Chapter 9
Exploring Boundaries to the Benefits of Lifelogging for Identity Maintenance for People with Dementia

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ABSTRACT

In the absence of a medical cure for some forms of memory loss caused by dementia, new technologies specialised in pervasive image recording are being incorporated into practical interventions. Lifelogging is the digital capture of life experiences typically using mobile devices such as SenseCam. This lightweight wearable digital camera passively captures up to 3,000 images a day. Lifelogging results in personal, recent visual prompts, potentially encouraging the sharing of personal memories. The authors' research investigated the incorporation of lifelogging technology into a therapeutic approach to support people with dementia by using the case study method, an exploratory and descriptive approach. SenseCam therapy aimed to stimulate the cognition of a person with dementia, with maintenance of their personal identity as its primary goal. There is limited literature on practical recommendations on how to use lifelogging devices and their effect on people with dementia. The results from the authors' research indicate a number of factors that should be considered when using lifelogging technology with people with dementia. This paper explores the boundaries to the benefits of using lifelogging technology for identity maintenance in dementia. Implications of not working within these boundaries show clear potential for risk of undermining the human rights and potentially the wellbeing of people with dementia.

INTRODUCTION TO LIFELOGGING AND IDENTITY

Lifelogging has become useful for several applications (Hu, Smeaton, & Newman, 2014), including memory recall with improved results in both healthy individuals and people with conditions affecting their memories (Berry et al., 2007; Browne et al., 2011; Jacques, Conway, Lowder, & Cabeza, 2011). The most commonly used and successful device for this type of lifelogging is SenseCam. This is a small camera fitted with simple sensors, worn around the neck by the use of lanyard at chest level and facing forwards. It does not have a viewfinder and automatically captures images every 30 seconds, resulting in thousands of recorded images per day, each taken from a first person viewpoint, i.e. the images never include the wearer but capture the wearer's view of the world in front of them (Microsoft Corporation, 2011).

The potential of SenseCam technology as an aid to memory problems is increasingly being recognized (Browne et al., 2011; Doherty et al., 2012; Loveday & Conway, 2011). These studies range from reporting qualitative description of the type of memory recall associated with reviewing a lifelog collection, to quantitative results from fMRI scans collected during such reviews. The quantitative studies include reports of increased activity in key brain regions associated with memory processes in multiple healthy individuals (Jacques et al., 2011) and singular case studies of people with memory-impairing conditions showing activation of cortical regions known to be associated with episodic memories when reviewing SenseCam images (Berry et al., 2007). The qualitative studies complement this by providing rich descriptions of individuals experiencing "*Proustian moments*" where people reviewing the images re-live the event captured in the images, in the present moment (Loveday & Conway, 2011). During such moments people recall additional detail to what's captured in the image including sound, smell or conversations, which took place during the event (Loveday & Conway, 2011).

These successful reports of improved recall have advanced lifelogging research on to identifying the exact features of the images or varied processes of using lifelogging that enable or trigger individuals to recall their recent memories. The goal behind this is to maximize the potential effects of using lifelogging by helping individuals with progressive conditions like dementia, to recall as much of their recent events during a lifelog review. Given this heightened emphasis on improving memory recall and offsetting memory impairment much less focus is placed on how using lifelogging can affect individuals at a much broader level, namely questioning whether improved recall is a meaningful activity for people with dementia? Some argue that research should focus on offsetting the prospective memory impairments, as they are key to our survival. The prospective memory includes memorizing things in the future including remembering to eat, to attend appointments and to take medicine (Atkinson & Shiffrin, 1968; Zola-Morgan & Squire, 1993). Nevertheless, our retrospective memories are also key to our functioning as they help us to maintain our identities, which are often diminished in dementia. Thus, the research focus should be balanced between improving memory recall *per se* to exploring whether reviewing SenseCam images can provide memory resources necessary for the person with dementia to maintain their identity.

Having a sense of identity is one of our basic human needs and we all construct and maintain it throughout our lives. As Descartes said, 'I think, therefore I am.' Our identity partly develops instinctively to us as we go through our life stages collecting memories and develop a sense of self-continuity (Erikson, 1968; Locke, 1847). However, some form of mindful exercise usually accompanies this where we consciously follow our goals, manipulate certain aspects and shape our life stories within social interactions to reach a desired sense of identity (McAdams, 2004). Unfortunately some conditions including dementia can diminish our sense of identity, which can be very debilitating to both the person

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