



An encounter with personal possessions in everyday life, such as souvenirs, jewellery, or digital photos, may bring the past back to mind. Sometimes this is a brief and fleeting memory, other times it brings back vivid memories and emotional responses. Through three qualitative studies, this PhD research investigated personal possessions as cues: The responses personal possessions evoke (called cued responses), how the item-memories relationship evolves, and what characteristics of possessions facilitate cued remembering. An understanding of this process could facilitate the design of personal possessions or systems for cuing memories, for example in the field of human-computer interaction. The findings in this thesis showed the dynamic nature of the item-memories relationship, and the ways in which cuing can be facilitated or hampered.

Personal Possessions as Cues for *Autobiographical Remembering*

Personal Possessions as Cues for Autobiographical Remembering

Annemarie Zijlema

PhD
2018

TU/e
&
UTS

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Personal Possessions as Cues for Autobiographical Remembering

Doctoral thesis by Annemarie Francien Zijlema

2018

University of Technology Sydney

Faculty of Engineering and Information Technology

&

Eindhoven University of Technology

Department of Industrial Design

**Thesis submitted in fulfilment of the requirements for the joint degree of Doctor of
Philosophy**

Printed by: Gildeprint - The Netherlands
Cover design: evelienjagtman.com ©

A catalogue record is available from the Eindhoven University of Technology Library
ISBN: 978-90-386-4601-5

PhD thesis Eindhoven University of Technology, the Netherlands & University of
Technology Sydney, Australia

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Personal Possessions as Cues for Autobiographical Remembering

PROEFSCHRIFT

ter verkrijging van de graad van doctor aan de Technische Universiteit Eindhoven, op
gezag van de rector magnificus prof.dr.ir. F.P.T. Baaijens, voor een commissie aangewezen
door het College voor Promoties, in het openbaar te verdedigen op dinsdag 16 oktober 2018
om 11:00 uur

door

Annemarie Francien Zijlema
geboren te Hoogezand-Sappemeer

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CERTIFICATE OF ORIGINAL AUTHORSHIP

I, Annemarie Francien Zijlema, declare that this thesis is submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the Faculty of Engineering and Information Technology at the University of Technology Sydney and the Department of Industrial Design at the Eindhoven University of Technology. This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

This thesis is the result of a research candidature conducted jointly with the Eindhoven University of Technology and the University of Technology Sydney as part of a collaborative doctoral degree. This thesis has not been submitted for qualifications at any other academic institution.

Supervision has been shared between two universities. Supervision at the University of Technology Sydney (where most time was spent) involved prof.dr. E.A.W.H. van den Hoven MTD as the principal supervisor, with prof.dr. J.H. Eggen acting as co-supervisor. Supervision and examination at the Eindhoven University of Technology was outlined on the previous page.

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Annemarie F. Zijlema

Sunday 9 September 2018

ACKNOWLEDGEMENTS

I have many good memories of people who supported me during my PhD. I would like to express my gratitude to these people, for their contribution to my work and/or to me personally.

I wish to thank my supervisors, Elise van den Hoven and Berry Eggen for their continuous guidance and support. Thank you for your optimism, inspiration, very useful feedback and guidance, and being passionate about the research we did.

I would also like to thank all other members of the Materialising Memories team. In particular Ine, Mendel, and Doménique (aka MM4) and Daniel H, for making many great memories together. The times you were over in Sydney were filled with energy, with insights, and with collaboration from which our individual projects have benefited. Also many thanks to Panos for his advice on methods and analysis in the first year of my PhD, to other (former) PhD candidates in Sydney (Daniel O., Nataliya, Laura, Ashlyn) for their support and sharing this PhD journey. Gail, many thanks for our collaboration and the opportunity to learn more about dementia.

Thanks to professional editor, Hazel Baker, who provided copyediting and proofreading services according to the IPed guidelines for editing research theses. Any remaining errors are my own. I would also like to thank Iulia for our friendship and for reading and checking many of my papers for language errors. But before something can be proofread it needs to be written, so I would like to thank Gaby for being a writing buddy over the last few years.

I would like to thank Gertjan for many things over the years: for our chats and your encouragement related to the PhD before the start, several meetings during the PhD period and also your contribution to my personal development in general. I would also like to thank Arjan for many useful insights that helped me further in my learning during my PhD.

I would like to thank colleagues at Eindhoven University of Technology (TU/e) and the University of Technology Sydney (UTS) for their staff support or just being around during my PhD and making my PhD time more pleasant. This involves three faculties, as I started my PhD in the faculty of Design, Architecture and Building at UTS. These people include Ann (Hobson), Rosalinde, Karen, Peter (McNeil), Janet, Vincent, Saud, Jan, Xenia, (former) GRS staff, all staff (including PhD students) in the UCE group (TU/e), and staff of the school of Software (UTS).

I would like to thank the members of the Collective Cognition team at Macquarie University for having me in their meetings, in the first few years of my PhD. Participating

in and listening to your discussions has speeded up my understanding of memory research terminology and psychology research in general.

I owe many thanks to the people who participated in my research. Some friends helped me by distributing my call for participants to some of their networks, thanks to Marianna, Nella, Brenda, and Janine. I would also like to thank the six pilot participants who helped me to improve one of my studies.

Thanks to my family for being there for me, and to my parents and several friends (Mathilde, Evan, Jacqueline, and Jessica) for coming over for a visit to Sydney. Thanks to my 'paranimfen' Kari Lund and Kimberly Chopin for your support. I would also like to thank some other friends not mentioned yet: Martine, Bhuva, Marie, Francisca, Maryam, Stephen, Janet, Myrtle, Ineke, Ronald, and Camille.

I thank UTS for providing a UTS President's (UTSP) Scholarship and a UTS International Research Scholarship (IRS) which allowed me to complete my research in Sydney, a place I had never thought I would be living in. It has been a real pleasure to be living in this city and being in this university.

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SUMMARY

Personal Possessions as Cues for Autobiographical Remembering

An encounter with personal possessions in everyday life, such as souvenirs, jewellery, or digital photos, may bring the past back to mind. Sometimes this is a quick and fleeting memory, other times it brings back vivid memories and emotional responses. The research presented in this thesis investigates personal possessions as cues: The cued responses personal possessions evoke, how the item-memories relationship evolves, and what characteristics of items facilitate cued remembering. The phenomenon of the activation of memories is what we call ‘cuing’ and the memories of personal experiences of one’s individual life ‘autobiographical memories’ (Conway & Pleydell-Pearce 2000).

Academia and industry have been developing products aiming to cue personal memories in everyday life. In the last few decades, the interest in design for remembering in the field of human-computer interaction has increased, with many new technologies facilitating remembering and storytelling (Van den Hoven 2014; Van den Hoven, Sas & Whittaker 2012). Especially the ease and growth of capturing media digitally, for example with cameras and mobile phones, inspired the development of new products and research prototypes to facilitate remembering. This motivated us to investigate the process of cued remembering by personal possessions, and how the item-memories relationship comes into existence to enable cued remembering. A better understanding of cued remembering may improve designs for remembering.

Through three qualitative studies, this PhD research aimed to provide insight into the aspects influencing the item-memories relationship and the process of cued remembering, for physical as well as digital items. We found that different uses of personal items could influence their potential to cue memories, and also tensions in the relationship with possessions affected their potential to cue. We found that possessions could cue different types of responses and that these items had particular characteristics. From a longitudinal study, we found several reasons why cued responses by personal possessions changed over time. Based on interviews with repair professionals and object owners, we gained insights into the role of possessions’ traces and ageing on cued remembering. At the end of this thesis, we reflect on and discuss how the gained knowledge can facilitate design for remembering with design considerations for designers.

DEFINITION OF KEY TERMS

The research we present in this thesis is multidisciplinary, and the terminology used can have different meanings in different disciplines. Below we define the key terms as used in this thesis.

MEMORY SYSTEMS

Memory: The term memory is sometimes used as the system of cognitive processes that enable remembering, and other times as ‘a memory’ (as an entity). For the latter, see the definition of ‘memories’. Memory as a system is defined as ‘the means by which we retain and draw on our past experiences to use this information in the present’ (Sternberg & Sternberg 2011, p. 534). This includes memory for how to do things (driving a car), learning facts, remembering faces etc. In this thesis we focus on autobiographical memory.

Autobiographical memory: A memory system that facilitates the construction of autobiographical memories and consists of autobiographical knowledge structures of our lifetime, episodic memory and a working self (Conway & Loveday 2015; Conway & Pleydell-Pearce 2000 and more explanation can be found in Chapter 2 (Section 2.2)).

CONTENT OF REMEMBERING

Memories: Mental representations of past experiences resulting from remembering. When used in this thesis, we mean episodic memories (see episodic memories in this list).

Autobiographical memories: Autobiographical memories are significant long-term memories of events that occurred in a person’s life and relate to themselves (Conway & Pleydell-Pearce 2000). They define who we are and how we think about ourselves, and they affect our future goals and plans (more explanation can be found in Chapter 2 (Section 2.2)).

Episodic memories: Episodic memories are memories of personal events defined by a specific time frame (a moment, or some days) and place, often coming to mind in visual form. Examples are refuelling the car the other day, this morning’s breakfast, your first date with your current partner, or climbing the Eiffel tower. Often episodic memories can be accessed only shortly after they occurred (e.g. a few days), unless they become integrated with autobiographical memory (Conway 2009 and more explanation can be found in Chapter 2 (Section 2.2.2); Conway, Loveday & Cole 2016).

Semantic knowledge: General world knowledge, not defined by a time period and often not personal (Tulving 1972). It is often contrasted with episodic memory.

CUED REMEMBERING

Perception: Perception is to become aware of something (a stimulus in the environment) through the senses, and recognising and comprehending what is sensed (Sternberg & Sternberg 2011).

Remembering: The act of mentally travelling back in time and constructing memories from memory. Remembering can be activated by internal or external cues.

Cuing: Cuing is the process initiated by a cue that activates a mental response, for example, a memory, an emotion, or a thought.

Cued response: A cued response is a mental representation such as a memory, an emotion, or a thought, activated by a cue and is the outcome of the process of cuing (more explanation and examples can be found in Chapters 1 and 4).

Remembering experience: Involves the experience of remembering and may also include the experience of the activity that was involved when a memory was cued, such as interacting with a device that contains memory cues (Van den Hoven 2014).

CONCEPTUAL STAGES IN MEMORY

Encoding: A mental process in which an experience is transformed into constructs that can be stored in memory and retrieved later (Brown & Craik 2000).

Storage: Refers to how encoded information is retained in memory.

Retrieval: A mental process of accessing memories, knowledge, emotions, and other previously encoded information in human memory. In the autobiographical memory system model we have adopted in this thesis (the Self-Memory System), this process of accessing knowledge and memories is activated by internal cues that ‘constantly cause patterns of activation, some of which may stabilize into memories’ (Conway & Loveday 2015, p. 575).

TRIGGERS FOR REMEMBERING AND ITS CONTEXT

Cue: A cue is a stimulus that activates a mental response (e.g. a memory). Cues can be internal (e.g. autobiographical knowledge, a thought, or a memory) and external (e.g. a thing, person, circumstance, or a feature of one of these) (Berntsen 2009). In this thesis we focus on personal possessions and their features as cues.

Object: In this thesis, we sometimes use the term object to refer to a physical personal possession, as opposed to digital possessions such as digital photos.

Personal possession: A personal possession is a digital or physical object. They may be household possessions, digital objects, cherished objects, mementos, souvenirs, and heirlooms. Personal possessions and their perceived features can act as cues. We use this term synonymously with the term ‘personal item’ in this thesis.

Personal item: We use this term interchangeably with the term ‘personal possession’ (see personal possession).

Traces: In this thesis, the word traces refers to material traces on personal possessions, such as scratches, fading colour, or patches. In psychology, the term ‘memory traces’ refers to the encoded information a past experience has left in the mind, which can be retrieved when remembering.

Product attachment: Product attachment is the emotional bond a person experiences with a personal possession. Memories associated with the possession can be a determinant for product attachment, besides other known factors such as utility and appearance (Mugge, Schifferstein & Schoormans 2010) (more explanation can be found in Chapter 2 (Section 2.4)).

Home: By home, we mean the dwelling a person is living in and which contains at least a part of that person’s personal possessions.

Personal environment: The personal environment, as opposed to a public space, is a space that is to some extent under the person’s direct control and may contain personal possessions. For example a person’s home, their car, or their desk space at work.

BIOGRAPHY



Annemarie Zijlema was born on 17 January 1983 in Hoogezand-Sappemeer, the Netherlands. In 2004 she completed her bachelor in Information Services and Management at the Hanzehogeschool Groningen, the Netherlands. As part of her bachelor program, she spent a semester at the faculty of Information Studies at the University of Sheffield, United Kingdom. Annemarie obtained a two-year international master degree from the Royal School of Library and Information Science in Copenhagen, Denmark (now University of Copenhagen). She graduated with a thesis on the topic of users' search behaviour from a cognitive perspective. After completing her studies, she worked five years in the field of communication and information, first as a trainee at the European Commission, and later at the ministry of the Interior and Kingdom Relations in the Netherlands. Next to her job, she studied psychology at the Open University, which she ended to start her PhD. In 2013 she began her degree in Australia in the joint PhD program of Materialising Memories at the University of Technology Sydney (UTS), Australia (until April 2016 at the school of Design and from April 2016 onward at the school of Software) and Eindhoven University of Technology (TU/e), the Netherlands (faculty of Industrial Design). Also, she was involved in education at UTS as tutor, supervisor, and curriculum developer during her PhD. This thesis is the result of her PhD research on the topic of personal possessions as cues for autobiographical remembering.