

# Memory Cues, Recall Strategies, and Alzheimer's Disease

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## Abstract

This paper reports on partial findings from research exploring (1) how individuals with mild Alzheimer's disease (AD) use memory cues in the form of representations (tokens) to recall life stories, and (2) ways in which representations (tokens) influence the nature and content of the recall narrative. Further, it examines whether memory recall differs in response to personal, participant-chosen memory cues, as compared to those selected by someone other than the participant. Reliance on personal artifacts used during two of three unstructured interview sessions resulted in recollections that seemed more scripted in delivery and circumscribed in detail. Researcher-selected tokens, used exclusively during session 3, yielded more fully formed recollections, and additional stories. Early findings suggest that generic associations may be at least equal to, if not more effective than, unique, individuated artifacts to engendering creative self-expression and vivid personal recall for those experiencing the initial memory loss of AD.

*Keywords:* memory cues, surrogates, recall strategies, sense-making, Alzheimer's Disease

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## Introduction and Background on Study

Alzheimer's disease, the most common form of dementia, is a progressive, degenerative disease of the brain. Dementia consists of symptoms that may include loss of memory, judgment, and reasoning, and changes in mood, behaviour, and communication abilities (Alzheimer Society of Canada 2007). Intelligence, educational level, occupation attainment, and (cognitive) leisure activities have been associated with reduced risk of dementia and cognitive decline (Bain 2006). Within this context, information could be seen as an important resource to preserving cognitive reserve, defined as, "increased numbers of synapses, or from an increased ability of the brain to cope with physiological insults" (Bain 2006, 247). Yet information science research focused on aspects of Alzheimer's disease (AD) is decidedly scarce.

## Theoretical Framing

To address this gap, a study engaging individuals with early-stage AD was undertaken to explore concepts of representation and memory within the framework of information sense-making (Dervin & Nilan 1986; Dervin & Naumer 2009; Savolainen 2003; 2007) and recall strategies. The study's qualitative methodology does not clinically measure a participant's memory function, but rather explores how memory recall may be influenced by representations acting as surrogates for some aspect (people, place, thing, event, etc.) identified in a participant's personal narrative.

Psychological models of autobiographical memory (Conway & Loveday 2010), self-narrative (Baumeister & Newman 1994), and narrative structure (Bruner 2004) offer lenses for interpreting study participant narratives. The literature of material culture (Chaudhury 2002; Csikszentmihalyi &

Rochberg-Halton 1981) provides context to “objects” – the personal artifacts and researcher-chosen memory cues or representative tokens. From performance studies, embodied performative aspects of memory and narrative (Basting 2003a; 2003b) shed important light on interpretations of the individual self.

## Study Methods

The research is exploring (1) how individuals with early-stage AD use memory cues in the form of representations (tokens) to recall memories of life stories, and (2) ways in which representations (tokens) influence the nature and content of the individual’s recall narrative. The study involves three sessions of unstructured interviews held across a number of weeks. The first elicits a personal narrative, while, during the second, the participant is invited to speak to 5-7 tokens (plus one wildcard) related to the narrative as selected by the researchers. During the third session, the participant is again asked to talk about the tokens from session two as well as to consider 2-3 new tokens chosen by the researchers to represent aspects of the personal narratives from the first and second sessions.

## Pilot Study (2011)

In an ASIS&T Interactive Showcase Poster session (Howarth & Hendry 2011), the researchers reported on outcomes from an initial pilot study. Interpretations of the data encouraged our thinking that memory cues or surrogate tokens were useful adjuncts for stimulating recall in most cases, and, in some, eliciting even richer narratives or stories. The interview sessions also offered a kind of “neutral space” in which to engage in a safe, nonjudgmental, and social retelling of personal memories. The pilot study was useful to honing the participant-object narrative approach instrumental to the methodology applied to the larger project.

## Current Study (2012)

This paper reports on the specific case of one participant engaged in a subsequent phase of the multi-year study. Unlike other participants, who interacted exclusively with researcher-selected tokens – consistent with the participant-object narrative approach – this one individual insisted on attending both the first and second sessions with a set of documents that were then used as prompts in a kind of scripted life narrative. The initial narrative followed a sequence determined by the order of the documents. Nonetheless the session yielded a series of “vignettes” sufficiently rich for the researchers to determine surrogates as representative tokens or memory cues for points within the narrative. For example, the participant told stories during the first session of repairing computers, meeting Queen Elizabeth II, and exploring training as a pharmacist. Figure 1 illustrates three surrogates chosen by the researchers that might serve as memory cues or representative tokens associated with the narratives. These included a microcomputer processor, a pill vial, and a matchbox with a picture of the Queen and Prince Philip.

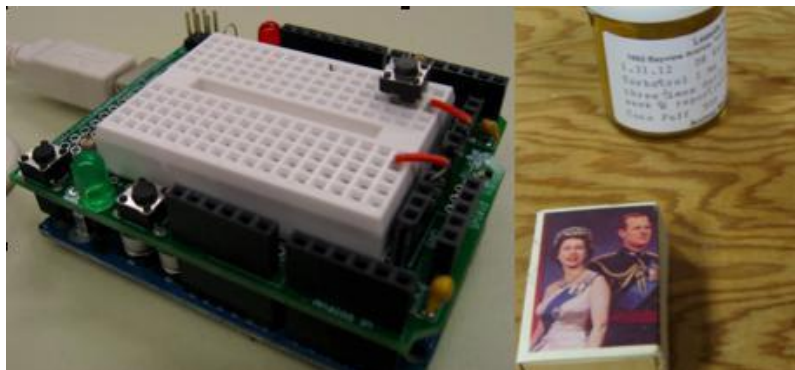


Figure 1  
*Three Sample Tokens: microcomputer processor, matchbox with image of the Queen and Prince Philip, and pill vial.*

The invocation of the participant's personal artifacts as memory cues during the first two sessions, and the invitation to engage with representative tokens chosen by the researchers for use in sessions 2 and 3, prompted exploration of a question additional to those of the overall study. In what ways does memory recall differ in response to personal, participant-chosen memory cues, as compared with those selected by someone other than the participant?

## Findings

As with the pilot study (Howarth & Hendry 2011), the research found that, in most cases, the presence of tokens led to either "high resonance" associations expressed by the participant, or "new" resonance such as elaboration or additional associations or stories. As expected, the wildcard token did not evoke any resonance, and was, in fact, summarily dismissed by the participant. Two other tokens – a pill vial, and microcomputer processor – were consistent in evoking minimal resonance. In contrast to story "fragments" or "scripts" expressed in sessions 1 and 2, marked increases were seen in the participant's integration of new details into more "complete" stories in session 3, including such elements as back-story and present context.

As noted previously, the participant was eager to have his own artifacts (employment reference letters, newspaper clippings, and family photographs) on hand during the first two sessions, and at one point retrieved two additional artifacts in response to the conversation. In contrast, only those tokens selected by the researchers were engaged with during the third session. During session 2 the participant would respond to researcher-chosen tokens with brief narrative fragments, often turning to his own personal artifacts to illustrate the story and using a more scripted structure, or even to change the subject entirely. During session 3, and in response to researcher-selected tokens, only, full recollections and additional stories appeared to be more fully formed and detailed.

## Discussion and Implications

While the participant could simply have felt more comfortable with the researchers during a third visit, and while this subset of a larger study deals only with one individual, there are suggestions of possible differences between participant-chosen, and researcher-selected memory cues. Reliance on personal artifacts resulted in recollections that seemed more scripted in delivery and circumscribed in detail. As with various reminiscence tools and activities, including personal memory boxes (Hagens, Beaman & Bouchard Ryan 2003), technically mediated forms such as "multi-media biographies" created and viewed with family members (Damianakis et al. 2009), and the use of automated video capture for future reminiscing (Crete-Nishihata et al. 2012), the interjection of individuated and uniquely personal artifacts, objects, events may evoke more "accurate" though somewhat "fixed" recall. The stories the participant retold or added in response to researcher selected representative tokens in session 3, would seem to underscore reminiscence tools and activities that engender creative abilities and self-expression, including TimeSlips™ (Basting 2003a; Basting 2003b), viewing art (Rhoades 2009; The Museum of Modern Art n.d.), and "generic" memory boxes (Reading Borough Council 2012). On the other hand, there was no way to authenticate some of the more vivid narrative from session 3, given that the participant had no access to his personal documentation. Thus, while stories were richer in their detail, there was no way of determining their relationship to "real" life stories from the participant.

This expression of doubt may say more about the researchers' reliance on the "objectivity" of evidence provided within the participant's physical documents than it does about the veracity of the individual's narratives. In contrast to the earlier pilot study (Howarth & Hendry 2011) in which the researchers had no means of verifying any aspects of personal stories, this particular case provided opportunity — for better or worse — for assessing and calibrating "fact" or relative "truthfulness." This begs the question of a kind of hierarchy of evidence based on perception. Expressed otherwise, when does the "truth" of documentation take precedence over the authenticity of narrative?

An awareness of this evidential hierarchy should make the researchers more sensitive to judging prematurely the integrity and authenticity of personal narrative. When memory and recall are themselves called into question by a clinical label, such as Alzheimer's disease, denying the credibility of an individual's personal reality as expressed in his or her self narrative, seems at least presumptuous, if not

unsound from a methodological perspective. Ultimately, for those with early-stage AD, their caregivers, and clinicians, questioning veracity of memory recall may be less important than the activity of engaging in personal storytelling that is highly social, inclusive, and reinforcing of both “the self” and individual cognitive reserve.

## Conclusion

The broader study, still in progress, is considering ways in which cultural heritage institutions (libraries, archives, museums, galleries etc.) may play a role in fostering and facilitating personal reminiscence. In the same way that the Museum of Modern Art engages individuals with AD in group discussions about artwork (The Museum of Modern Art n.d.), and the Reading Museum creates “memory boxes” of cultural artifacts available for loan (Reading Borough Council 2012), are there opportunities for assembling customized “information memory boxes” containing objects that may evoke and reinforce ones life stories? Might the participant-object narrative approach prove useful in preparing kits that are identity-affirming for those experiencing some loss of self through progressive cognitive decline?

The specific case addressed in this paper, raised a question as to how memory recall differs in response to personal, participant-chosen memory cues, as compared with those selected by someone other than the participant. Findings suggested that generic associations may be at least equal to, if not more effective than, unique individuated artifacts in evoking memory recall. Cultural institutions may be reassured that the resources and objects from their collections may be as useful and important as personal artifacts, to engendering creative self-expression and vivid recall in those experiencing the memory loss of early-stage AD.

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