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# Using Online Calendaring Systems to Support Reminiscence

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**Abstract**

Our research with users of an online calendaring system (OCS), Google calendar, indicates potential for OCSs to support personal and shared reminiscence. Participants use their calendars to maintain an accurate record of personal events to which they refer for personal reminiscence. Participants also use information in the calendars of others with whom they share calendars for awareness and to prompt shared reminiscence with one another. Future research in technology-supported reminiscence should consider OCSs as relevant technologies and calendar entries as useful prompts.

**Keywords**

Online calendaring system, reminiscence, memory

**ACM Classification Keywords**

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

**Introduction**

Reminiscence is “the process of recalling personally experienced events from one’s past” [18]. A growing interest in using technology to support reminiscing in human-computer interaction (HCI) has led to research focused on tools utilizing photographs [1, 17], physical

location [10], physical artifacts [14], and combinations of digital media [9] in reminiscing. Though dates and other temporal aspects have been important components of these tools, online calendaring systems (OCSs) have not been explicitly studied for their potential to support reminiscing.

#### *Temporal Landmarks and Autobiographical Memory*

OCSs are particularly relevant to HCI studies of technology-supported reminiscing because of the record of temporal and autobiographical information they necessarily generate. Temporal landmarks are reference points in a person's memory that aid in memory retrieval [13]. Shum outlines three kinds of temporal landmarks: vivid public events or flashbulb memories, such as the first landing on the moon; vivid personal events, such as first experiences, like a first kiss; and calendar and lifetime period events, such as the beginning of college and graduation [13]. OCSs record the third type of landmark when users schedule events, and research shows calendar users retroactively add events to keep record of them [8], indicating OCSs may also house the first two types of landmarks as well.

Shum suggests temporal landmarks play a role in the structure of autobiographical memory. Why does autobiographical memory matter? The self-reference effect describes how "material encoded with reference to the self is better remembered" [12]. OCSs, containing personally relevant temporal landmarks that affect autobiographical memory, support reminiscence by supporting memory.

#### *Social Reminiscence*

Reminiscence can also be social, prompted by or shared with friends or family [18]. Autobiographical memory is also important socially, serving largely as fodder for conversation, facilitating social interaction [3]. Sharing personal memories can help new social relationships form [3], and deepen existing relationships if the memories are shared [3].

#### *Online Calendar Systems*

Early studies of OCSs focused on the use of groupware calendar systems in professional environments [for example, 8, 4, 6, 7]. Research on personal calendar use has studied calendars in homes, focusing on families [2, 11] and in academic and other professional settings [15, 16].

The analysis of reminiscence activity presented here is based on data collected for an ongoing study investigating how people negotiate their personal relationships through their use of an OCS. The data indicate some participants use their calendar to support reminiscence, referring back to or retroactively adding events or referencing events in others' calendars.

#### **Participants and Data Collection**

As part of a qualitative research study, we interviewed 30 users of Google calendar, one of the first freely-available, widely-adopted OCSs intended for a broader audience than traditional business organizations. Each participant shared at least one calendar with one other person and accessed at least one other person's calendar. Our study focused on significant-other, friend, and other interpersonal relationships. Interviews were based on a semi-structured interview protocol and lasted between 18 and 75 minutes.

## Findings

Participants use their own calendars for personal reminiscence. They also use the calendars of others for shared reminiscence. This section first describes calendaring practices that participants use to support personal reminiscence, then describes calendaring practices that support shared (or social) reminiscence. The section ends with an overview of the types of relationships that characterize online calendar sharing.

## Using OCSs to Support Reminiscence

People use OCSs to record personal information and to view personal information of others. Findings reveal two patterns of calendar use for reminiscence, one personal and one shared:

- Some participants use their OCS to maintain an accurate record of personal events (like a diary), providing temporal landmarks that have the potential to evoke personal reminiscence.
- Some participants, as well as others with whom they share calendars or whose calendars they access, use information in the calendar to prompt shared reminiscence with one another.

### *Personal Reminiscence: Keeping a Record for Future Reference*

Some participants indicated they retroactively revise their calendars to represent events accurately: they delete events they didn't attend, they add events they did attend, they lengthen events that lasted longer, etc. Participants make these changes because they refer back to, potentially reminiscing upon, their past experiences. One participant, for example, describes the different types of retroactive revisions he makes,

explaining that he uses his calendar as a personal reference:

*I put something in for an hour but it was a three-hour event so I'll make it longer. Or I'll go back and delete things that I didn't end up doing, well, unless I felt like I wanted to keep it there for reference that maybe, yeah, I don't know. So I guess most of the time I delete anything that didn't happen and so I just leave a record of what I did do.*

Another participant echoes the sentiment, indicating that her calendar represents her life and that she may refer back to the record her calendar keeps:

*I think this reads to me like a pretty accurate transcription of the things that are happening in my life. I'm the kind of person that is always just in case, everything has to be researchable, and I guess this is part of my training as an academic, I don't really know. But if, for some strange reason, I really needed to know what time that dinner had occurred three months from now, then I would know it happened at seven, not five. ... It has a feeling of semi-permanence because it's there, it's accessible. It's also...you can update it to be accurate.*

These examples show how OCSs can be and are used to support personal reminiscence, by generating searchable, editable records of personal and shared life experiences. OCSs are also used to support shared reminiscence in relationships.

*Shared Reminiscence: Viewing Others' Information to Prompt Reminiscence*

Some participants indicate that they view the calendars of others for the purpose of asking about or referencing events on the calendar in future conversations. Participants also indicate that others with whom they share their own calendar also reference events on their calendar during conversation, indicating that OCSs are used to support shared reminiscence. One participant describes how she references events she sees on her friend's calendar when they are able to spend time together in person:

*So it's nice to see like, "Oh you've been working on your house,"... That gives me something to talk about the next time we hang out too, so that's cool.*

Another participant asks his long-distance girlfriend about activities he sees on her calendar, prompting her to reminisce:

*And with my girlfriend I'd ask like, "Oh, what was this that you were doing?" Or, "Did you have fun at dinner at that place?"*

Some participants are prompted similarly by friends or significant others with whom they share their calendars. For example:

*And so, every evening or whatever, he might be like, "Oh, how was your, this meeting or that meeting?"*

One participant compared the information on her and her friends' calendar to information provided on a social network site:

*And we'll also often check in on the other person, like, "Oh, how did that thing go?" or whatever that we saw on each other's calendar. And it's almost like and I don't do Facebook, but I imagine that's what people do with Facebook, is like kind of an awareness thing.*

As this last example explains, the awareness OCSs afford—and that people provide to one another when they share calendars—is a necessary component of a technology to support shared or social reminiscence. By providing this awareness, OCSs can be and are used to support shared reminiscence in relationships.

*Calendar Sharing Relationships*

If OCSs support shared or social reminiscing, what types of relationships characterize those who are reminiscing together? Data reveal four general types of relationships: significant other relationships, familial relationships, friendships, and work relationships (e.g., advisor or co-worker). Most instances of shared reminiscing occur in familial relationships or friendships, particularly when parties in the relationship are geographically distant, when they once were very close.

**Conclusions and Future Opportunities**

OCSs clearly have the potential to support autobiographical memory and reminiscence. Users of OCSs create autobiographical, diary-like archives to be used as personal references, much like with traditional paper calendars [11]. OCSs, however, are more easily edited, longer lasting, and accessible from almost anywhere. Furthermore, OCSs provide a social component and awareness of others' activities, supporting social reminiscence. While OCS are designed

as coordination and scheduling tools, they can also play a role in supporting memory and reminiscence. With greater technical support, OCSs can help more people reminisce more, in more ways.

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Katie Derthick is a PhD student in the Human Centered Design & Engineering program at the University of Washington. She is interested in user experience, computer-mediated relationships, and technology-supported reflection, and uses her (private) 11-year-old Amazon wishlist to reminisce upon changes in her taste.

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