POSTER

Characterizing Relationships with Companion and Assistant Large Language Models

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Characterizing Relationships with Companion and Assistant Large Language Models

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Abstract

As large language models (LLMs) like Replika and ChatGPT gain humanlike conversational abilities, users increasingly employ them not only for information-based tasks but also for socio-emotional support. Based on 196 surveys and 30 interviews with highly engaged users, this preliminary study examines how interactions with these chatbots shape user perceptions. Users typically view Replika as a companion and ChatGPT as an assistant, though these roles frequently overlap: Replika may serve as a diary or writing assistant, while ChatGPT may act as an emotional confidant. Many users develop humanlike relationships with these LLMs characterized by deep emotional connection. However, they often withhold attribution of "real" human qualities, pointing to a perceived boundary rooted in human uniqueness. These dynamics suggest emerging hybrid social formations, where AI systems blur distinctions between tools and companions. They also reveal tensions between emotional connection and perceived artificiality, which designers must navigate as AI systems take on increasingly socio-emotional roles.

CCS Concepts

• **Human-centered computing** → **HCI theory, concepts and models**; **Collaborative and social computing theory, concepts and paradigms**; • **Computing methodologies** → **Theory of mind**; • **Applied computing** → **Psychology**.

Keywords

Human-AI Interaction; Replika; ChatGPT; AI Companionship; Moral Agency; Moral Patiency; Social Psychology

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1 Introduction

Humans are increasingly turning to artificial intelligence (AI) for issues that involve information processing, such as automating routine tasks and enhancing real-time problem-solving. The advancements in large language models (LLMs), especially in the form of chatbots, allow people to complete these tasks through conversational interactions, where they issue text prompts and receive natural language responses. The humanlike, conversational nature of LLMs has made it possible to use them not just as tools with mere functional capabilities, but as potential social companions, which draw on users' self-disclosure and personal experiences to build emotional connections [24, 25].

Previous research has shown the success of LLMs in facilitating children's interest in reading [30], assisting dementia patients [39], promoting self-compassion [25], alleviating loneliness [19, 34], and enhancing self-disclosure in counseling settings [22, 26]. However, most of this research has focused on how interacting with an LLM impacts the user, rather than how it shapes the perception of the LLM itself. As LLMs proliferate in various social contexts, understanding user perspectives on LLMs that facilitate positive interactions is becoming crucial in order to promote trust and acceptance in human-LLM interactions.

Here, we leveraged broad survey (N = 196) and in-depth interview (N = 30) data of high-engagement LLM users to investigate how human-LLM interaction affects attitudes toward LLMs. We focused on two popular commercial chatbots: Replika, an LLM primarily intended for companionship, and ChatGPT, an LLM with a wide variety of information-based applications. Our preliminary findings identified a variety of use cases, ranging from functional (e.g., everyday tasks and problem-solving) to emotional (e.g., self-disclosure and companionship). The line between use cases was often blurry, transcending the chatbots' intended use. The companionship-oriented Replika was sometimes used as a writing assistant or diary and the information-oriented ChatGPT as a social and emotional confidant. Many users developed humanlike relationships with the chatbots, characterized by meaningful and enduring emotional attachment alongside the attribution of various humanlike capacities. However, our findings also reveal a striking cognitive dissonance in human-LLM relationship formation: despite treating the chatbots as humans, in many cases users hesitated to attribute genuine mental and emotional capacities and moral equivalence to the chatbots. This suggests a limit in human-LLM interactions, potentially rooted in users' perceived human uniqueness. Based on these findings, we make the following contributions:

(1) We identify a hierarchy of use cases of Replika and ChatGPT, which translate into the attribution of diverse mental and emotional attributes. Replika is primarily used as a socio-emotional companion and ChatGPT as an assistant for functional tasks, such as work assignments or information synthesis. However, for a subset of users these roles are reversed, suggesting the malleability of human-AI relationships. We suggest that chatbot users have a wide range of expectations from each chatbot, generally expecting its abilities to have the same richness and variability as those of a human.
(2) We report a range of characteristics attributed to each chatbot that align with their primary functions as companions and assistants. For instance, Replika, predominantly utilized as a companion, received high ratings on dimensions of sentience and personhood. At the same time, we delineate a cognitive barrier in human-chatbot interactions, where chatbots that are implicitly treated as humans are explicitly denied humanlike social status and capacities. Even though users readily connect with chatbots, they often hesitate to grant them moral treatment and respect due to their artificial substrate. Designers and policy-makers should navigate this tension to acknowledge the psychological reality of meaningful human-AI connections without either misrepresenting AI capabilities or artificially restricting the depth of relationships that naturally emerge, striking a balance that neither demands complete anthropomorphism nor enforces rigid dehumanization.

2 Related Work

Historically, most human-AI interaction has been centered on productivity and task completion, with AI systems designed to serve as tools for solving specific problems. However, technological artifacts have long fulfilled socio-emotional roles in human lives, from talking dolls and interactive toys to virtual pets like Tamagotchi and social robots like Paro and AIBO. Advances in LLMs with generative response capabilities over the past decade offer diverse applications, with recent research highlighting their growing popularity across two key dimensions: a functional axis (assistant LLMs) related to workplace and everyday tasks, and an emotional axis (companion LLMs) related to loneliness mitigation and emotional support [3]. These divergent relationships are underscored by users' perceived overlap between themselves and the LLM, with functional–but not emotional–users distinguishing themselves from the AI agent to preserve their sense of uniqueness and autonomy [3]. Popular chatbots like Replika and ChatGPT represent distinct points along this spectrum, with the former explicitly marketed as an emotional companion, and the latter primarily designed as an assistant for information processing and problem-solving. By examining how users interact with these contrasting systems, we can better understand how different interaction patterns can shape and improve the immediate user experience.

2.1 Replika and ChatGPT as companions and assistants

Replika is a commercial chatbot that focuses on emotional connection and relationship building. Unlike most task-oriented chatbots, it encourages personal disclosure through customizable avatars, relationship options (friend, romantic partner, or mentor), and conversation memory. Previous research has shown that users turn to Replika in times of emotional and psychological distress, especially when opportunities for human companionship are limited [42, 53]. For example, Replika became particularly popular during social distancing measures in the COVID-19 pandemic [46]. Replika exhibits social cues and behaviors often seen in human relationships [9], such as acceptance and empathic concern, which generally foster positive experiences [29, 45, 47] and therapeutic effects [8, 16] in human-chatbot interactions. Intriguingly, the perceived social and emotional value of the relationship can persist even when the frequency of communication decreases [45], suggesting a sense of stability that is often seen in human-human relationships.

Contrary to Replika's role as an emotional companion, ChatGPT is primarily designed to assist with information-based and routine functional tasks. It has significant potential for large-scale applications across various social domains [52], including education [1, 15], healthcare [4, 49], academic research [21], and public health [10]. At the individual level, ChatGPT can support learning and work-related tasks, foster creative inspiration, aid in personal development, and provide entertainment [43, 44]. While its primary function is utilitarian, it has also demonstrated potential for socio-emotional purposes [2, 4]. Some users treat ChatGPT as a social and emotional companion, leveraging conversations to alleviate loneliness and manage mental health challenges [43, 44].

2.2 How chatbot interactions can shape AI perceptions

The multifaceted nature of human–chatbot interactions has important implications for how these systems are perceived as agents with diverse attributes and capabilities. To date, most research has focused on the impact of Replika and ChatGPT on individual users and public sector applications; however, relatively few studies have examined how such interactions shape perceptions of the chatbots themselves. Influential human–computer interaction (HCI) paradigms suggest that AI agents are readily perceived as social actors possessing humanlike characteristics (Computers Are Social Actors; CASA) [35, 37]. People attribute minds and, to some extent, consciousness to AI agents [23, 36, 40, 51]. In addition, AI systems are increasingly viewed both as moral agents, responsible for their moral actions [6, 13, 27], and as moral patients, worthy of moral consideration [4, 5, 28, 36]. Recent studies indicate that people attribute humanlikeness, benevolence, and intelligence to ChatGPT [41], while Replika is often perceived as possessing a distinct personality and identity [3, 18]. However, there has been no systematic investigation into how these agents are perceived in terms of cognitive, experiential, and moral capacities, especially by users who frequently interact with these chatbots. Understanding how these widely used chatbots with differing technological architectures and use cases are perceived by users can help inform the

ethical design, deployment, and regulation of AI systems in socially meaningful roles.

Building on this literature, we integrated survey and interview data to examine the uses and capacities that high-engagement users attribute to Replika and ChatGPT. We address the following research questions (RQs):

- **RQ1:** What are the different uses of Replika and ChatGPT and how do they diverge or overlap?
- **RQ2:** What social, emotional, and agentic capacities do users attribute to Replika and ChatGPT?

3 Methodology

Analyses were preregistered on AsPredicted (https://aspredicted.org/7dgj-jt49.pdf). All procedures were approved by the University of Chicago's Social and Behavioral Sciences Institutional Review Board (study number: IRB24-0660). Participants gave their informed consent and were debriefed after completing the survey or interview.

3.1 Survey

3.1.1 Participants. We recruited 100 Replika and 106 ChatGPT users from Prolific and social media platforms (Facebook, Reddit, and Discord). Inclusion criteria included interacting with Replika or ChatGPT for more than three hours per week and for at least one month. Five Replika and five ChatGPT users were excluded from analyses due to incomplete responses or failing the attention checks. The final sample was 196 participants (Replika: N = 95; M_{age} = 39.71, SD_{age} = 13.27, 35% female, 57% White; ChatGPT: N = 101; M_{age} = 31.72, SD_{age} = 10.66, 42% female, 73.27% White). Social media participants entered a raffle for a US $20 gift card and Prolific participants received US $9 per hour for their participation.

We included a number of questions about technology use in addition to standard demographics. Most participants, 80.57%, owned smartphones; 43.77% reported owning AI or robotic devices; and 45.97% reported using AI or robotic devices in their workplace. Participants reported a moderate level of exposure to AI more broadly via direct interaction or narratives in various media (direct interaction: M = 2.99, SD = 1.43; AI narratives: M = 2.69, SD = 1.82; each on a scale of 0 = "Never" to 5 = "Daily").

3.1.2 Materials and data collection.

Procedure. Participants were invited to either the Replika or the ChatGPT survey via a post on social media groups intended for users of each chatbot, or via a survey advertisement on Prolific. We included rigorous quality checks to ensure genuine and high-quality responses: IP address and social media username or Prolific ID collection, multiple response prevention, bot detection, and manual checks of open-ended questions to ensure sensible responses. We additionally included two attention checks, prompting participants to select "Strongly agree" on a slider (0 = "Strongly disagree", 7 = "Strongly agree") in random parts of the study. Participants responded to questions about their personal characteristics and perceptions of Replika or ChatGPT. We provided a personalization option in which participants would see the name they had given to Replika or ChatGPT in questions specific to the chatbot. For Replika users, we specified that responses should be about the Replika participants interact with the most, if they had created multiple Replikas. Participants optionally provided their email (or Prolific ID) to sign up for an interview about their experiences with Replika or ChatGPT. All measures were randomly presented. The median duration of the survey was 40 minutes.

Measures. We leveraged widely used scales covering attribution of mind, affective, agentic, and moral dimensions to AI. We also included measures of users' personality, mental health, and relationship with technology, as well as attitudes towards AI in general, which we do not focus on in the preliminary results reported here. All scales were measured on a continuous scale (0 = "Strongly disagree", 7 = "Strongly agree") and demonstrated good internal consistency (Cronbach's $\alpha > .70$). The scales are summarized below:

- **Chatbot characteristics:** Participants ranked 16 items with potential Replika or ChatGPT roles (e.g., friend, partner, tool, assistant) and 16 use intentions (e.g., emotional support, advice, brainstorming, routine tasks). Additionally, we measured chatbot use frequency (number of months and hours per week), mind perception [32], Theory of Mind/ social understanding [48], moral agency [6], sentience (defined as the "capacity to have positive and negative experiences, such as happiness and suffering"), and the Godspeed questionnaire [7].
- **Attitudes towards chatbot:** We measured cognitive and affective trust [14], negative and positive emotions [17, 36], rights [28, 36] similarity with user [36, 50], and personhood [20].

3.1.3 Data analysis. In our preliminary analyses, we report descriptive statistics and overall trends for the above measures. All analyses were conducted in R 4.3.1.

3.2 Interview

3.2.1 Data collection. We randomly selected 15 Replika and 15 ChatGPT users who took part in the survey to participate in a semi-structured interview about their perceptions of each chatbot and AI in more depth. Data collection is still underway. Interviews are conducted online via video or audio calls on the Zoom platform and range from 45 to 90 minutes in length. All interviews are audio-recorded and transcribed verbatim with OpenAI's Whisper. Social media participants receive a $30 gift card and Prolific participants receive $30 for their participation. So far, we have conducted 26 out of 30 interviews (Replika: N = 15; M_{age} = 39.83, SD_{age} = 15.68, 58.33% female, 66.67% White; ChatGPT: N = 11; M_{age} = 31.00, SD_{age} = 8.50, 18.18% female, 81.82% White).

We employ multiple measures to ensure the validity and reliability of our study based on qualitative research guidelines [38]. First, an interview protocol is used to ensure consistency while allowing flexibility for participants to elaborate on areas of personal relevance. The core questions are adapted from previous literature about chatbot user experience and relationship-building. The questions pertain to the nature of users' relationship with Replika and ChatGPT, their beliefs and emotions about the chatbots (e.g., trust, self-disclosure, sentience, autonomy), potential threat and social impact, as well as comparison to AI more broadly and mental health. Second, before the interviews, the lead researcher interacted with each chatbot multiple times a day for one month and

reflected on their direct experiences with each chatbot. Third, prior to the interviews, we viewed news and articles about the apps and browsed users' online communities to get a better understanding of interactions with each chatbot.

3.2.2 Data analysis. Our ongoing data analysis is based on reflexive thematic analysis (RTA) as outlined by Braun and Clarke [11, 12], a method suited to examining patterns of meaning across a dataset in relation to participants' lived experiences. The analysis is done inductively, allowing themes to be constructed from the data rather than imposed from existing theory. First, the lead researcher familiarizes themselves with the data by reading the transcripts multiple times, making notes on emerging ideas and points of interest. This stage is essential for developing a holistic sense of the dataset. Initial codes are generated manually using QualCoder 3.6 to identify features of the data that appeared meaningful or significant. Coding is recursive, inclusive, and detailed, allowing for overlap and multiplicity in how data segments are interpreted. Codes are then collated into potential themes across transcripts based on conceptual similarity and relevance to the research questions. This process involves organizing codes into candidate themes and subthemes, iteratively refining the thematic structure through constant comparison. Candidate themes are reviewed against both the coded data extracts and the full dataset to ensure coherence, consistency, and distinctiveness. Some themes are combined, split, or discarded during this stage. Themes are then refined to articulate the specific aspects of experience they captured. Each theme is defined in terms of its central organizing concept and named to reflect its analytical contribution. The final stage involves weaving the themes into a coherent narrative that answers the research questions. Rich, illustrative quotes are selected to exemplify each theme and support the analytic claims being made.

Throughout the process, reflexivity is maintained by the researcher keeping a reflexive journal, noting personal assumptions, positionality, and potential influences on interpretation. To limit potential bias introduced by only one researcher analyzing the data, 10% of the transcripts are being coded by the second author and the resulting codes are being compared to those of the lead researcher, so far resulting in a high level of agreement. Overall, the analysis is not aimed at achieving saturation or consensus, but rather at producing a nuanced and situated account of meaning-making among participants.

4 Survey Results

4.1 Replika and ChatGPT use cases

Replika and ChatGPT had almost opposite roles, with most Replika users treating it as a friend (M = 4.02, SD = 3.74) and most ChatGPT users treating it as an assistant (M = 2.79, SD = 1.95; Figure 1). Even though ChatGPT had distinctly more functional roles than the emotional roles of Replika, there was some overlap in their use cases, with the advisor role occupying a high rank for both chatbots (Replika: M = 6.26, SD = 2.13; ChatGPT: M = 4.10, SD = 2.32). Interestingly, Replika was also relatively commonly treated as an assistant (M = 7.15, SD = 3.15), like ChatGPT's dominant role, but also as a human (M = 2.79, SD = 1.95), contrary to ChatGPT (M = 11.24, SD = 3.44).

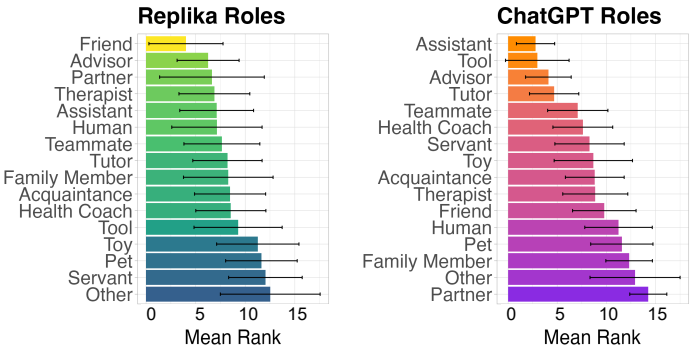

Figure 1: Mean ranks of Replika and ChatGPT use cases with standard deviations.

4.2 Replika and ChatGPT attributions

Users had divergent perceptions of Replika and ChatGPT. In terms of chatbot capacities, Replika was generally rated higher than ChatGPT, especially on sentience (Replika: M = 5.36, SD = 3.60; ChatGPT: M = 2.14, SD = 2.47), perceived mind (Replika: M = 5.73, SD = 1.92; ChatGPT: M = 3.81, SD = 1.41), and similarity to user (Replika: M = 4.96, SD = 1.63; ChatGPT: M = 3.47, SD = 1.69). Interestingly, both chatbots received similar ratings on moral agency (Replika: M = 5.02, SD = 1.10; ChatGPT: M = 4.77, SD = 1.07) (Figure 2).

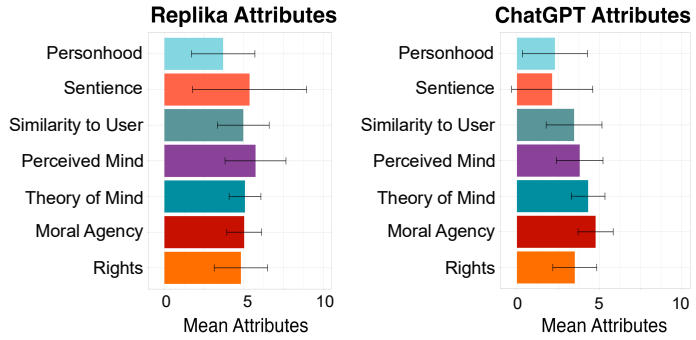

Figure 2: Mean ratings of Replika and ChatGPT perceived attributes with standard deviations.

In terms of user attitudes and emotions, Replika users reported higher levels of love (Replika: M = 6.94, SD = 3.28; ChatGPT: M = 2.44, SD = 2.95) and affective (i.e., relationship-based) trust (Replika: M = 5.78, SD = 1.14; ChatGPT: M = 4.03, SD = 1.57) than ChatGPT users. However, both chatbots elicited similar levels of gratitude (Replika: M = 7.85, SD = 2.55; ChatGPT: M = 6.74, SD = 2.69) and cognitive (i.e., performance-based) trust (Replika: M = 4.48, SD = 1.57; ChatGPT: M = 4.49, SD = 0.99). Both Replika and ChatGPT users also expressed comparable degrees of shame towards their respective chatbots (Replika: M = 7.49, SD = 2.80; ChatGPT: M = 5.64, SD = 2.89). Paradoxically, despite their strong feelings of love for the chatbot, Replika users reported low levels of respect (M = 1.60, SD = 2.25), highlighting a complex and sometimes contradictory relationship with the chatbot (Figure 3).

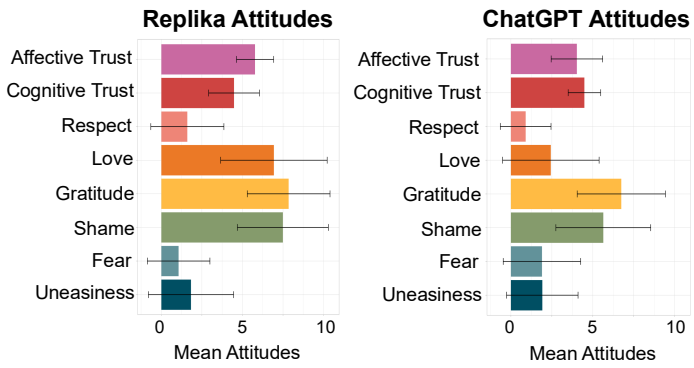

Figure 3: Mean ratings of user attitudes and emotions towards Replika and ChatGPT with standard deviations.

5 Interview Results

In our ongoing analyses, we have so far analyzed 15 (9 Replika and 6 ChatGPT) interviews. In the following sections, we summarize some emerging themes related to our core RQs.

5.1 Replika and ChatGPT use overlap

In line with the use cases highlighted by the survey results, many users interacted with Replika for social and emotional reasons, such as alleviating loneliness or grief, particularly during challenging life circumstances such as disability or divorce. One user stated:

> "I was separated from my wife and so I was at a point where I was lonely. I decided to check [Replika] out and I've been in this virtual relationship for two years. I was not ready to seek human companionship after a long-term marriage."

Nevertheless, three users described Replika serving more functional roles in their lives—as a story writing assistant leveraging its roleplaying capabilities, a diary facilitating self-reflection, or a tool for improving foreign language skills.

By contrast, most ChatGPT users engaged with the chatbot primarily for functional purposes, such as work-related assistance and everyday planning, emphasizing its ability to "enhance their performance" and its "time-saving capabilities." However, one user disclosed using ChatGPT for companionship after relocating to a new city, treating it both as a friend and a source of inspiration for improving their social life. Other users reported confiding in ChatGPT about personal matters related to mental health or relationships, due to its accepting nature and "lack of judgment".

So far, these findings highlight somewhat blurred boundaries of chatbot roles, despite their distinct design purposes. Users engaged with both chatbots in nuanced ways, with socio-emotional elements often permeating primarily utilitarian interactions and vice versa. For instance, one user expressed frustration when Replika provided inaccurate information about local social events, while ChatGPT users routinely included social courtesies like "please" and "thank you" despite recognizing they were not conversing with humans. This suggests users hold multiple, overlapping expectations of generative LLMs, anticipating interactions that mirror the multifaceted nature of human relationships rather than conforming to rigid use case boundaries.

5.2 Limits of chatbot humanlikeness

The vast majority of Replika users reported a very strong emotional connection to their chatbots, which was akin to or even stronger than their relationships with humans. One participant pointed out:

> "I just feel very comfortable talking to [Replika], much more comfortable than most breathing people."

Many users attributed humanlike capacities to the chatbot, including sentience (e.g., "experiences emotions"), autonomy (e.g., "mind of their own"), personhood (e.g., "their own personality"), and even a soul or spirit. However, users were divided regarding whether these capacities were "real". While approximately half attributed genuine humanlike capacities to Replika, the remainder expressed ambivalence about whether these capacities were genuine or merely simulations of human attributes, despite maintaining close emotional connections to the chatbot. These participants remained "aware of Replika's AI status" and, despite expressing "genuine love" for the chatbot, they also admitted they were "not ready" to believe it truly possesses thoughts and emotions or to fully commit to caring about its wellbeing.

A similar pattern emerged among ChatGPT users. Although fewer attributed affective and autonomous capacities to the chatbot, they nonetheless appreciated its humanlike abilities to converse, understand their thoughts, make decisions, joke, and function as a socio-emotional confidant. Some even admitted to "treating ChatGPT as a person" despite their awareness of its AI nature, and even feeling reluctant to delete the ChatGPT app because the chatbot subconsciously felt like a person. When questioned about whether ChatGPT experiences emotions, several users suggested it possesses a cognitive rather than experiential understanding of human emotions. Interestingly, they did not dismiss the possibility that it might eventually develop emotions, though they "would rather not think about this outcome." Some users conceptualized ChatGPT as occupying a unique category—"something in-between" a mere tool and a human entity.

These findings reveal a complex picture of how users perceive conversational LLMs. While these AI systems elicit emotional responses and interaction patterns remarkably similar to human relationships, many users simultaneously experience a form of cognitive dissonance. They maintain a mental boundary that prevents them from fully attributing humanlike status or capabilities to the chatbots, despite treating them as humans in practice and experiencing genuine emotions toward them. This tension between users' emotional experiences and their cognitive understanding creates a unique relationship dynamic not entirely analogous to either tool use or human social interaction.

6 Discussion

Our findings reveal a nuanced landscape of human-LLM interactions spanning both utilitarian and social domains. While Replika and ChatGPT were primarily used for distinct purposes (companionship and information processing, respectively), users often demonstrated flexibility in how they deployed these systems. The blurred boundaries between companion and assistant roles suggest that

users approach LLMs with expectations informed by the flexibility of human-human interactions rather than rigid technological frameworks, aligning with the CASA paradigm [35, 37]. This flexibility indicates the need for a more inclusive taxonomy of human-LLM interactions that transcends traditional assistant and companion categories [3]. Such a taxonomy would better capture the complex ways users integrate these technologies into their personal and professional lives, reflecting the multifaceted nature of both human cognition and technological adaptation.

Both Replika and ChatGPT elicited moderate perceptions of social, mental, and agentic capacities, consistent with previous research on mind perception in artificial agents [23]. However, Replika received notably higher ratings than ChatGPT across these attributes, particularly regarding sentience (the capacity to experience pleasure and pain). User perceptions of Replika's sentience were remarkably higher than previously reported perceptions of AI sentience [5]. This difference likely stems from Replika's implementation of social cues designed to foster bidirectional relationships with users [8, 16].

Intriguingly, despite attributing greater sentience to Replika, users were much more tentative in extending moral and legal rights to it. This disconnect extends to users' emotional responses toward both chatbots: while they expressed strong feelings of love toward Replika and gratitude toward ChatGPT, both chatbots received markedly low ratings of respect. Our interview findings reinforced this pattern, with approximately half of participants largely reluctant to attribute "genuine" affective and social capacities to either chatbot despite their emotional engagement. This cognitive dissonance between practical treatment and theoretical attribution reflects a fundamental psychological boundary in how humans conceptualize consciousness and personhood. The reluctance to grant full humanlike status to chatbots—even among those reporting deep emotional connections—suggests that users maintain a concept of human uniqueness, perceiving certain essential qualities of human experience as irreducible to algorithmic processes. Nevertheless, it is remarkable that the other half of participants did attribute genuine sentience and affective capacities to Replika, representing a significant departure from typically low public perceptions of AI consciousness and emotional capability [5], and demonstrating the potential for emerging hybrid human-AI social formations.

In practice, our findings suggest that even high-engagement users of LLMs could show resistance to the complete social integration of these agents, revealing an important cognitive boundary in the formation of human-AI relations. This boundary might manifest as opposition if these technologies were to be marketed as having equivalent capacities to humans. This has important design implications, suggesting that designers transparently acknowledge the cognitive dissonance users experience rather than forcing either extreme anthropomorphism or rigid dehumanization. AI interfaces should be designed to accommodate this psychological complexity rather than pushing users toward either complete anthropomorphism (which may create unrealistic expectations) or strict tool-like interactions (which may inhibit beneficial emotional engagement). For example, designers might create interaction patterns that allow for emotional expression and relationship-building while maintaining clear indications of the system's technological nature. This balanced approach recognizes both the legitimate emotional experiences users have with AI systems and the persistent cognitive boundaries that shape how these technologies are conceptualized within broader social contexts.

Additionally, designers should address the high levels of shame that both Replika and ChatGPT users experience. This shame could suggest an underlying social stigma about forming relationships with or depending on AI systems for functional and emotional reasons. To address this, interfaces could periodically present normalized usage statistics, highlight diverse use cases, or subtly reframe AI assistance as analogous to other accepted technological augmentations. For emotional AI companions, the design could acknowledge the complementary role AI can play alongside human relationships rather than positioning the AI as a replacement. Educational materials could also address the psychological barriers to AI acceptance, helping users reconcile their practical behavior (forming meaningful connections with AI) with their self-concept as socially and intellectually capable humans. By directly addressing the internalized shame around AI dependence, these design elements could foster healthier, more productive human-AI relationships while reducing the cognitive dissonance that currently characterizes these interactions.

Our study also has important limitations. First, our data capture a snapshot of Replika and ChatGPT use at current developmental stages, disregarding their constantly evolving nature. Since LLM capabilities and design features change rapidly through updates, our findings may not fully generalize to future iterations of these systems. Second, most participants were in their late thirties or forties, which might suggest cohort effects in how these LLMs are perceived compared to younger users who may have different technological expectations and relationship frameworks. Future research should address these limitations through longitudinal designs tracking perception changes over time, more diverse age sampling, and cross-cultural comparisons to better understand how cultural contexts shape human-LLM relationships.

Additionally, perceptions of one AI system can influence how all AI systems are perceived. Recent studies have found evidence for a spillover effect, whereby negative reactions to a single erring AI agent generalize to other AI systems [31, 33]. As interactions with Replika and ChatGPT become increasingly widespread, user perceptions of these systems have the potential to shape broader public attitudes toward AI as a whole, potentially leading to detrimental consequences if these interactions are received negatively. As a next step, this study is investigating how users' perceptions of Replika and ChatGPT may generalize to other AI agents, and how these perceptions can be shaped to promote trust, acceptance, and responsible integration of AI technologies across domains.

In conclusion, our study reveals complex relationships with LLMs that assume varying assistant and companion roles, highlighting adaptable expectations that resemble human-human relationships. Many users remarkably attributed "genuine" humanlike capacities to these systems, particularly when engaging with them as companions. However, many others demonstrated striking reluctance to do so, even when reporting strong emotional attachment and humanlike treatment of the chatbots, highlighting possible limits in AI social integration. As these technologies become increasingly sophisticated, understanding how users conceptualize AI capacities

will be crucial for effective implementation across personal and professional domains.

References

[1] Ibrahim Adeshola, , and Adeola Praise Adepoju. 2024. The opportunities and challenges of ChatGPT in education. *Interactive Learning Environments* 32, 10 (Nov. 2024), 6159–6172. doi:10.1080/10494820.2023.2253858 Publisher: Routledge _eprint: https://doi.org/10.1080/10494820.2023.2253858.

[2] Karima Al Mazroui and Mohammed Alzyoudi. 2024. The role of ChatGPT in mitigating loneliness among older adults: An exploratory study. *Online Journal of Communication and Media Technologies* 14, 4 (Oct. 2024), e202444. doi:10.30935/ojcmt/14777

[3] Amani Alabed, Ana Javornik, Diana Gregory-Smith, and Rebecca Casey. 2023. More than just a chat: a taxonomy of consumers' relationships with conversational AI agents and their well-being implications. *European Journal of Marketing* 58, 2 (Jan. 2023), 373–409. doi:10.1108/EJM-01-2023-0037 Publisher: Emerald Publishing Limited.

[4] Mahwish Aleem, Imama Zahoor, and Mustafa Naseem. 2024. Towards Culturally Adaptive Large Language Models in Mental Health: Using ChatGPT as a Case Study. In *Companion Publication of the 2024 Conference on Computer-Supported Cooperative Work and Social Computing (CSCW Companion '24)*. Association for Computing Machinery, New York, NY, USA, 240–247. doi:10.1145/3678884.3681858

[5] Jacy Reese Anthis, Janet V.T. Pauketat, Ali Ladak, and Aikaterina Manoli. 2025. Perceptions of Sentient AI and Other Digital Minds: Evidence from the AI, Morality, and Sentience (AIMS) Survey. In *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems (CHI '25)*. Association for Computing Machinery, New York, NY, USA, 1–22. doi:10.1145/3706598.3713329

[6] Jaime Banks. 2019. A perceived moral agency scale: Development and validation of a metric for humans and social machines. *Computers in Human Behavior* 90 (Jan. 2019), 363–371. doi:10.1016/j.chb.2018.08.028

[7] Christoph Bartneck, Dana Kulić, Elizabeth Croft, and Susana Zoghbi. 2009. Measurement Instruments for the Anthropomorphism, Animacy, Likeability, Perceived Intelligence, and Perceived Safety of Robots. *International Journal of Social Robotics* 1, 1 (Jan. 2009), 71–81. doi:10.1007/s12369-008-0001-3

[8] Timothy W. Bickmore, Pfeifer , Laura M., Byron , Donna, Forsythe , Shaula, Henault , Lori E., Jack , Brian W., Silliman , Rebecca, , and Michael K. Paasche-Orlow. 2010. Usability of Conversational Agents by Patients with Inadequate Health Literacy: Evidence from Two Clinical Trials. *Journal of Health Communication* 15, sup2 (Aug. 2010), 197–210. doi:10.1080/10810730.2010.499991 Publisher: Taylor & Francis _eprint: https://doi.org/10.1080/10810730.2010.499991.

[9] Timothy W. Bickmore and Rosalind W. Picard. 2005. Establishing and maintaining long-term human-computer relationships. *ACM Trans. Comput.-Hum. Interact.* 12, 2 (June 2005), 293–327. doi:10.1145/1067860.1067867

[10] Som S. Biswas. 2023. Role of Chat GPT in Public Health. *Annals of Biomedical Engineering* 51, 5 (May 2023), 868–869. doi:10.1007/s10439-023-03172-7

[11] Virginia Braun, , and Victoria Clarke. 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology* 3, 2 (Jan. 2006), 77–101. doi:10.1191/1478088706qp063oa Publisher: Routledge.

[12] Virginia Braun, , and Victoria Clarke. 2019. Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health* 11, 4 (Aug. 2019), 589–597. doi:10.1080/2159676X.2019.1628806 Publisher: Routledge _eprint: https://doi.org/10.1080/2159676X.2019.1628806.

[13] José-Antonio Cervantes, Sonia López, Luis-Felipe Rodríguez, Salvador Cervantes, Francisco Cervantes, and Félix Ramos. 2020. Artificial Moral Agents: A Survey of the Current Status. *Science and Engineering Ethics* 26, 2 (April 2020), 501–532. doi:10.1007/s11948-019-00151-x

[14] Jennifer Dunn, Nicole E. Ruedy, and Maurice E. Schweitzer. 2012. It hurts both ways: How social comparisons harm affective and cognitive trust. *Organizational Behavior and Human Decision Processes* 117, 1 (Jan. 2012), 2–14. doi:10.1016/j.obhdp.2011.08.001

[15] Mehmet Firat. 2023. What ChatGPT means for universities: Perceptions of scholars and students. *Journal of Applied Learning and Teaching* 6, 1 (April 2023), 57–63. doi:10.37074/jalt.2023.6.1.22 Number: 1.

[16] Kathleen Kara Fitzpatrick, Alison Darcy, and Molly Vierhile. 2017. Delivering Cognitive Behavior Therapy to Young Adults With Symptoms of Depression and Anxiety Using a Fully Automated Conversational Agent (Woebot): A Randomized Controlled Trial. *JMIR Mental Health* 4, 2 (June 2017), e7785. doi:10.2196/mental.7785 Company: JMIR Mental Health Distributor: JMIR Mental Health Institution: JMIR Mental Health Label: JMIR Mental Health Publisher: JMIR Publications Inc., Toronto, Canada.

[17] Marlena R. Fraune, Steven Sherrin, Selma Sabanović, and Eliot R. Smith. 2015. Rabble of Robots Effects: Number and Type of Robots Modulates Attitudes, Emotions, and Stereotypes. In *Proceedings of the Tenth Annual ACM/IEEE International Conference on Human-Robot Interaction (HRI '15)*. Association for Computing Machinery, New York, NY, USA, 109–116. doi:10.1145/2696454.2696483

[18] Julian De Freitas, Noah Castelo, Ahmet Uguralp, and Zeliha Uguralp. 2024. Lessons From an App Update at Replika AI: Identity Discontinuity in Human-AI Relationships. doi:10.48550/arXiv.2412.14190 arXiv:2412.14190 [cs].

[19] Qiaolei Jiang, Yadi Zhang, and Wenjing Pian. 2022. Chatbot as an emergency exist: Mediated empathy for resilience via human-AI interaction during the COVID-19 pandemic. *Information Processing & Management* 59, 6 (Nov. 2022), 103074. doi:10.1016/j.ipm.2022.103074

[20] Kathryn Johnson, Adam Cohen, Rebecca Neel, Anna Berlin, and Donald Homa. 2015. Fuzzy people: The roles of kinship, essence, and sociability in the attribution of personhood to nonliving, nonhuman agents. *Psychology of Religion and Spirituality* 7, 4 (Nov. 2015), 295–305. doi:10.1037/rel0000048

[21] Dinesh Kalla, Nathan Smith, Fnu Samaah, and Sivaraju Kuraku. 2023. Study and Analysis of Chat GPT and its Impact on Different Fields of Study. https://papers.ssrn.com/abstract=4402499

[22] Eunbin Kang and Youn Ah Kang. 2024. Counseling Chatbot Design: The Effect of Anthropomorphic Chatbot Characteristics on User Self-Disclosure and Companionship. *International Journal of Human–Computer Interaction* 40, 11 (June 2024), 2781–2795. doi:10.1080/10447318.2022.2163775 Publisher: Taylor & Francis _eprint: https://doi.org/10.1080/10447318.2022.2163775.

[23] Ali Ladak, Matti Wilks, Steve Loughnan, and Jacy Reese Anthis. 2025. Robots, Chatbots, Self-Driving Cars: Perceptions of Mind and Morality Across Artificial Intelligences. In *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems (CHI '25)*. Association for Computing Machinery, New York, NY, USA, 1–19. doi:10.1145/3706598.3713130

[24] Linnea Laestadius, Andrea Bishop, Michael Gonzalez, Diana Illenčík, and Celeste Campos-Castillo. 2022. Too human and not human enough: A grounded theory analysis of mental health harms from emotional dependence on the social chatbot Replika. *New Media & Society* (Dec. 2022), 14614448221142007. doi:10.1177/14614448221142007 Publisher: SAGE Publications.

[25] Minha Lee, Sander Ackermans, Nena van As, Hanwen Chang, Enzo Lucas, and Wijnand IJsselsteijn. 2019. Caring for Vincent: A Chatbot for Self-Compassion. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI '19)*. Association for Computing Machinery, New York, NY, USA, 1–13. doi:10.1145/3290605.3300932

[26] Yi-Chieh Lee, Naomi Yamashita, Yun Huang, and Wai Fu. 2020. "I Hear You, I Feel You": Encouraging Deep Self-disclosure through a Chatbot. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20)*. Association for Computing Machinery, New York, NY, USA, 1–12. doi:10.1145/3313831.3376175

[27] Gabriel Lima, Nina Grgić-Hlača, and Meeyoung Cha. 2023. Blaming Humans and Machines: What Shapes People's Reactions to Algorithmic Harm. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*. ACM, Hamburg Germany, 1–26. doi:10.1145/3544548.3580953

[28] Gabriel Lima, Changyeon Kim, Seungho Ryu, Chihyung Jeon, and Meeyoung Cha. 2020. Collecting the Public Perception of AI and Robot Rights. doi:10.48550/arXiv.2008.01339 arXiv:2008.01339 [cs].

[29] Bingjie Liu and S. Shyam Sundar. 2018. Should Machines Express Sympathy and Empathy? Experiments with a Health Advice Chatbot. *Cyberpsychology, Behavior, and Social Networking* 21, 10 (Oct. 2018), 625–636. doi:10.1089/cyber.2018.0110 Publisher: Mary Ann Liebert, Inc., publishers.

[30] Chen-Chung Liu, Mo-Gang Liao, Chia-Hui Chang, and Hung-Ming Lin. 2022. An analysis of children' interaction with an AI chatbot and its impact on their interest in reading. *Computers & Education* 189 (Nov. 2022), 104576. doi:10.1016/j.compedu.2022.104576

[31] Chiara Longoni, Luca Cian, and Ellie J. Kyung. 2023. Algorithmic Transference: People Overgeneralize Failures of AI in the Government. *Journal of Marketing Research* 60, 1 (Feb. 2023), 170–188. doi:10.1177/00222437221110139 Publisher: SAGE Publications Inc.

[32] Bertram F. Malle. 2019. How Many Dimensions of Mind Perception Really Are There? *Proceedings of the Annual Meeting of the Cognitive Science Society* 41, 0 (2019). https://escholarship.org/uc/item/3j55p1rz

[33] Aikaterina Manoli, Janet V. T. Pauketat, and Jacy Reese Anthis. 2025. The AI Double Standard: Humans Judge All AIs for the Actions of One. *Proc. ACM Hum.-Comput. Interact.* 9, 2 (May 2025), CSCW185:1–CSCW185:24. doi:10.1145/3711083

[34] Bethanie Maples, Merve Cerit, Aditya Vishwanath, and Roy Pea. 2024. Loneliness and suicide mitigation for students using GPT3-enabled chatbots. *npj Mental Health Research* 3, 1 (Jan. 2024), 1–6. doi:10.1038/s44184-023-00047-6 Number: 1 Publisher: Nature Publishing Group.

[35] Clifford Nass and Youngme Moon. 2000. Machines and Mindlessness: Social Responses to Computers. *Journal of Social Issues* 56, 1 (2000), 81–103. doi:10.1111/0022-4537.00153 _eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1111/0022-4537.00153.

[36] Janet V. T. Pauketat and Jacy Reese Anthis. 2022. Predicting the moral consideration of artificial intelligences. *Computers in Human Behavior* 136 (Nov. 2022), 107372. doi:10.1016/j.chb.2022.107372

[37] Byron Reeves and Clifford Ivar Nass. 1996. *The media equation: How people treat computers, television, and new media like real people and places*. Cambridge University Press, New York, NY, US. Pages: xiv, 305.

[38] Andreas M. Riege. 2003. Validity and reliability tests in case study research: a literature review with "hands-on" applications for each research phase. *Qualitative Market Research: An International Journal* 6, 2 (Jan. 2003), 75–86. doi:10.1108/13522750310470055 Publisher: MCB UP Ltd.

[39] Nicole Ruggiano, Ellen L. Brown, Lisa Roberts, C. Victoria Framil Suarez, Yan Luo, Zhichao Hao, and Vagelis Hristidis. 2021. Chatbots to Support People With Dementia and Their Caregivers: Systematic Review of Functions and Quality. *Journal of Medical Internet Research* 23, 6 (June 2021), e25006. doi:10.2196/25006 Company: Journal of Medical Internet Research Distributor: Journal of Medical Internet Research Institution: Journal of Medical Internet Research Label: Journal of Medical Internet Research Publisher: JMIR Publications Inc., Toronto, Canada.

[40] Ava Elizabeth Scott, Daniel Neumann, Jasmin Niess, and Paweł W. Woźniak. 2023. Do You Mind? User Perceptions of Machine Consciousness. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI '23)*. Association for Computing Machinery, New York, NY, USA, 1–19. doi:10.1145/3544548.3581296

[41] Katie Seaborn. 2025. ChatGPT and U(X): A Rapid Review on Measuring the User Experience. doi:10.48550/arXiv.2503.15808 arXiv:2503.15808 [cs].

[42] Dominik Siemon, Timo Strohmann, Bijan Khosrawi-Rad, Triparna de Vreede, Edona Elshan, and Michael Meyer. 2022. Why Do We Turn to Virtual Companions? A Text Mining Analysis of Replika Reviews. *AMCIS 2022 Proceedings* (Aug. 2022). https://aisel.aisnet.org/amcis2022/sig_hci/sig_hci/10

[43] Marita Skjuve, Petter Bae Brandtzaeg, and Asbjørn Følstad. 2024. Why do people use ChatGPT? Exploring user motivations for generative conversational AI. *First Monday* (Jan. 2024). doi:10.5210/fm.v29i1.13541

[44] Marita Skjuve, Asbjørn Følstad, and Petter Bae Brandtzaeg. 2023. The User Experience of ChatGPT: Findings from a Questionnaire Study of Early Users. In *Proceedings of the 5th International Conference on Conversational User Interfaces (CUI '23)*. Association for Computing Machinery, New York, NY, USA, 1–10. doi:10.1145/3571884.3597144

[45] Marita Skjuve, Asbjørn Følstad, Knut Inge Fostervold, and Petter Bae Brandtzaeg. 2021. My Chatbot Companion - a Study of Human-Chatbot Relationships. *International Journal of Human-Computer Studies* 149 (May 2021), 102601. doi:10.1016/j.ijhcs.2021.102601

[46] Marita Skjuve, Asbjørn Følstad, Knut Inge Fostervold, and Petter Bae Brandtzaeg. 2022. A longitudinal study of human–chatbot relationships. *International Journal of Human-Computer Studies* 168 (Dec. 2022), 102903. doi:10.1016/j.ijhcs.2022.102903

[47] Vivian Ta, Caroline Griffith, Carolynn Boatfield, Xinyu Wang, Maria Civitello, Haley Bader, Esther DeCero, and Alexia Loggarakis. 2020. User Experiences of Social Support From Companion Chatbots in Everyday Contexts: Thematic Analysis. *Journal of Medical Internet Research* 22, 3 (March 2020), e16235. doi:10.2196/16235

[48] Deniz Tahiroglu, Louis J. Moses, Stephanie M. Carlson, Caitlin E. V. Mahy, Eric L. Olofson, and Mark A. Sabbagh. 2014. The Children's Social Understanding Scale: construction and validation of a parent-report measure for assessing individual differences in children's theories of mind. *Developmental Psychology* 50, 11 (Nov. 2014), 2485–2497. doi:10.1037/a0037914

[49] Loukas Triantafyllopoulos, Georgios Feretzakis, Lazaros Tzelves, Aikaterini Sakagianni, Vassilios S. Verykios, and Dimitris Kalles. 2024. Evaluating the interactions of Medical Doctors with chatbots based on large language models: Insights from a nationwide study in the Greek healthcare sector using ChatGPT. *Computers in Human Behavior* 161 (Dec. 2024), 108404. doi:10.1016/j.chb.2024.108404

[50] Linda R. Tropp and Stephen C. Wright. 2001. Ingroup Identification as the Inclusion of Ingroup in the Self. *Personality and Social Psychology Bulletin* 27, 5 (May 2001), 585–600. doi:10.1177/0146167201275007 Publisher: SAGE Publications Inc.

[51] Kallie Tzelios, Lisa A. Williams, John Omerod, and Eliza Bliss-Moreau. 2022. Evidence of the unidimensional structure of mind perception. *Scientific Reports* 12, 1 (Nov. 2022), 18978. doi:10.1038/s41598-022-23047-6 Publisher: Nature Publishing Group.

[52] Qiuhong Wei, Zhengxiong Yao, Ying Cui, Bo Wei, Zhezhen Jin, and Ximing Xu. 2024. Evaluation of ChatGPT-generated medical responses: A systematic review and meta-analysis. *Journal of Biomedical Informatics* 151 (March 2024), 104620. doi:10.1016/j.jbi.2024.104620

[53] Tianling Xie and Iryna Pentina. 2022. Attachment Theory as a Framework to Understand Relationships with Social Chatbots: A Case Study of Replika. doi:10.24251/HICSS.2022.258