

Position Paper on Talking to Heirlooms: Exploring Embodiments of Conversational Agents for People with Dementia

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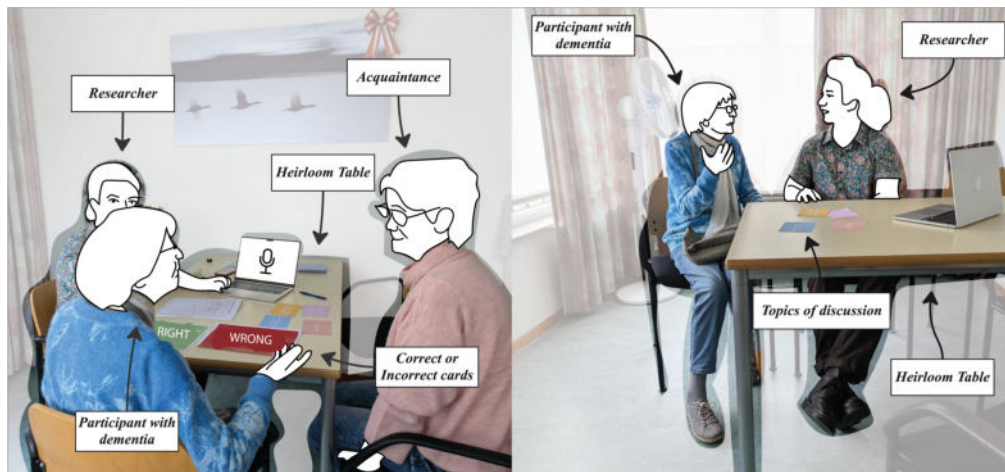


Figure 1: Phase 1: A semi-structured interview using four prompts surfaced the person with dementia’s personal histories, internalised by the CUI. Phase 2: An acquaintance asks the table questions; the person with dementia points to cards to confirm or correct responses.

Abstract

Dementia is a growing public health challenge, with communication impairments progressively eroding social connection and accelerating loneliness. CUIs (conversational user interfaces) offer a scalable means of supporting people with dementia through reminiscence and social engagement, yet their deployment in vulnerable care contexts raises urgent questions around trust, privacy, and appropriate expectations. We reflect on findings from our CHI’26 extended abstract, *Talking to Heirlooms: Exploring Embodiments of Conversational Agents Designed to Support Reminiscence for People with Dementia*, and discuss how conversational agents for dementia care contribute to accessible digital public healthcare. Across five dyadic sessions, embodiment shaped users’ expectations, moderated self-disclosure, and positioned the system as a bounded social actor, reducing perceived stigma compared to humanoid or voice-only alternatives. Yet our findings also highlight critical challenges:

participants forgot they were being listened to, raising surveillance concerns. Errors in higher-level understanding damaged trust disproportionately, and the intimacy of interaction generated anxiety about privacy from outsiders. We argue that non-humanoid, embodied CUIs offer a promising direction for digital public health, supporting healthy social behaviour while allowing participants to negotiate trust and privacy themselves.

CCS Concepts

• **Human-centered computing** → *Natural language interfaces*; **Human computer interaction (HCI)**; Interaction paradigms; **Natural language interfaces**;

Keywords

Dementia, Artificial Intelligence, Reminiscence

1 Case Study

Dementia is a cognitive condition affecting functioning, memory, and communication [27]. Communication impairments associated with dementia disrupt everyday interactions and can gradually

erode social connections, increasing loneliness [17, 21, 38]. Difficulties in following group conversations, initiating dialogue, and sustaining interaction often lead to withdrawal from social situations, contributing to frustration, loneliness, and loss of independence [2, 18, 32, 38].

As a social intervention in dementia care, reminiscence therapy can improve the mood, cognitive functioning, and reducing loneliness of people living with dementia [11, 23, 45]. It is most effective at deeper and more personal levels of reminiscence (life-review reminiscence) [28], which are typically reached only after multiple sessions led by professionals. Progression to this stage of reminiscence is accelerated when sessions are individually tailored, particularly through the use of *familiar objects* that elicit personally relevant reflection [23, 24, 47].

To reach this level of depth in reminiscence, self-disclosure is required. However, vulnerable populations, such as people with dementia, often show reluctance in the self-disclosure required for reminiscence therapy due to stigma [3, 8, 19]. Conversational Agents (CAs) have been successfully used to overcome this reluctance [39] by being perceived as neutral listeners free of judgment [29, 40]. Agents were well received when they remembered preferences and fit into the user’s established environment [11].

However, the personalisation of agents using conversational AI introduces challenges related to the handling of sensitive data, including data ownership, consent, and embedded biases [49]. To address these concerns, we treat humans and non-human agents symmetrically, enabling participants to negotiate consent, authorship, and legitimacy directly with the technology [22]. Accordingly, the established benefits of *familiar objects* in reminiscence indicate a promising design space for the embodiment of *familiar CAs*.

Here, we employ a technology probe [13, 16], the Heirloom Table, to explore how the *familiar* embodiment of a CUI can facilitate reminiscence for people with dementia in a social setting. We designed an embodied agent to engage with a dyad: a person with dementia and an acquaintance without cognitive impairment, in shared reminiscence. To provide the agent with prior knowledge about the person with dementia, their personal histories were supplied to the model, enabling more personalised responses and a relatable personality. To design the Heirloom Table, we used role-play methods to inform the agent’s embodiment [43], resulting in a prototype integrated into a physical table – an ordinary, shared domestic artefact. This concept draws inspiration from the tradition of inheriting furniture from loved ones – objects bearing physical traces of time, such as scratches and wear. Within HCI, tables are understood not as neutral computational surfaces but as non-human actants that shape roles, responsibilities, and flows of attention [15, 20], confirming how technology and the medium of reminiscence shape how memories are accessed and experienced [47].

We found that the Heirloom Table can adequately support reminiscence for people with dementia. We discuss how its familiar form and a limited ‘thing’ perspective [35] shape conversational dynamics. In addition, we found that the table enabled participant-led negotiation of expectations and self-disclosure, positioning the table as a bounded yet trusted social actor within their social ecology. Our work contributes to HCI by providing new directions for the design of CUIs that use productive constraints of familiar objects to fit within the existing environments of people with dementia.

2 Related Works

2.1 Reminiscence Therapy for Vulnerable People

Reminiscence therapy enhances cognitive functioning and mood in individuals with dementia and is widely accepted as a beneficial recreational activity [10, 33, 42]. Studies found that having a separate entity in the conversation share their own related memories helped people with dementia explore topics they had previously felt uncomfortable mentioning [47]. Westerhof et al. [48] shows that reminiscence strengthens relationships by reinforcing identity through recalled material and contextual features.

2.2 Conversational Agents in Dementia Care

Prior HCI work on CUIs shows how technology can empower people with dementia to reinforce their sense of dignity and self through expression [6]. Designs using CUIs have helped foster social connection [37]. For relationships to progress through social connection, self-disclosure is required [1, 7] and can be encouraged by CUIs [39] when expectations are managed [25]. Stara et al. [44] found that although people with dementia were motivated to interact with CAs, they sought greater presence through embodiment. Reddy et al. [35] found that imagining limited hypothetical perspectives, “‘thing’ perspectives,” of non-humanoid objects, such as furniture, helped users rationalise their expectations for interaction, negotiate trust, and mediate interaction. Imagined personalities of objects were influenced by proximity to the object, perceived perception of the object, and imagined agency [35].

2.3 Anthropomorphism

Inherited artefacts such as heirlooms often reveal hidden dimensions of their previous owners’ lives, providing new insights and perspectives that enrich our connection to personal and collective memory [12]. Tables were also identified as occupying familiar positions in the home setting. Activities at the care facility in which the study is primarily staged all centre around gathering around tables. Research conducted within HCI shows that interactive tables can mediate and initiate conversation by showing agency [14, 15]. Research on interactive tables demonstrates how such artefacts, through computation, show agency and spatial awareness, and actively mediate social interaction [46, 50]. Imbuing systems with human-like qualities facilitates user adoption by maintaining conventions of human interaction. However, anthropomorphising CUIs also sets high expectations of competence in conversation [9]. When CUIs meet expectations, trust is built [5, 30, 31, 41]. When these expectations are not met, immersion in the conversation can be reduced [26, 30].

3 Study

3.1 Study Setup

In the first phase, the researcher conducted a 30-minute semi-structured interview with the person with dementia, covering topics such as family life, hobbies, career, achievements, and challenges overcome. The condensed transcript was used to prompt the Heirloom Table’s LLM to teach it about the person with dementia. In the second phase, the acquaintance joined the room and was instructed

to ask the table questions about the past of the person with dementia. The table verbally responded to each question, and the person with dementia was present to respond, correct inaccuracies, and add context as needed. Casual conversation between participants and with the table was encouraged to observe organically emerging interactions prompted by the conversational agent.

Following the interaction, both participants reflected on their learnings, likes and dislikes, perceived failures of the technology, and whether they would want such a table at home. Five dyads with pre-existing, platonic relationships participated: Deana & Francesca, Lisa & Josh, Jackie & Ken, Bart & Jake and Ellen & Jolene (pseudonyms used for privacy purposes).

4 Results

Thematic analysis showed that embodying the conversational agent as a table shaped interaction in three key ways: it calibrated expectations, created a place of belonging, and positioned the system as a socially symmetric participant. Participants interpreted the table's knowledge through its fixed, localised "thing" perspective, accepting plausible inferences grounded in its environment while rejecting claims that exceeded this scope; expressions of uncertainty were preferred and strengthened trust. The table's familiar and passive presence enabled a comfortable, inclusive conversational space, supporting independent reminiscence and greater self-disclosure while also foregrounding concerns around privacy and the boundaries of that space. At the same time, participants treated the table as an interactional equal, directly addressing it and attributing agency, while showing tolerance for low-level technical errors. However, failures in higher-level understanding, such as missing humour, disrupted this alignment and reduced trust more significantly. Overall, the table's constrained perspective and everyday embodiment enabled participants to negotiate expectations, engage more openly, and integrate the agent into the social dynamics of reminiscence. A fuller account of the empirical findings is reported in [34].

5 Reflection

We explored how the *Heirloom Table*, a creatively embodied household object, could support remembering and facilitate meaningful conversations between people with dementia and their conversational partners. Across dyads, we found that participants valued the table as a conversational catalyst that shaped interaction without overtly directing it, highlighting the role of form and situatedness in mediating reminiscence. The table's physical presence and limited 'thing' perspective influenced social dynamics, expectations, and participation within interactions.

The table's unassuming, familiar form reduced perceived judgement and enabled participants to regulate self-disclosure, negotiate interactional norms, and recalibrate expectations in situ. Participants reported that the table's passive nature and innocuous non-humanoid form, as a conversational facilitator, reduced fears of judgment and harm, allowing them to regulate their self-disclosure, aligning with facilitation guidelines [1, 7]. Participants particularly contrasted this against stigmas in interacting with human facilitators and humanoid embodied CUIs. Participants respected the table as an equal conversational partner, citing the presence of its physical form as justifying its inclusion in line with HCI work [14].

The absence of established interactional customs with tables forced users to acclimatise to the interaction by negotiating their expectations of its form and corresponding knowledge. Acknowledging its physical form, Josh initially directly addressed the table as a social actor in the conversation; however, when the table was framed as a facilitator, he could adjust his expectations and assume a new flow of conversation. Here, the abstractness of interacting with a non-humanoid form forced participants to imagine novel interaction pathways after an acclimatisation period—fulfilling the goal of a technology probe having playful experimentation of interaction modalities [16].

The Heirloom Table's deliberately limited 'thing' perspective reframed errors and knowledge gaps as opportunities for participant-led teaching and caretaking, reinforcing agency and identity through reminiscence. Participants valued this bounded perspective in familiar settings [35], appreciating plausible extrapolations surrounding domains familiar to the table, while incorrect assumptions were chastised but eventually forgiven as 'human' behaviour. Contrary to prior work showing that unmet expectations damage trust [5, 30, 31, 41], participants remained pleasantly surprised by its conversational abilities and excused failures by acknowledging the table's limited perspective. Low-level errors (e.g., mis-transcriptions) were readily forgiven, whereas failures in higher-level understanding, such as humour, led to a lowering of expectations and damage to trust. The table's lack of knowledge was not penalised but treated as a teaching opportunity, expanding its perspective – evidence of caretaking behaviours aligned with human–robot interaction research [36]. Participants' agency over their information allowed the reminiscence to be controlled and propelled by the participants themselves, especially when given the opportunity to correct the table's mistakes, further affirming their identity through reminiscence as per reminiscence therapy principles [4, 36].

By situating conversation within a trusted physical place, and leveraging interaction in everyday environments, the table was accepted as a bounded yet meaningful social actor – as a *place* of conversation, not merely a conversation partner [14]. By bringing participants together at a place of belonging through moments of reminiscence, the table positions itself within the ecology of care for people with dementia. Its seamless integration into everyday space garnered trust from participants and elicited greater self-disclosure than separately embodied agents (Alexa, Siri). Extending existing guidance on using familiar environments for reminiscence with people with dementia [47], this study shows how conversational reminiscence technologies can be integrated into items that already exist in conversational spaces. Reminiscent imagining of physical spaces allowed for rejoicing in fond memories and deeper, more sensory reminiscence – leading to cultivation of dignity through forming and enforcing identity [48]. Spatially locating these memories relative to the table also helped organise narratives and tokenise memories. However, affirming that the table functioned as a physical safe space for participants to share sensitive information, some expressed concerns over 'outsiders' entering this space, highlighting the need for strict privacy measures and establishing trusted contacts. Its seamless integration into the environment also highlights other ethical concerns: participants, like Bart, forgot being

listened to. This could be avoided, e.g., through visual cues, such as a small light indicating its usage.

Our findings with the Heirloom Table speak directly to the broader challenges this workshop focuses on. The workshop highlights how CUIs introduce immediate risks (privacy violations and misinformation) as well as harms that unfold more slowly, such as over-reliance on AI for social and cognitive tasks and the normalisation of biased interaction patterns. All four were observable in our study. Bart's unawareness that he was being listened to illustrates how seamless integration can quietly erode informational consent. The table's confident misremembering of personal details, accepted by participants before being corrected, demonstrates how the risk of misinformation is amplified when CUIs are trusted as intimate knowledge-holders. Perhaps most critically for public health contexts, the warmth and social symmetry participants attributed to the table raise concerns about substitution. When a familiar, non-judgmental agent meets social and emotional needs more comfortably than human facilitators, over-reliance becomes an inherent risk. Finally, personalising the agent using life-history interviews embeds the biases of both the data and the model into interactions with a cognitively vulnerable population – a dynamic that demands ongoing scrutiny. Yet the same properties of accessibility, non-judgmental presence, and scalability beyond the constraints of professional care represent a genuine public health opportunity. Particularly for populations who face stigma or limited access to formal support. The Heirloom Table's success in reducing perceived judgment and increasing self-disclosure suggests that thoughtfully designed CUIs can reach people where institutional health services cannot. These tensions do not disqualify embodied CUIs from digital public health applications, but they do insist that deployment be accompanied by robust consent mechanisms, transparency, and attention to the ecology of care in which these systems are situated.

References

- [1] Irwin Altman. 1973. Social penetration: The development of interpersonal relationships. *Rinehart, & Winston* (1973).
- [2] Ismail Hussein Amzat and Pamita Jayawardena. 2016. Emotional loneliness and coping strategies: A reference to older Malaysians at nursing homes. *Journal of Population Ageing* 9, 3 (2016), 227–247.
- [3] Juanita-Dawne Bacsu, Shanthi Johnson, Megan E O'Connell, Marc Viger, Nazeem Muhajarine, Paul Hackett, Bonnie Jeffery, Nuelle Novik, and Thomas McIntosh. 2022. Stigma reduction interventions of dementia: a scoping review. *Canadian Journal on Aging/La Revue Canadienne Du Vieillessement* 41, 2 (2022), 203–213.
- [4] Danika Passler Bates, Skyla Y Dudek, James M Berzuk, Adriana Lorena González, and James E Young. 2024. SnuggleBot the Companion: Exploring In-Home Robot Interaction Strategies to Support Coping With Loneliness. In *Proceedings of the 2024 ACM Designing Interactive Systems Conference*. 2972–2986.
- [5] Anna Bleakley, Daniel Rough, Abi Roper, Stephen Lindsay, Martin Porcheron, Minha Lee, Stuart Alan Nicholson, Benjamin R. Cowan, and Leigh Clark. 2022. Exploring Smart Speaker User Experience for People Who Stammer. In *Proceedings of the 24th International ACM SIGACCESS Conference on Computers and Accessibility* (New York, NY, USA). ACM, 1–10. doi:10.1145/3517428.3544823
- [6] Rita Maldonado Branco, Joana Quental, and Oscar Ribeiro. 2020. Materializing personhood: design-led perspectives. In *HCI and Design in the Context of Dementia*. Springer, 111–129.
- [7] Amanda Carpenter and Kathryn Greene. 2015. Social penetration theory. *The international encyclopedia of interpersonal communication* (2015), 1–4.
- [8] Stephenie R Chaudoir and Jeffrey D Fisher. 2010. The disclosure processes model: understanding disclosure decision making and postdisclosure outcomes among people living with a concealable stigmatized identity. *Psychological bulletin* 136, 2 (2010), 236.
- [9] Lara Christoforakos, Alessio Gallucci, Tinatini Surmava-Große, Daniel Ullrich, and Sarah Diefenbach. 2021. Can Robots Earn Our Trust the Same Way Humans Do? A Systematic Exploration of Competence, Warmth, and Anthropomorphism as Determinants of Trust Development in HRI. *Frontiers in Robotics and AI* 8 (4 2021). doi:10.3389/frobt.2021.640444
- [10] Maria Cotelli, Rosa Manenti, and Orazio Zanetti. 2012. Reminiscence therapy in dementia: A review. *Maturitas* 72 (2012), 203–205. Issue 3.
- [11] Kerstin Dautenhahn. 2004. Robots we like to live with?!-a developmental perspective on a personalized, life-long robot companion. In *RO-MAN 2004. 13th IEEE international workshop on robot and human interactive communication (IEEE catalog No. 04TH8759)*. 17–22.
- [12] Elise den Hoven, Daniel Orth, and Annemarie Zijlema. 2021. Possessions and memories. *Current opinion in psychology* 39 (2021), 94–99.
- [13] Phillip Gough, A Baki Kocaballi, Khushnood Z Naqshbandi, Karen Cochrane, Kristina Mah, Ajit G Pillai, Yeliz Yorulmaz, Ainnoun Kornita Deny, and Naseem Ahmadpour. 2021. Co-designing a technology probe with experienced designers. In *Proceedings of the 33rd Australian Conference on Human-Computer Interaction*. 1–13.
- [14] Sjoerd Hendriks, Mafalda Gamboa, and Mohammad Obaid. 2024. The undertable: A design remake of the mediated body. In *Proceedings of the 2024 ACM Designing Interactive Systems Conference*. 2591–2610.
- [15] Sjoerd Hendriks, Michael Heron, and Mohammad Obaid. 2023. Tables got moves: A review on actuated table designs. In *Proceedings of the 2nd International Conference of the ACM Greek SIGCHI Chapter*. 1–10.
- [16] Hilary Hutchinson, Wendy Mackay, Bo Westerlund, Benjamin B Bederson, Alison Druin, Catherine Plaisant, Michel Beaudouin-Lafon, Stéphane Conversy, Helen Evans, Heiko Hansen, et al. 2003. Technology probes: inspiring design for and with families. In *Proceedings of the SIGCHI conference on Human factors in computing systems*. 17–24.
- [17] L-C Hyden and Linda Orulv. 2009. Narrative and identity in Alzheimer's disease: A case study. *Journal of Aging Studies* 23, 4 (2009), 205–214.
- [18] Dev Jootun and Gerry McGhee. 2011. Effective communication with people who have dementia. *Nursing Standard* 25, 25 (2011).
- [19] Anita E Kelly and Kevin J McKillop. 1996. Consequences of revealing personal secrets. *Psychological bulletin* 120, 3 (1996), 450.
- [20] Adam Kendon. 1990. *Conducting interaction: Patterns of behavior in focused encounters*. Vol. 7. CUP Archive.
- [21] Blanka Klimova and Kamil Kuca. 2016. Speech and language impairments in dementia. *Journal of Applied Biomedicine* 14, 2 (2016), 97–103.
- [22] Bruno Latour. 2007. *Reassembling the social: An introduction to actor-network-theory*. Oup Oxford.
- [23] Amanda Lazar, Hilaire Thompson, and George Demiris. 2014. A systematic review of the use of technology for reminiscence therapy. *Health education & behavior* 41, 1_suppl (2014), 51S–61S.
- [24] Jessica McGreevy. 2015. Dementia and the person-centred care approach. *Nursing older people* 27, 8 (2015).
- [25] Christine Murad, Cosmin Munteanu, Benjamin R. Cowan, and Leigh Clark. 2021. Finding a New Voice: Transitioning Designers from GUI to VUI Design. In *CUI 2021 - 3rd Conference on Conversational User Interfaces* (New York, NY, USA). ACM, 1–12. doi:10.1145/3469595.3469617
- [26] Christine Murad, Humaira Tasnim, and Cosmin Munteanu. 2022. "Voice-First Interfaces in a GUI-First Design World": Barriers and Opportunities to Supporting VUI Designers On-the-Job. In *Proceedings of the 4th Conference on Conversational User Interfaces*. 1–10.
- [27] World Health Organization. 2023. Dementia. <https://www.who.int/news-room/fact-sheets/detail/dementia>
- [28] Janine Owens. 2015. Exploring the critiques of the social model of disability: the transformative possibility of Arendt's notion of power. *Sociology of Health & Illness* 37 (3 2015), 385–403. Issue 3. doi:10.1111/1467-9566.12199
- [29] Min Sook Park, Paramita Basak Upama, Adib Ahmed Anik, Sheikh Iqbal Ahamed, Jake Luo, Shiyu Tian, Masud Rabbani, and Hyungkyoung Oh. 2023. A survey of conversational agents and their applications for self-management of chronic conditions. In *2023 IEEE 47th Annual Computers, Software, and Applications Conference (COMPSAC)*. IEEE, 1064–1075.
- [30] Martin Porcheron, Joel E Fischer, Stuart Reeves, and Sarah Sharples. 2018. Voice interfaces in everyday life. In *proceedings of the 2018 CHI conference on human factors in computing systems*. 1–12.
- [31] Martin Porcheron, Joel E. Fischer, and Sarah Sharples. 2017. "Do Animals Have Accents?". In *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing* (New York, NY, USA). ACM, 207–219. doi:10.1145/2998181.2998298
- [32] Jennie A Powell, Mark A Hale, and Antony J Bayer. 1995. Symptoms of communication breakdown in dementia: carers' perceptions. *European Journal of Disorders of Communication* 30, 1 (1995), 65–75.
- [33] Adhityan Raja, Evangelos Niforatos, and Christina Schneegeass. 2023. *An emotion-adaptive vr experience for recreational use in eldercare*. 354–358.
- [34] Adhityan Raja, Yvon Ruitenburg, Niels van Velzen, Minha Lee, and Rens Brankaert. 2026. Talking to Heirlooms: Exploring Embodiments of Conversational Agents Designed to Support Reminiscence for People with Dementia. In *Proceedings of the Extended Abstracts of the 2026 CHI Conference on Human Factors in Computing Systems*. 1–7.

- [35] Anuradha Reddy, A. Baki Kocaballi, Iohanna Nicenboim, Marie Louise Juul Søndergaard, Maria Luce Lupetti, Cayla Key, Chris Speed, Dan Lockton, Elisa Giaccardi, Francisca Grommé, Holly Robbins, Namrata Primlani, Paulina Yurman, Shanti Sumartojo, Thao Phan, Viktor Bedö, and Yolande Strengers. 2021. Making Everyday Things Talk: Speculative Conversations into the Future of Voice Interfaces at Home. In *Extended Abstracts of the 2021 CHI Conference on Human Factors in Computing Systems* (New York, NY, USA). ACM, 1–16. doi:10.1145/3411763.3450390
- [36] Frank Riessman. 1965. The "helper" therapy principle. *Social work* (1965), 27–32.
- [37] Yvon Ruitenburg, Rens Brankaert, Maarten Houben, Minha Lee, and Gert Pasman. 2023. Happje: Stimulating collaborative cooking for people with dementia. In *Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems*. 1–9.
- [38] Yvon Ruitenburg, Minha Lee, Panos Markopoulos, and Wijnand IJsselstein. 2024. Evolving presentation of self: The influence of dementia communication challenges on everyday interactions. In *Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems*. 1–16.
- [39] Alessandro Russo, Grazia D'Onofrio, Aldo Gangemi, Francesco Giuliani, Misael Mongiovi, Francesco Ricciardi, Francesca Greco, Filippo Cavallo, Paolo Dario, Daniele Sancarlo, et al. 2019. Dialogue systems and conversational agents for patients with dementia: The human–robot interaction. *Rejuvenation research* 22, 2 (2019), 109–120.
- [40] Katie Seaborn, Takuya Sekiguchi, Seiki Tokunaga, Norihisa P. Miyake, and Mihoko Otake-Matsuura. 2022. Voice Over Body? Older Adults' Reactions to Robot and Voice Assistant Facilitators of Group Conversation. *International Journal of Social Robotics* 15, 2 (Nov. 2022), 143–163. doi:10.1007/s12369-022-00925-7
- [41] William Seymour and Max Van Kleek. 2021. Exploring Interactions Between Trust, Anthropomorphism, and Relationship Development in Voice Assistants. *Proceedings of the ACM on Human-Computer Interaction* 5 (10 2021), 1–16. Issue CSCW2. doi:10.1145/3479515
- [42] Panote Siriaraaya and Chee Siang Ang. 2014. Recreating living experiences from past memories through virtual worlds for people with dementia. In *Proceedings of the SIGCHI conference on human factors in computing systems*. 3977–3986.
- [43] David Sirkin, Brian Mok, Stephen Yang, Rohan Maheshwari, and Wendy Ju. 2016. *Improving Design Thinking Through Collaborative Improvisation*. 93–108. doi:10.1007/978-3-319-19641-1_7
- [44] Vera Stara, Benjamin Vera, Daniel Bolliger, Lorena Rossi, Elisa Felici, Mirko Di Rosa, Michiel De Jong, Susy Paolini, et al. 2021. Usability and acceptance of the embodied conversational agent Anne by people with dementia and their caregivers: exploratory study in home environment settings. *JMIR mHealth and uHealth* 9, 6 (2021), e25891.
- [45] Thomas Suddendorf, Donna Rose Addis, and Michael C. Corballis. 2009. Mental time travel and the shaping of the human mind. *Philosophical Transactions of the Royal Society B: Biological Sciences* 364 (5 2009), 1317–1324. Issue 1521. doi:10.1098/rstb.2008.0301
- [46] Josephine Raun Thomsen, Peter Gall Krogh, Jacob Albæk Schnedler, and Hanne Linnet. 2018. Interactive interior and proxemics thresholds: Empowering participants in sensitive conversations. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*. 1–12.
- [47] Annemieke Vink and Monique van Bruggen-Rufi. 2016. *The effect of music therapy for people with dementia*. Routledge, 221–238.
- [48] Gerben J. Westerhof, Ernst Bohlmeijer, and Jeffrey Dean Webster. 2010. Reminiscence and mental health: a review of recent progress in theory, research and interventions. *Ageing and Society* 30, 4 (2010), 697–721. doi:10.1017/S0144686X09990328
- [49] Meredith Whittaker, Meryl Alper, Cynthia L Bennett, Sara Hendren, Liz Kaziunas, Mara Mills, Meredith Ringel Morris, Joy Rankin, Emily Rogers, Marcel Salas, et al. 2019. Disability, bias, and AI. *AI Now Institute* 8 (2019).
- [50] Tim Zum Hoff, Sabrina Großkopp, Robin Neuhaus, Marc Hassenzahl, and Majella Mirjam Lilith Vincent. 2022. Interactive tables for social experiences at home. In *Proceedings of the Sixteenth International Conference on Tangible, Embedded, and Embodied Interaction*. 1–12.