

Wishing Well Demonstration

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ABSTRACT

The technology concept described in this paper addresses needs that emerged from ethnographic research on the health needs of tomorrow's elders, specifically the need to envision and plan for the later phase of life. The difficulties of old age are often experienced as sudden shifts which are managed in a reactive, crisis-driven style. The gap between this need for future planning and existing tools motivated the concept of "lifespan mapping" – engaging interfaces to invite reflection about desirable ways to live out the later phases of life. The "wishing well" concept described in this paper is one component of a larger life-span mapping concept that encourages ideation about the future. Users select an image that they find appealing by moving a stone onto that image. Through a sequence of selections, the user develops a collection of images that represent the mood or spirit of particular desires and aspirations.

Keywords

Tangible Interface, Ubiquitous Computing, Calendar, Elderly, Lifespan, Prospective Cognition

INTRODUCTION

As has been well publicized, the increasing lifespan is sparking a huge demographic shift in U.S. and many other countries, principally in Europe and Asia [1][2]. The needs of the growing elderly population far exceed current medical and social resources. Health issues, from wellness to chronic disease management to support for cognitive decline, will need to be addressed through a variety of innovative approaches that supplement medical offerings. Ubiquitous computing technologies for the home are one such approach that may be particularly well suited to the needs of tomorrow's elders [3][4].

To inform the development of home health computing systems for tomorrow's elders, Intel has conducted extensive ethnographic studies on the lifestyles and concerns of boomers and elders. The initial focus of the study has been cognitive impairment, a health issue that is estimated to be the strongest threat to independent living [5]. From analysis of focus groups, household interviews and shadows, a set of key themes emerged as needs and corresponding opportunities for ubiquitous computing (see Figure 1).

This paper will address one of these themes: the need for temporal orientation, specifically orientation to the distant future, and the corresponding opportunity area of "lifespan mapping". By lifespan mapping we mean tools that will allow people to reflect on time in very personal and expansive terms – from recollecting the past, to focusing on the present and near future, to envisioning the distant future. We are exploring a host of interfaces that will make all of these activities more engaging, textured, and less daunting than current planning tools.

The Wishing Well, the concept explored in this paper, is a probe to invite envisioning and reflection of the future. Probes are research tools – malleable, low fidelity prototypes – designed to elicit feedback from users [6]. Our intent is to bring probes into the homes of users, and to base our iterations on the way users shape them to meet their needs and desires.

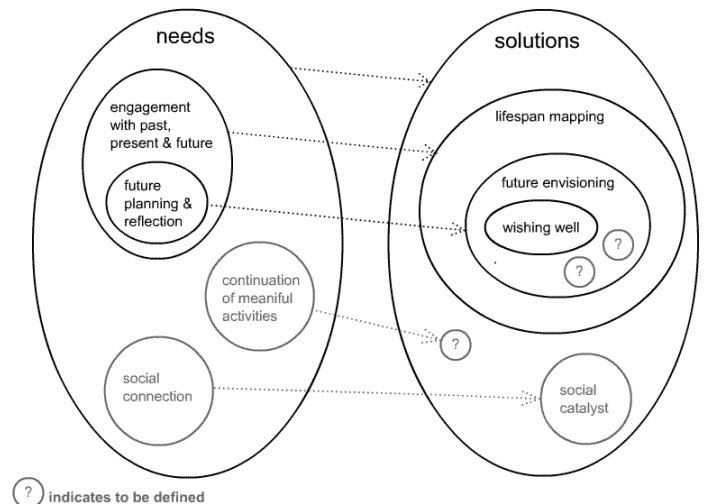


Figure 1. Link between needs and solutions

RESEARCH FINDINGS

Orientation to current time is well recognized as a sign of cognitive lucidity. This immediate temporal orientation is assessed in mental status exams and is relatively well supported through calendaring tools. However, our research indicated the importance of broadening the consideration of temporal orientation to include not only the present, but also the distant past and distant future – realms not addressed in most calendaring tools.



Figure 2. Calendars help orient people to the present and they are often saved to ease recollection of the past. But they are not so helpful with envisioning and goal setting for the distant future.

Orienting to the present can be more challenging in old age. Retirement can often involve a disconnection from the rhythms, rituals and communities associated with workdays and weekends. Cognitive impairment certainly adds to this challenge. Equally if not more consequential though are the struggles of orienting to the distant future. We found that many people avoid thinking about old age until forced to do so usually as a result of a health crises occurring to themselves or a family member. In some of these cases, more anticipatory, proactive decision making may well have pre-empted a number of crises and consequently prolonged periods of independence. In other less dire situations, envisioning the future may have influenced households' choices about where to live, and what social relationships to develop which could support an improved quality of life.

The following are some examples from ethnographic fieldwork that illustrate the tendency to avoid thinking about the future:

- Joe and Lucinda cared for Lucinda's mother when she developed dementia, moving her mother to a new facility every three months. Each move was precipitated by a crisis: a fall, an incident of aggression, wandering. Lucinda's mother was miserably unhappy in everyplace but the last one.

They now wish they had known her mother's probable trajectory: they believe this knowledge would have allowed them to avoid some of the crises by moving to a place that offered graduated levels of assistance.

- Paul and Jenna, who love their urban third floor flat, expressed determination to live there forever although arthritis in Jenna's knee already makes the stairs a challenge. When asked about their plans for the future her response was "I suppose we'll cross that bridge when we get to it."
- Sue, a former teacher and successful real estate broker, now suffers from severe vision deterioration that prevents her from driving and a host of other activities. She recently moved to an upscale assisted care environment that she finds stifling. Even though she hasn't driven for ten years, she keeps her car as a symbol for the freedom that she misses.
- "I didn't want to believe this was happening to her," said a young woman about her grandmother who has Alzheimer's. In retrospect, she sees that she and her parents overlooked signs of deterioration for years. She feels that they may have had an opportunity where medication could have had a greater effect in slowing the course of the disease.

So why don't people think about old age?

There are a variety of obstacles to envisioning the future that emerged from our ethnographic research. First is the very daunting prospect of losing health, freedom, and independence. Imagining these changes for oneself or a loved one is so painful that many simply avoid thinking about them. Another is optimism and the accompanying denial about the prospect of negative future events. This is a delicate issue since an optimistic explanatory style has been associated with better mental and physical health [7][8]. So to some degree, denial about the prospect of illness may actually help ward it off. Denying evidence of existing illness, however, is certainly problematic. Almost every household in our study reported overlooking early signs of dementia and subsequent regret about missing opportunities for treatment, education, and lifestyle planning. A third obstacle is the uncertainty about the future: in particular the resources one will have and the health issues one will have to contend with in old age. Even without these uncertainties planning and goal setting can be intimidating. Some people worry about not living up to their goals. They would prefer to have low or no expectations than to disappoint themselves or others. Most however, lack the preliminary ideas and vision to start concrete planning. They sometimes only have an inkling of what they want. They lack tools to explore these preliminary desires and wishes in a way that is speculative and even playful. Existing planning tools are

too overly specified to be helpful for loose ideation about the future.

The needs and obstacles that we observed suggest a host of requirements for future envisioning tools that are not presently part of current calendaring and planning tools. Specifically, the tools should allow people to:

- Carve out periods of time that are personally salient, while remaining oriented to universally accepted metrics of time
- Ponder difficult decisions about old age in a non-stressful way
- Conjecture, “feel out”, play with or imagine possibilities
- Examine values and let those guide life decisions
- Work through obstacles that may impede wishes or goals
- Plan the way one wants to live, not just milestones
- Evaluate the kind of community and relationships that are important for one’s late phase of life and how to achieve the desired quality of social connectedness
- Plant wishes and goals without worrying about whether or not they are achievable
- Reflect and build on previously set goals and wishes

Next is a description of a research probe that is designed to invite ideation about the future. As mentioned above, this is one component of a set of future envisioning tools to help with what we are calling “life compassing.”

CONCEPT: WISHING WELL

A wishing well scenario:

Bob is nearing retirement and has not yet begun to plan or prepare for this life change. He cannot imagine how or where he will live in the future. He is not even sure how to begin imagining his new life. Recently he bought a “Wishing Well” toolkit. It seems more like a board game than retirement planning tool and looks like a fun way to consider the future. The pieces of the toolkit lie in front of him on his desk. He starts to play around with a stone that forms part of the toolkit. Using the stone, Bob starts to select some images that are displayed on a tabletop display panel. Bob’s wife joins him to look at the pictures of new houses, leisure activities and hobbies Bob has

selected. Discussing his selections they add new images to include Sue’s interests and remove some from the stone. Sue removes photographs of houses with stairs. Her arthritic knee is giving her trouble. Several months later Bob takes his stone to a realtor. The images stored on the stone help the realtor select areas and houses that Bob and Sue would be interested in moving into. The images also form a journal of past thoughts and imaginings of Bob and Sue and aid them in making decisions and planning out how they might enjoy their retirement.

The inspiration for a tool to aid future ideation comes from the experiences of making wishes, such as blowing out candles on a birthday cake or throwing a coin into a wishing well. These experiences are generative, imaginative, playful and hopeful regarding the future. Wishes are fun to make, can be ambiguous, romantic and emotionally driven. This whimsical spirit of wishing is in contrast to many existing computerized tools. For example, a travel website requires specific airports and precise travel dates and times although the user may have only a vague idea of when and where travel would be desirable. The Wishing Well interface would invite self-reflection and projection of ambiguous future plans. For example, “I want to feel like I’ve been far away” or “I want to travel to Europe” rather than demanding specifics. The intention is to use ambiguity as a resource for design enabling intriguing and delightful user experiences [9].

The Wishing Well helps users reflect on their futures by presenting sets of images that represent a sense of mood, spirit, or atmosphere of a future ideation. These images work like swatches of fabric, samples of wallpaper or the mood boards used in design studios. They express and communicate direction, feel, and style of wish rather than specifics of a plan. Since these attributes are sometimes harder to articulate and less accessible to people, this tool facilitates communication with family members or someone supplying a service such as a counselor or a realtor. The images serve as a record of dreams, desires, and wishes that users can reflect back upon as well as inspiration or kick off points for more ideation about the future.

The hardware consists of a number of stones and a flat horizontal touch screen onto which the main interface is displayed. The main digital interface is an image browser that allows the user to navigate through a series of images related to a future ideation. For instance if the user is planning a new home then images related to homes, architecture, community and neighborhood will be displayed. The stones are used to hold moods, which are defined by a collection of images. Images become

associated with a stone by placing the stone over an image. The image is then “absorbed” into the stone.

The Wishing Well is operated by one user at a time, however, by orientating the screen to a horizontal position the interface becomes like a table or board game around which many people can sit, take turns, observe and share ideas. Through our probe research, we will learn how important this social element is to this concept. The reference to board games is reinforced by the use of stone “pieces” to collect images.

Tangibility is an important aspect of the Wishing Well. The stones’ physical characteristics of texture, colour, shape, and weight may emotionally engage the users and help them overcome some of fears and inhibitions about envisioning the future.

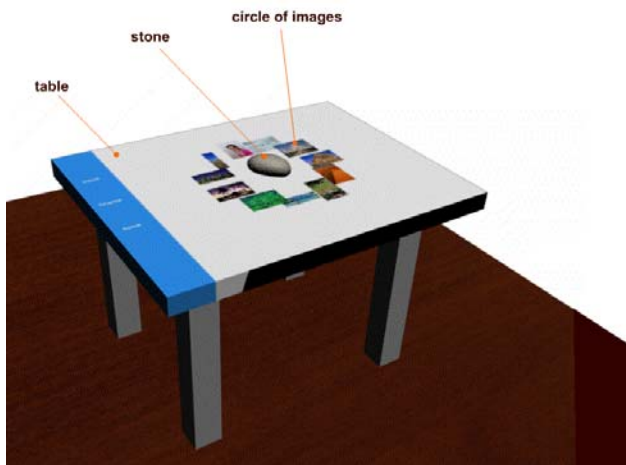


Figure 3. Table and user interface components

Next/Future Steps

The “Wishing Well” is intentionally unfinished as a concept. We are planning to iteratively shape the interface through cycles of user review and development. Our probe research will address an array of questions including ones such as:

- Are photographs a suitable means of capturing the mood and spirit underlying wishes for the future?
- Do people prefer to wish alone or with others?
- Is it more helpful to use ambiguous or literal stimuli to help with preliminary planning?
- Do people want to record their wishes?

Eventually, the Wishing Well and other Lifespan Mapping interfaces will become integrated with the array of proactive health technologies that we are currently prototyping. Our goal is to test these technologies as a home system through clinical trials in 2004.

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