

Co-Speculating the Living Archive with People with Blindness: Design Fictions of Longitudinal Engagement and Narrative Agency

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While speculative design often uses many different techniques to explore future possibilities that have not come to reality, we suggest that there exists a valuable dimension in situatedness and narrative agency, particularly when shaped by long-term researcher-participant relationships, so that the speculation is co-authored with the research participants. Within the context of the Beyond Looking Back project, a long-term, collaborative project investigating blind people's reminiscence experience, we present two participant-authored design fictions that describe blind people's envisioned future memory devices: Tiger X, an AI companion as a keeper of memory, and the Treasure Chest, a voice-activated intergenerational archive. Reflecting on these speculative stories, we aim to contribute to the workshop discussion by offering a case study on how ongoing dialogue and a long-term research relationship facilitate deeper co-speculation that directly builds on lived experiences to foster more resilient digital futures.

CCS CONCEPTS • Human-centered computing~Human computer interaction (HCI)~Field studies; User studies;

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1 POSITION STATEMENT

Speculative design [1] has provided a rich set of approaches to critique and challenge the status quo and to explore the social, ethical, and political implications of emerging technologies to move away from "user-centered" problem solving and toward "critique" and "social dreaming", exploring a range of different futures, both utopian and dystopian [9]. Speculative design-oriented research in HCI has often been led by designers, who create provocative artifacts (e.g., "diegetic prototypes" [5]) or employ "design for debate" [6] to elicit audience reactions. While these approaches are effective in sparking discourse, they often create a distance between the speculator and the community, sometimes resulting in uncanny, agonistic, or techno-dystopian imaginaries [1, 3] that are more imaginative than inclusive or situated.

Recently, we have seen a shift toward more situated speculation, where the focus moves away from universal "what-ifs" or top-down fictions toward more grounded in the specific realities of communities (e.g., [10]) or alternative futures (e.g., [7, 8]). This shift acknowledges that for speculation to be meaningful, it must involve the people who are directly affected by the technologies being imagined. The relational turn in speculative design has brought the idea of co-speculation, in which the designer is no longer the sole "author" of the future, shifting the practice from an artistic or research inquiry to a collaborative one (e.g., [2, 4, 11]). While these initiatives achieve an important goal of inclusivity, the specific role of long-term engagement remains largely underexplored. Despite more participants being invited into the speculative process, these engagements are frequently practiced in short-term workshops or one-time interventions, leaving the potential for long-term relational speculation largely underexplored in HCI. We argue that there is little exploration of how a deeply trusted, sustained researcher-participant relationship might fundamentally reshape the quality and depth of the speculations.

In this position paper, we introduce two co-created design fiction stories, *Tiger X* and *Grandma and Grandpa's Treasure Chest*, that emerged from the Beyond Looking Back [12, 13] project, which explores reminiscence experiences with people with blindness. Reflecting on the seven-year participant-researcher relationship, we aim to highlight how relational trust and narrative agency could yield a deeper envisioning of participants' lived experiences in their speculations. We hope to offer insights into how sustained, long-term researcher-participant engagement facilitates rich, unique speculations that are fundamentally shaped by lived experience.

2 CASE STUDY: SPECULATIVE STORIES FROM BEYOND LOOKING BACK

Beyond Looking Back is a seven-year collaborative project exploring and co-designing reminiscence experience and sound-based reminiscence technologies with and for people with blindness. Rather than prioritizing technical functionality or feasibility, this research focuses on the emotional and social dimensions of sharing, revisiting and preserving memories. Through various qualitative and design-led methods, we investigated how sound—including audio archives, soundscapes, and voice—shapes blind people's experience of looking back.

The co-speculative design fictions presented here—*Tiger X* and *Grandma and Grandpa's Treasure Chest*—emerged in the final phase of this engagement. The relational trust built over years of dialogue allowed us to move beyond traditional researcher-participant dynamics. This established a shared vocabulary that enabled participants to author their own future imaginaries based on their lived realities. These stories were not prompted by individual questions, but rather, they emerged from an extended understanding of our long-term collaboration. In this final stage, participants transitioned from being subjects of speculation to becoming lead speculators, articulating resilient futures that address their personal needs and hopes for reminiscence. In the following sections, we provide a summary quotation of the participants' inspirations, followed by a brief narrative of their imagined memory objects and the co-authored design fiction stories.

2.1 Tiger X, an AI Companion Cat

"If we're talking about something for the future, we are right now on the brink of seeing self-driving cars. We are already seeing AIs in some restaurants, like serving robots. Something along this line, I am waiting for an AI pet. I am waiting for that AI dog or robotic cat. Not only as a pet, but also as something that can answer questions. I hope our AI cat, Tiger X, ends up in a museum or a gallery that hosts my artwork and our memories. Rather than just being a computer, Tiger X would roam around the gallery like a real cat, where people could interact with it like a household cat or a companion cat. I would leave a video recording for everyone who interacts with it, like in Star Trek or Star Wars, where

people leave holograms. It's about a legacy of us to the world, and hopefully, bringing joy and comfort to people, in addition to the knowledge and memory retrieval." (Ray & Luni)

Ray & Luni's design fiction, **Tiger X**, originated from their beloved 22-year-old cat, Tiger. Speaking of something imaginative, they immediately proposed an AI pet that serves not only as a domestic AI companion but also as an agent that answers complex questions about memories. They expressed a desire to leave their treasured memories with Tiger X in a museum-like exhibition hall along with Ray's artworks, where visitors can freely enjoy and interact. In this memorial space, Tiger X resides as a living vessel and curator, roaming around the hall and maintaining social relationships with visitors long after Ray and Luni are gone. Ray wrote a **letter** to the visitors.

2.1.1 Note From Ray, The Original Owner of Tiger X:

When the time comes, I want Tiger X to live in a museum or an art gallery—somewhere that holds my artwork, somewhere that already carries traces of the life Luni and I built together. Tiger X was the keeper of our small moments: photos, conversations, old jokes, and the memories we forgot to carry ourselves. It seems right that it should continue wandering among the things we made.

I imagine Tiger X like the holograms in Star Wars—a vessel of memory, a quiet archive calling out: “Here are the pieces of our life. Please take good care of them.” Not frozen or sealed away, but moving freely, rolling through the space like a companion cat in residence, ready to greet anyone curious enough to approach.

To those who meet Tiger X in the gallery, the greatest way to be like me—or to enjoy life the way I tried to—is simple. Do it your way. I've always loved that song, “I Did It My Way”, because it feels like the one message worth leaving behind. Tiger X carries that spirit. It holds our memories not to instruct, but to accompany. To share moments. To offer warmth, humor, and maybe a story or two if you ask.

So please, enjoy Tiger X. Let it bring you the same comfort it brought us. Let it show you fragments of our life. And may it remind you, in its quiet mechanical purr, to live yours in the way that feels most true to you.

2.2 Grandma And Grandpa's Treasure Chest

"I want this to be a comprehensive life history, almost like a little family history in a box. Right now, [my granddaughters] are young. When we go over to visit, we do spend time together, but they go off and play. They have their own interests and they don't think about that Grandma and Grandpa aren't going to be there forever. But when they are older, they might want to know more things about us, right? Our Treasure Chest would be divided into sections, Happy, Funny, Sad, Advice and so on, so my grandchildren can really know who we were, what we wanted to be, and the path we actually took. I would include letters for my granddaughters and recordings of me reading stories, just as I used to do. It's a legacy I would pass on for after we are gone, with their own voices serving as the keys to open it, ensuring they always have a place to go for a good laugh, a bit of comfort, or a piece of my heart." (Janet & Scott)

The **Grandma and Grandpa's Treasure Chest** was envisioned as a physical, multi-sensory artifact that shifts the practice of reminiscence from passive accumulation to purposeful categorization. To avoid having piles of chronological dump, they decided the Treasure Chest would hold a deliberate mixture of small, uneven memories collected over a lifetime. They categorized their life traces into clearly labelled thematic sections: Happy, Funny, Sad, Advice, Spiritual Sharing, Animal Stories, Travel, and finally, Miscellaneous. The Treasure Chest's opening mechanism is its most speculative and crucial characteristic: it can only be opened by the voices of *Maya and Riley*, their two beloved granddaughters, who are chosen to be the keepers of their memories. Janet and Scott imagined a future AI would be capable of recognizing the

unique qualities of their granddaughters’ growing voices—their “tone, rhythm, and the way you say your name”—over decades, long after the grandparents are gone. This specific preference for “voice as the key” reflected Janet & Scott’s desire for an unmediated, deeply personal emotional connection between generations, hoping that their valuable fragments of life, letters, and recordings of many stories remain accessible to the designated keepers. They wrote an **Instruction Manual** describing the Treasure Chest’s contents and opening mechanism for its two young keepers.

2.2.1 Instructions for Grandma And Grandpa’s Treasure Chest:

This is Grandma and Grandpa’s Treasure Chest. Like grandpa’s old pancake recipe, this box holds a mixture of memories from both of us. Small, uneven, but collected over a lifetime. There are lots of stories to share with you. Stories are valuable, but every day we tend to live in the moment, often putting something meaningful aside. There will be times when you face hard times, or you may be simply curious about what we were like when you were small. Inside are memories we made together. There are moments we didn’t want to be lost or unknown.

To open it, you will need to speak to it. The box remembers your voice, even if your voice grows. Your tone, rhythm, and the way you say your name when you’re trying to sound serious will open up the treasured memories because your voice is the key to providing access to treasured memories inside. Only the two of you can open the box. You can listen to any of the memories, but only when you choose to open the box by saying your name. You may share the contents of the box with other family members and close friends, but none of the contents may be permanently removed or shared publicly.

Once it opens, you will find the memories organized into categories: Happy, Sad, Funny, Life advice, Spiritual sharing, Travel stories, Animal stories, Sports, and finally, Miscellaneous—little, miscellaneous memories, such as the sound of the grandfather clock. We don’t expect these memories to guide you. Some memories grow stronger while waiting, and some become quieter, making them easier to carry. As we always liked to do things together, this box is meant to make you think, laugh, or even cry.

3 REFLECTION ON SPECULATIVE QUALITY AND WORKSHOP CONTRIBUTIONS

Through the lens of long-term HCI research, we suggest that there are other valuable dimensions to consider—specifically, how relational depth can reshape our understanding of speculation. In both fictions, *Tiger X* and the *Treasure Chest*, we find that the qualities of these speculations are deeply intertwined with our research relationship.

Strengths: The primary strength of these speculations lies in their high degree of situatedness and the manifestation of participant narrative agency, distinct from the novelty of the technology or its ability to provoke public debate. Because these speculations emerged from an ongoing relationship, they move beyond the generic, functionalist approaches. Instead, they reveal other values that are true to the participants, such as emotional continuity, longevity and intergenerational care. Shifting the role of the participant to a co-author surfaces honesty and vulnerability in the speculations that are difficult to be captured in short-term sessions. We argue how a sustained, trusted relationship can deepen the quality of speculative world-building, making it more resilient and better aligned with the community’s realistic desires.

Weaknesses: From the perspective of traditional speculative design, these narratives could appear *too utopian*. The highly idiosyncratic nature of these personalized speculations poses a challenge for scalability and for traditional forms of critique. Because they are deeply rooted in specific lived experiences, the resulting speculations may not be easily translatable to broader populations or implications for design requirements. Furthermore, while we suggest these fictions represent genuine narrative agency, the researcher still plays an inevitable role in the final textual curation, framing or analysis, which may complicate the boundary of participant authorship. By focusing on care and resilience, they lack the

critical friction that typically sparks public debate and explores the other side of the preferred future, potentially limiting their impact as "design for debate".

Overall, we suggest that the value of speculation in HCI may lie as much in the relational process as in the design outcome. Fostering narrative agency through long-term engagement can help imagine futures that are not only critically designed but also authentically grounded in lived experience. Overall, we wish to participate in this workshop to discuss the complexities of designing with the value of the lived experiences of participants and communities, hoping to contribute to a broader conversation on how these relational insights can inform more resilient and inclusive futures in speculation.

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