the narration of their experience. When questioned as to why this was the preferred method the participants reported that the SenseCam images captured spontaneous moments in a life-like manner, which would not be typically taken with manual digital cameras. Another study [6] looked at the types of images SenseCam wearer's perceive to be most significant to them. They found that photographs portraying social moments were ranked very highly, *"Time spent with friends and family. It would be something that I would want to look back, months or years later"*.

These studies highlight the importance of shared family reminiscing for people of all ages. Therefore we believe this to be a strong motivation for people, including older adults, to use lifelogging devices such as the SenseCam and to gather and share their own lifelog collections.

Exploring Motivations for Lifelogging

To better understand how shared family reminiscing could motivate lifelogging several factors need to be considered. For example:

- What types of items do people currently collect, e.g. photographs, letters, etc.?

- What methods are people currently using to collect these items, e.g., mobile phone, camera, etc.?

- What types of lifelog items would family members want to share with each other?

- How could a lifelog application be designed to accommodate family members of all ages?

We have begun to answer some of these questions. As a initial step, we carried out a survey with 237 participants to investigate the types of items people currently collect and whether these items are stored digitally [5]. The participants were divided into four different age groups; 18-29 years, 30-49 years, 50-64 years and 65 plus years. We found from this study that photographs, music, bank statements and education certificates were the most commonly collected lifelog items. The most popular items that participants said that they don't collect but would like to were family tree information and stories, medical history, and personal videos. There were significant age differences for how the lifelogs were stored with older adults keeping physical objects while younger adults stored digital formats. Further research methods will be employed to identify the reasons people have for collecting particular items, the methods used to collect them and the nature that they are used (to reminisce, reflect, share etc.).

figure 2. The SenseCam touchscreen browser which was designed to take into consideration the needs and preferences of older users [4].

We have also explored the design considerations of a visual lifelog browser for older adults with limited computer experience [4, see figure 2]. The SenseCam touchscreen browser was developed iteratively with the participation of older users. A real-world user evaluation was carried out with 3 older participants (64-79 years of age) over a period of 2 weeks. The participants were asked to wear a SenseCam everyday during this time and to upload their images to the SenseCam browser at the end of each day. It was found that, given time for training, the older participants became confident uploading and reviewing their images. They expressed particular satisfaction when they reviewed images of family and friends and reported sharing part of their collection with members of their family.

Future Directions
To date this research study has only examined, at an overview level, the lifelogging practices of younger and older adults. Continuing this work, we will employ HCI techniques to investigate shared family reminiscing, how lifelogging could be integrated into this shared activity and whether people are motivated to lifelog if shared family reminiscing is supported. The information gathered from these methods will be used to guide the design of shared family lifelog application. Particular focus will be on the accessible design of this application for older family members. Fisk et al. [8] provide detailed guidelines for designing for older adults. Incorporating these guidelines into the design and development of system for older users should increase its usability and acceptance.

Participating at CHI 2011 Workshop

Technology has considerable potential to support reminiscence as shown through applications such as CIRCA [1] and Pensieve [11]. Lifelogging devices such as the SenseCam can provide a large and rich visual representation of the wearer's experiences. As part of *CHI 2011 Workshop: Bridging Practices, Theories, and Technologies to Support Reminiscence*, we would like to share our experiences working with SenseCam. All of the authors of this paper have worked directly with participants who have worn the SenseCam. Dr. Gurrin, who maintains a strong belief in personally understanding the impact of his research, has gathered a collection of 7 million SenseCam images over the last 4.5 years. The research interests of the authors include applied psychology in HCI (N. Caprani), information retrieval (C. Gurrin), and smart audio-visual sensored environments (N. O'Connor).

There are many aspects of reminiscence that may not have been identified in this paper. This research would benefit significantly from a deeper understanding of reminiscence approaches and theories.

Acknowledgements

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