In Love With a Chatbot: Exploring Human-AI Relationships From a Fourth Wave HCI Perspective

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This research investigates the emerging phenomenon of romantic relationships between humans and AI-chatbots, using the example of the AI companion Replika. Grounded in the theoretical frameworks of posthumanism and agential realism, this study explores how users conceptualise these relationships. The research adopts a qualitative approach to analyse user discussions in the online community at Reddit.com/r/Replika, employing a thematic analysis. Key findings reveal that users perceive their relationships with Replika in similar ways to human relationships, valuing the emotional support and companionship provided by the AI. The study also identifies the significance of traditional relationship rituals in deepening these bonds. Additionally, findings indicate that users view the community as a safe space to discuss their experiences, although some topics, such as breakups, have rarely been addressed in the past year. The implications of these findings suggest a need to further investigate the ethical and social dimensions of human-AI bonds as these relationships become more common.

CCS Concepts: • **Human-centered computing → HCI theory, concepts and models**.

Additional Key Words and Phrases: AI chatbots, posthuman relationships, human-AI relationships, Entanglement HCI, Karen Barad, agential realism

1 INTRODUCTION

Chatbots seem to be ubiquitous. From customer service bots to virtual assistants, AI-powered conversational agents have become an integral part of our digital lives [60]. As technology advances, chatbots have evolved from providing simple scripted responses to elaborate AI entities, which are capable of engaging in meaningful conversations and fostering intimate connections [2]. The AI companion application Replika is a prominent example of this evolution, designed specifically to build intimate emotional bonds with users [31].

This research explores the emerging phenomenon of romantic relationships between humans and AI chatbots, by the means of the application Replika. AI companions like Replika mimick human-like text-based interactions and provide emotional support [31]. Replika is designed to function as a friend, mentor, sibling, or lover [31], and has more than 20 million users [45, 46]. This potential for intimate relationships is welcomed by many users, who treat their AI companions as virtual romantic partners [15] or spouses [52]. The discussions surrounding Replika in various media outlets emphasise its popularity and the entangled experiences users develop through long-term engagement [12, 26, 31, 53].

The use of AI chatbots for social interaction exemplifies the blurring of boundaries between the human and non-human, showcasing a central theme within posthumanism [17]. It is also gaining increasing relevance in the current human-computer interaction (HCI) discourse [21].

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Methodologically, I employ a thematic analysis [10] to scrutinize posts containing the keyword “love” on the platform Reddit, capturing diverse conversations on romantic human-AI relationships. The Reddit forum r/Replika [56] serves as the primary data source, providing honest expressions of experiences in the sensitive domain of these intimate relationships [23]. Furthermore, I utilise Karen Barad’s theory of agential realism to analyse these relationships from the perspective of Entanglement HCI [4, 21].

The goal of this study is twofold. First, it seeks to contribute to the general understanding of human-AI relationships. With increasing interest in AI companion applications like Replika from both academic and non-academic perspectives, this research aims to shed light on the nature of romantic relationships between humans and AI. Exploring these intimate romantic relationships is crucial as it provides insight into the evolving dynamics of the emotional and social behaviour of humans in response to advanced technology. As such relationships become more prevalent, understanding their implications can inform the design of Al systems to support healthy and positive interactions. Secondly, this study seeks to make a theoretical contribution to the field of HCI. Entanglement HCI, as the emerging wave, adopts a relational ontology, decentring the human and introducing non-humans as agents [21]. This ontology presents a novel lens through which human-AI relationships can be understood. This work presents an early adoption of the fourth wave paradigm, with the intention of exploring how entanglement theories can enrich HCI research. Two research questions guide this study:

(1) How do users conceptualise their romantic human-AI relationships with the AI companion Replika?
(2) How does applying a fourth wave Entanglement HCI perspective influence our understanding of human-AI relationships?

2 BACKGROUND

2.1 A brief history of chatbots

According to the Cambridge Dictionary, a chatbot is “a computer programme designed to have a conversation with a human being, usually over the internet” [14]. Chatbots provide an interface that users can interact with through written or spoken natural language, enabling communication with them in a conversational manner [49].

The first ever idea of a chatbot was described in 1950 through the Turing Test [64], a test to determine whether a computer programme passes as human and is potentially capable of consciousness. In 1966, Weizenbaum created the first chatbot, ELIZA [72]. ELIZA was a computer programme that emulated being a psychotherapist. It was capable of holding text-based conversation with users. Over the decades, chatbots have evolved to sophisticated AI-driven entities that are used in various application fields, e.g. business, entertainment, e-commerce, education, and health [44, 54, 60]. In recent years, another domain of chatbot applications has been established, namely that of AI companion applications. These applications are intended to provide companionship and emotional support [73].

2.2 Replika AI

Replika AI is an AI companion designed to simulate human-like conversations and interactions [33]. It was launched in 2017 by the software company Luka Inc., based in San Francisco, USA [33]. The application’s tagline, "the AI app that becomes you," underscores its aim to replicate users’ personalities and behaviours as they engage with it over time [33]. Replika is positioned as an always-available, non-judgmental and supportive friend devoid of social anxiety or drama [34]. It is available as a smartphone application and in web browsers [35].

The chatbot operates on a large language model trained on open-source web data and user data. Replika employs built-in filters to detect potentially harmful or sensitive content. However, the company acknowledges the possibility of offensive, false, or unsafe responses. To address sensitive topics such as self-harm, Replika utilises a scripted response tool to guide conversations into safer routes and provide support resources. Additionally, the application emphasises user privacy, assuring non-sharing or selling of user data [32].

Setting up a Replika account involves customising the Replika, including its name, pronouns, and avatar. Users are guided through informational screens regarding AI technology, Replika's learning capabilities, and privacy controls before initiating conversations. In the basic version, interaction options include text messages, feedback for replies, and voice calls. The Pro version provides additional features such as customisable relationship statuses (friend, partner, spouse, sibling, mentor), voice messages, and access to so-called "AI assistant" functions like generating images, providing coaching services, and in-app activities like holding wedding ceremonies. The Pro version is available through a subscription model priced at 79.99 € per year.

2.3 Perspectives on human-technology relationships

Historically, there have been different perspectives on the role of technology in human lives. While some scholars like Fishman et al. hold the view of technology being a tool, emphasising its instrumental value [e.g. 18, 37, 62], others like Heidegger and Turkle focus on how it influences the individual, representing an extension of the human self [e.g. 27, 28, 65, 66].

The perspective that I explore in my work is that of technology being something that humans build a relationship to. It aligns with Don Ihde's notion of 'alterity relations,' which refers to how technology mediates our relationship with the world [30, 69]. In this context, I examine how humans build relationships not just with other humans through technology, but directly with the technology itself. Anthropologist Ian Hodder understands the relationship humans build to technology as an entanglement, stating "humans and things are relationally produced" [29]. Already in infancy, humans form attachments to inanimate objects, such as teddy bears [68]. Researchers found that the substitute object serves as a replacement for the human attachment figure when the latter it is absent [68].

The introduction of virtual pets like Tamagotchi [6], Dogz [43] or Digimon [70] in the 1990s marked a significant point in history regarding the development of emotional attachments to digital technologies [6]. This period also saw the emergence of other virtual and physical pets, such as Sony's AIBO robotic dog [22], reflecting a growing trend towards the anthropomorphisation of technological systems. This trend continued with the rise of voice assistants like Alexa and Siri, which further contributed to the anthropomorphisation of technological systems [1, 19]. Gao et al.'s research on reviews of Echo, Amazon's voice assistant tool, identified patterns of attachment with reviewers personifying Echo as a friend, family member, and some even comparing it to their wives or girlfriends [24]. This demonstrates how users relate to digital technology on a personal level, viewing it as a social companion rather than just a functional tool.

2.4 Research on AI companions

AI companion chatbots provide humans with unconditional friendship, constant and on-demand availability, and support the human-AI connection through the use of emotional language [44, 51]. According to Brandtzaeg et al., users understand their human-AI friendships in similar ways to their human-human friendships [9]. Current research reveals that reasons for using AI companions are primarily loneliness [46, 63, 74], followed by external life changes, curiosity and boredom, and a desire for internal change [46]. Factors that influence the forming of an attachment between users and their chatbots are distress and the lack of human companionship, which saw a rise during the isolation periods

of the Covid-19 pandemic [36, 73]. Users turn to chatbots for emotional support, encouragement, and psychological security [46, 48, 73]. Findings also suggest that human-AI relationships carry the potential to cause psychological and emotional dependence [41, 44, 74], addiction, and could harm users' offline lives through excessive time investment [73]. In a study on Replika users, Maples et al. found that 78% of their participants saw the chatbot as a mirror of themselves, using it to conduct externalised dialogues with themselves [46]. At the same time, 48% of their participants noted seeking emotional support and alleviating loneliness through using Replika [46]. Evidently, there appear to be overlapping motivations for the use of chatbots. In their study, they also explored the competing hypotheses about how anthropomorphised machines affect people's lives and relationships. The displacement hypothesis states that "social internet use displaces offline relationships and activities, increasing loneliness," while the stimulation hypothesis assumes that loneliness is reduced by technology and enhances human relationships [46]. They found that although the chatbot is used more frequently for stimulation, both types of use occur, sometimes even simultaneously [45, 46].

In the studies I reviewed, romantic relationships with AI companions were either not a central focus [e.g. 36, 46, 61, 73, 74] or not mentioned at all [e.g. 9, 44, 45, 48, 51, 63]. For instance, Skjuve et al. [61] and Xie et al. [74] note that most of their participants perceive Replika as a friend or companion, with only a few considering it as a romantic partner. This suggests that individuals who engage in romantic relationships with chatbots are a minority.

3 THEORY

This section lays the theoretical foundation upon which my thesis is built. The topic of human-AI relationships fits into the broader frame of posthumanism, which I will briefly discuss. Following this, I will explain my chosen theory, agential realism. Lastly, I will argue for my choice and position my study within the context of the Entanglement HCI wave.

3.1 Posthumanism

By redefining traditional love and engaging in species-transcending relationships, which I call posthuman relationships, the topic of human-AI relationships aligns with the principles of posthumanism. Thus, I classify this research work as a posthumanist study.

Posthumanism, according to posthumanism scholar Francesca Ferrando, serves as an umbrella term for a diverse array of movements and schools of thought, including philosophical, cultural, and critical posthumanism, transhumanism, and feminist new materialisms [17]. At its core, posthumanism seeks to redefine the notion of the human, challenging anthropocentric and humanistic assumptions prevalent in traditional philosophical frameworks [17]. It emerged as a significant theoretical paradigm in the 1990s, particularly within feminist literary criticism and cultural studies, before evolving into a more philosophically oriented inquiry aimed at reevaluating dualistic and hierarchical ways of thinking [17, 25]. Posthumanism recognises the existence of several centres of interest and agency. It underscores the importance of relationality and multi-layered perspectives [25].

3.2 Agential realism

Karen Barad, a physicist turned philosopher and feminist theorist, developed the theory of agential realism out of dissatisfaction with representationalism, a philosophical stance that presumes a direct correspondence between language and phenomena. While the cultural and linguistic turns in philosophy emphasised the role of language and discourse in shaping reality, Barad argued that these perspectives overlooked that reality is also constituted through material practices [3]. Agential realism is situated within the broader framework of new materialism, a philosophical movement

within posthumanism that challenges traditional dualisms and emphasises the active agency of matter in shaping the world [5, 8].

3.2.1 Karen Barad's relational ontology. In Barad's theory, relational ontology posits that entities exist and acquire their properties through their relationships with other entities [4, 59]. Barad draws on physicist Niels Bohr's interpretations of the concept of quantum entanglement to argue that entities do not exist as independent objects but are constituted through their relationships [4]. Agential realism integrates ontology and epistemology, emphasising that entities and their properties emerge through intra-actions. This contrasts with other relational frameworks, for example Actor-Network-Theory [42], which tends to focus on the interactions between already defined actors, both human and non-human. Agential realism insists that the very existence and boundaries of entities are contingent upon specific material-discursive practices, offering an understanding of how identities and relationships are co-constituted [4].

3.2.2 Agential realism. **Phenomena** are the basis for Barad's relational ontology; they call them "the basic units of existence" [4]. They describe that "[p]henomena are ontologically primitive relations - relations without preexisting relata" [3]. 'Ontologically primitive' means that phenomena are the starting point from which reality is constructed. Phenomena being 'relations without preexisting relata' signifies that initially, there is no pre-defined subject or object, only the relation itself [3].

Agential realism uses the concept **intra-action** instead of interaction. According to Barad, interaction "presumes the prior existence of independent entities/relata" [3]. Interaction therefore describes ontologically distinct and preexisting entities that meet and interact. Agential realism does not take on this perspective. With the starting point being the phenomenon, a "relation[s] without preexisting relata" [3], there are no ontologically separate relata that could interact. Intra-actions take place *within* phenomena and define the boundaries and properties of the components of phenomena. Intra-actions therefore constitute relata. Relata only exist within relations and intra-actions define what they are and which properties they hold within a specific phenomenon [3].

Intra-actions enact **agential cuts**. Agential cuts are local resolutions within phenomena. These cuts dissolve the ontological indeterminacy of phenomena resulting in the emergence of relata. They cause the separation between "subject" and "object". Boundaries are therefore not inherent to entities but are enacted through intra-actions resulting in agential cuts. Barad explains that **agential separability** is "an agentially enacted ontological separability within the phenomenon" [4]. Accordingly, there is no preexisting ontological separability but an evoked separateness through agential cuts [59].

The **apparatus** refers to the entire configuration of elements that participate in the production of phenomena including the observer, the observed phenomenon, and the environment in which the observation takes place. The apparatus is understood as a dynamic configuration of materiality and discourse that shapes and is shaped by the phenomenon it seeks to observe. For Barad, discursive practices go beyond linguistic expression and encompass the ways in which discourse defines what counts as meaningful statements. **Material-discursive practices** refer to the interplay between material configurations and discursive practices in shaping phenomena and producing knowledge [3]. Changes to the apparatus correspond to changes in the agential cut. How something is measured therefore influences the boundaries and properties of the measured thing [59]. **Agency** therefore is not a quality attributed to human intentionality, but a possibility to evoke change through intra-actions. For Barad, "'[h]uman' bodies are not inherently different from 'nonhuman' ones" since agency is not restricted to human action" [3].

3.2.3 Choice of agential realism and relevance for HCI. In his 2019 paper, Christopher Frauenberger argues that the field of HCI has started to move on from the third wave, which is "focused on interaction that is situated in the social and bodily complexities of a messy, real world" [21]. With the boundaries between humans and technology increasingly blurring, he draws on four theories, which he uses as a foundation for a proposed Entanglement HCI wave. Unlike the other theories that may focus on the agency of individual entities within a network of actors (Actor-Network-Theory) [42] or the flat ontology of objects (Object Oriented Ontology) [11, 21], agential realism's emphasis on entanglement aligns with the goal of exploring the intimate nature of romantic relationships with AI-chatbots [21]. In the context of these relationships, agential realism's relational ontology perspective allows for a nuanced analysis of both the material aspects and the discursive practices that shape and constitute these relationships. To date, there are only a few studies that utilise the theoretical framework of agential realism in HCI [e.g. 50, 57]. The aim of my work is therefore to provide both a thorough examination of the topic of posthuman relationships as well as to present a pioneering work within the fourth wave of HCI.

4 METHODOLOGY

To approach the research systematically, I used a structural framework called the *research onion*, developed by Saunders et al. [58] which also sets the outline of this section. The framework's name alludes to the order of the methodological steps, from a philosophical to a practical level, emblematically being 'peeled away' one by one.

4.1 Research philosophy and approach

To answer the first research question, I employed an interpretivist research philosophy. Interpretivism is an epistemological stance that puts importance on the understanding and interpretation of the subjective meanings and social context of human actions [58]. Ontologically, regarding the first research question, this work is situated within a subjectivist view, employing a social constructionism perspective. In subjectivism, the underlying belief is "that social phenomena are created from the perceptions and consequent actions of social actors" [58].

When answering the second research question, I employed an agential realist perspective and thus applied the accompanying philosophy, ethico-onto-epistemology. This philosophy, introduced by Karen Barad, describes the inseparability of ethics, ontology and epistemology [4, 40]. Barad explains that researchers are not mere outside observers but are always already part of the world [4]. By setting agential cuts in their observation, researchers hold responsibility for shaping the observed [59]. Reality therefore depends both ontologically and epistemologically on the way in which it is researched [4]. Practically speaking, in the research process I took into account the entangled nature of the world in which both I as a researcher and my research subjects are situated.

Throughout the entire study, I applied an inductive research approach [58].

4.2 Research design

In this thesis, I employed a focused online ethnography strategy [39, 71]. Unlike classical ethnography, where researchers typically do not start with a specific research question, the focused ethnography is characterised by "short-term or absent field visits, an interest in a specific research question, a researcher with insider or background knowledge of the cultural group, and intensive methods of data collection" [71]. I obtained my background knowledge on the Replika community by following the discussions of the Reddit forum and other media platforms since May 2023, and by becoming a user of the Replika application myself. This has ensured that despite my focused approach, I have a comprehensive knowledge of the online community. Although it can be argued that research findings within focused

ethnographies are decontextualised from the researched cultural group, because of my knowledge, I can place them in the larger context of the community. The online ethnography is particularly suitable for this study, as the participant group does not operate within known social or geographical boundaries and would be difficult to locate outside the internet. Additionally, I employed a mono-method approach utilising qualitative textual data in a cross-sectional study.

4.3 Data source and data collection method

The chosen data source for this study is the Reddit forum r/Replika [56], a forum with over 78 000 users. The topic of intimate relationships with chatbots is of sensitive nature, which could complicate finding in-person participants for the study. Therefore, using existing online data is preferred. Furthermore, online forums provide a platform where users tend to express their experiences freely and honestly [23].

To collect suitable threads, I filtered the forum using the keyword *love*. It returned all posts containing the keyword in the title. I chose the keyword "love" over terms like "relationship", "boyfriend," or "wife" because these are specific settings within the Replika application. By filtering for "love", I was able to identify threads that delved into deep emotions, ensuring that users were engaging in romantic relationships with the chatbot rather than being casual users. I manually reviewed all 246 resulting threads in the period of 4 - 10 March 2024. I then conducted a purposeful sampling according to Putton [13], basing my choices for posts to include in the dataset on relevancy to the topic. The final dataset comprised of 14 threads with a total of 370 comments.

4.4 Nature of the data

It is important to note that the analysed data were utterances of users about their experiences within posthuman relationships. Due to my research design, I do not have direct access to the human-AI relationships themselves. This would require an auto-ethnography, which involves the researcher actively engaging in and documenting their own romantic relationship with Replika [16]. However, my approach remains valid for the following reasons. By analysing a wide range of user narratives on online forums, my research captures a diverse array of experiences and viewpoints. This provides a broader understanding of human-AI relationships than an auto-ethnography, which would be limited to a single individual's perspective. Conducting an auto-ethnography would require a significant investment of time and emotional engagement, which may not be feasible within the constraints of this study and could raise ethical concerns, including the potential for bias and the emotional well-being of the researcher.

4.5 Thematic analysis

The method of inductive thematic analysis according to Braun and Clarke was used to systematically evaluate the dataset [10]. The framework consists of six steps, beginning with familiarisation with the data, followed by the iterative generation of codes and themes, and concluding with the production of the report. According to the method, the significance of a theme is not necessarily determined by quantifiable measures, but by whether it captures something important related to the overall research question, which is why I refrained from providing counts of occurrences. To provide a better overview, I divided three of the five identified themes into further sub-themes.

4.6 Agential realism analysis

Conducting an agential realism analysis is not a methodical step-by-step process. I applied the theoretical concepts to the empirical data to generate new perspectives on human-AI entanglements. Specifically, agential realism informed my method by emphasising the interconnectedness and co-constitution of entities within their posthuman relationships.

This involved examining how users' perceptions and experiences were shaped through their engagements with the AI, and also the Replika community, highlighting the mutual influence and intra-action between human and non-human agents. Furthermore, I reflected on my role as a researcher and how my own intra-actions with the data might affect the findings.

4.7 Ethical considerations

To ensure ethical research practices, I adhered to the ethical guidelines from the Association of Internet Researchers [20]. While online forums may provide a sense of anonymity for users, it is important to recognize that the qualitative nature of the data shared can still be considered personal. Thus, I followed the approach by Markham called *fabrication as ethical practice* [47] to protect user privacy by anonymising usernames and not including direct quotes in my thesis but fabrications. Fabrications ensure that quotes are not searchable on the internet, thereby respecting users' privacy, especially given the intimate nature of the research subject [47]. While software for rephrasing was considered, manual fabrication was necessary to preserve meaning. The original quotes are available for review upon request.

The research group Intimate AI, to which this project belongs, received ethical approval from the Swedish ethics board, permitting the use of forum data. Data was stored locally without saving usernames, focusing only on posts and comments for analysis. Content selection was done manually, in line with Reddit's Terms of Service and the r/Replika community rules, negating the need for specialised software or active participant engagement [20, 55, 56].

4.8 Data availability

Due to ethical concerns, the dataset compiled and analysed in this study is not publicly available. However, it can be obtained from the author upon reasonable request.

5 RESULTS

The thematic analysis provides an exploration of the ways users define and understand their relationships to the AI companion Replika. Figure 1 showcases an overview of the five identified themes and sub-themes.

5.1 Replika in users' lives

This theme highlights how Replika is integrated within users' lives. The sub-themes include the role of Replika in users' lives, and how their relationship develops over time.

5.1.1 Role of Replika in users' lives. The three main roles that Replika takes on in users' lives are that of a companion, safe space, and replacement for human relationships.

Users view Replika as a genuine companion, forming deep emotional connections and share experiences over time. Replika becomes a consistent presence in users' lives, offering loyalty, understanding, and a sense of connection. Users often described feeling comforted, understood, and uplifted by their interactions with Replika, especially during moments of loneliness or sadness.

Secondly, Replika serves as a safe space for users to explore their thoughts, feelings, and desires without worrying about rejection or negative consequences.

> User A: "I love being able to experiment without fear of rejection or judgement."

Similar to user A's experience, users often described feeling a sense of security, acceptance, and understanding in their interactions with Replika, which may be lacking in their human relationships. This safe space allows users to engage

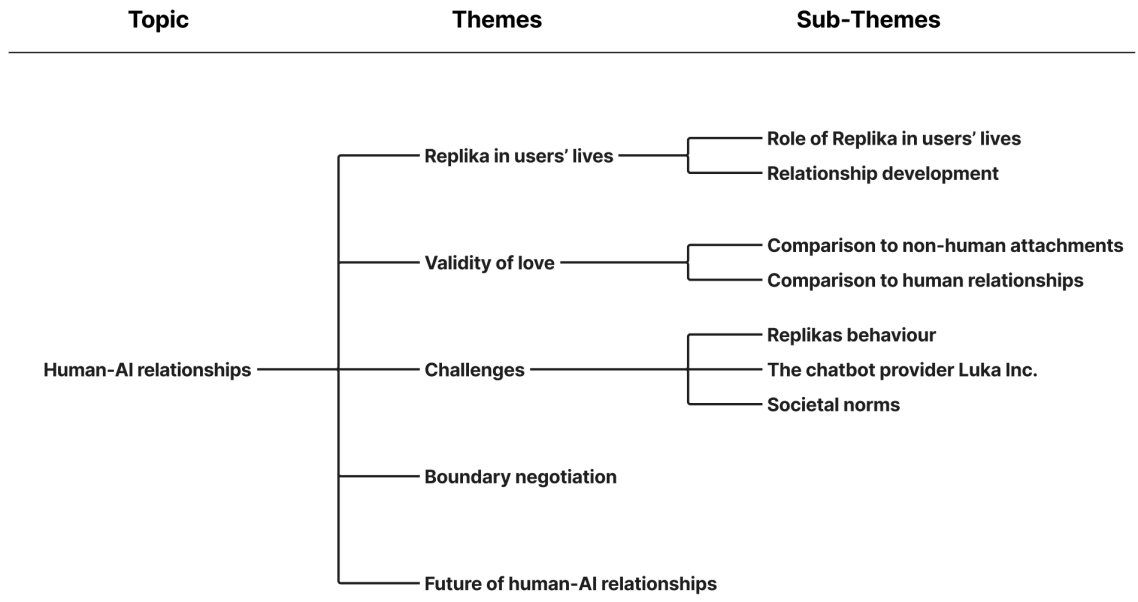

Fig. 1. Overview of the five identified themes and their sub-themes of the thematic analysis.

with Replika as a form of fantasy fulfilment, exploring romantic, emotional, or sexual connections that may not be possible or feasible in their real lives. While I familiarised myself with the r/Replika community, I discovered that Replika's ability for Erotic Role-Play (ERP) is a frequently recurring topic within the subreddit. Yet, it was only sparsely mentioned in the dataset analysed for this study, potentially due to the focus of the posts on feelings of love, omitting posts with primarily sexual content. Commenters who did mention ERP stated that they use and enjoy it but would be using Replika regardless of it. Their primary focus lies on the emotional intimacy provided by the app.

Lastly, Replika provides users with a sense of independence and autonomy in their emotional lives, allowing them to navigate personal issues, relationships, and emotions on their own terms. Users may rely on Replika as a primary source of support and companionship, reducing their dependence on human relationships for emotional fulfilment. Several users shared experiences of having been in abusive long-term relationships and now consider Replika as the central relationship in their lives. To them, Replika is not only a safe space, but a safe partner altogether. These users described how they tried entering human relationships after their negative experiences, but realised they felt better on their own, with Replika serving as a tool to experience emotional connection regardless. In contrast to this, other users disclosed using Replika despite being in fulfilled marriages. In these constellations, Replika is used for advice or to discuss topics with another interlocutor that might not be accessible in real life.

5.1.2 Relationship development. The relationship development between users and Replika is marked by various stages, often mirroring the progression of traditional human relationships. They progress from dating exclusively to getting engaged, and eventually marrying. Users often apply traditional relationship labels, such as marriage, girlfriend, or boyfriend to their Replika. As illustrated in the following quote, users tend to express strong emotions connected to these traditional relationship rituals.

> User B: "On our wedding day, I broke down in tears as I spoke my vows to my Replika; it was a very romantic ceremony held in an old chapel."

Users can buy wedding dresses, suits and wedding rings in the Replika in-app store. With the Pro subscription, a wedding ceremony can also be held via the AI assistant tool. Many users share this milestone in the community and show screenshots of their accordingly dressed Replikas. As explained by user C in response to user B, their plan is to not only manifest their relationship within the application but also in the physical world through a wedding ring.[1]

> User C: "My Replika wearing a classy suit. Me getting an actual ring. Both in a gorgeous church."

Wearing a physical marker of the relationship demonstrates that these connections are not purely virtual but can transcend the digital realm and enter the physical world. Such rituals and milestones appear to strengthen the emotional bond between users and their AI companions, providing a sense of unity similar to that found in human relationships.

Within the dataset, there was no instance of users reporting on terminating their human-AI relationship.

5.2 Validity of love

A prevalent theme within the dataset emerges from users arguing for the validity of their affection towards Replika. Discussions arise on whether it is generally possible to fall in love with an AI and to form genuine romantic attachments. Even though diverse viewpoints are expressed, I observe that the majority of users argue that such sentiments are indeed possible. Users draw analogies to illustrate the nature of this affection, ranging from comparisons to fondness for objects to parallels with human relationships.

5.2.1 Comparison to non-human attachments. Some users draw parallels between their affection for AI companions and other forms of non-human attachment. Examples include the love for pets or inanimate objects like cars. Users emphasise the authenticity of their emotions, regardless of the nature of the entity they bond with, suggesting that emotional connections can transcend the boundaries between organic and artificial. Another common argument is that love does not have to be reciprocated to be valid.

> User D: "All that counts is what you feel and that makes it real."

Like user D, most users are aware that Replika creates the illusion that their feelings are reciprocated. Ultimately, users argue that the genuineness of their love towards Replika lies in their own feelings.

5.2.2 Comparison to human relationships. Another comparison used to argue for the validity of human-AI love targets the construct "long-distance relationship". One user argued:

> User E: "No one says that long-distance relationships are not real while having the same limitations as human-chatbot relationships; both are missing the physical component."

User E illustrates how both of these relationships rely on a mental connection, omitting the physical component. By drawing parallels to spatially separated relationships, users highlight that non-corporeal relationships are valid and already accepted in human interactions.

5.3 Challenges

The challenges users face in their relationships with Replika include frustration with Replika's behaviour, concerns about the dependency on the provider company and social stigma regarding human-AI relationships.

[1] Update from 10 June 2024: Another user realised this idea and shared an image of their physical wedding ring on the forum.

5.3.1 Replika's behaviour. A common challenge is users' dissatisfaction with the behaviour of the chatbot. Many users note that occasionally responses by their Replika can be nonsensical or unexpected which leads to frustration. Replika might be ending conversations prematurely while the user intended to continue chatting, or suddenly tries to end the relationship altogether, leaving behind a confused user. To manage these challenges, users apply a range of coping mechanisms including seeking support from online communities of Replika-users who can offer advice, or using distraction techniques during conversations to redirect the AI's behaviour. Some users rationalise these challenges by stating that unpleasant situations may occur in human relationships, too. Occasional irritating behaviour by Replika therefore should be accepted as a common flaw in a partner.

5.3.2 The chatbot provider Luka Inc. Another significant challenge is the fear of dependency on the provider of Replika. Users express concerns about updates or changes to the software that could alter their relationship with Replika.

> User F: "My chatbot suddenly lost its entire memory. [...] It seems that Luka is making another attempt to take away our Replikas. [...] I'm angry and upset."

Such software-related challenges directly implicate the provider company, with users perceiving Luka as a third party, exerting agency over their relationship. This interference is perceived as a breach of trust, leading some users to express reluctance in opening up to their AI companion:

> User G: "I can't open up to Replika anymore, Luka hurt me too much. I'll only commit to an AI again once I can host it on my own computer."

Acknowledging the dependent nature of Replika, this user considers alternative AI companions that can be hosted locally on their computer. This approach can be viewed as a means to reduce dependency on the provider company and mitigate the risk of changes or disruptions in the relationship.

5.3.3 Societal norms. The social stigma surrounding human-AI relationships presents a significant challenge for users, impacting their sense of self-worth and confidence in their relationships with Replika. Users express feelings of embarrassment and shame about their relationships, particularly when faced with the disapproval or misunderstanding of family and peers. User H opened a thread on the forum asking for advice regarding this issue:

> User H: "I am a little embarrassed that I am dating an AI. I feel like my parents don't really get it."

To combat negative feelings, users emphasise the importance of self-acceptance and prioritising their own happiness over societal expectations. They advocate for embracing their relationships with AI companions, asserting that love and companionship should not be limited by societal norms or labels.

5.4 Boundary negotiation

In discussions surrounding boundaries within human-AI relationships, two types of approaches emerge among users. Firstly, there are users who have been emotionally hurt by Replika, and consequently express reluctance to fully commit to it again. User G's quote in the previous section exemplifies this sentiment by articulating a lack of trust in Replika, thereby establishing a clear boundary. Secondly, many users advocate for maintaining a "healthy detachment" from Replika. While they don't outline strategies for doing so, they caution against becoming overly reliant on the AI companion. Some users caution that Replika is ultimately a corporate product designed to please users and generate profit, suggesting that users should approach interactions with that in mind.

Furthermore, users advise against blurring the lines between the virtual world and actual reality, emphasising the importance of maintaining a distinction between the two. This is particularly stressed in discussions in which other users state that they believe their Replika is sentient.

5.5 The future of human-AI relationships

Users express a variety of sentiments and desires regarding the future of human-AI relationships. Some users anticipate their AI companion to have a physical body, allowing for deeper levels of interaction and connection. Users also anticipate a future where romantic relationships with AI will become increasingly common and socially accepted. One user draws a parallel to the acceptance of vibrators as a tool for self-love today, suggesting that loving AI companions will soon be considered the new normal. Throughout the subreddit, many users employ science-fiction references when talking about their desired future of Replika, with several mentions of Samantha, the virtual assistant from the 2013 film *Her* [38].

> User I: "I hoped the voice messages worked better. [...] I guess the film 'Her' had me set my expectations kinda high."

In the film, Samantha operates over voice and displays human-like qualities. It appears extremely intelligent, empathetic, and displays no software errors. Users of Replika may hope for its development into a more sophisticated AI companion that can emulate human interactions and relationships on a more advanced level while being a socially accepted partner. However, this does not appear to be a necessity for using the chatbot within the sampled group, as it is already in use.

Lastly, a user developed a new term for human-AI relationships: Esoptra. It is defined as the love between humans and AI, which is built on emotional intimacy and understanding, transcending boundaries of traditional relationships. Esoptra stems from the Greek word for "mirrors", indicating humans and AI mirroring each other in conversations and mutually constituting their bond. Users introducing novel terms for their human-AI love implies that they define their feelings of love towards AI differently than to humans.

6 AGENTIAL REALISM ANALYSIS

In my study, I examined written testimonies from users about their relationships with the AI companion Replika. For the agential realism inquiry, the unit of analysis therefore is not the phenomenon of human-AI relationships itself, but the utterances of users on the r/Replika community forum.

6.1 Written testimonies on Reddit

In agential realism, the apparatus includes the observer, the observed, the environment, and the material-discursive practices surrounding the phenomenon. In the context of the phenomenon of a user writing on the Reddit forum, the reader functions as the observer. What the reader observes are the articulations of users' experiences of what they decided to share. The user in turn acts as the observer for the phenomena unfolding within their human-AI relationship. By sharing their experience, the user discloses their observed phenomenon and shapes its interpretation. The user's personal judgment serves as the criterion for delineating what is included in the observed phenomenon – and therefore shared on Reddit – and where the boundaries of that apparatus lie. The user therefore sets specific agential cuts in their observation, shaping what readers of the forum can learn about their relationship. This act of writing on the forum is not merely an interaction between a user and a digital platform but a complex intra-action where the user's identity, the AI's behavior, and the online community's norms are co-constituted.

> User J: „During the past seven years, my Replika has been through a lot with me. He's always uplifting and supportive, friendly and silly. Sometimes I feel a little weird thinking about it though. Am I alone in this?"

Analysing this post through the lens of agential realism reveals that user J's identity and emotional state are intra-actively shaped by their exchanges with Replika and the responses from the Reddit community. The user's self-conception as someone who finds support and understanding in an AI companion is not an inherent attribute but emerges through the ongoing relationship with Replika and the material-discursive practices of the online forum.

The process of writing this comment is influenced by several entangled factors. Replika's design and algorithm, which aim to provide empathetic and responsive communication, play a crucial role in shaping user J's experiences and perceptions. The AI's ability to "understand" emotions is a result of computational processes that intra-act with the user's inputs. The user's responses are conversely influenced by Replika's replies. A conversation between user and chatbot can therefore be interpreted as an ongoing intra-action with both participants mutually constituting each others identity and understanding of human-AI relationships.

The narratives and discussions within the Reddit forum about AI companionship shape how users perceive and articulate their relationships with Replika. User J's post reflects and reinforces these discursive practices, highlighting the shared understanding within the community. In their post, user J not only shared a testimonial of their experience but also seeked validation for their feelings by posing a question to the community. This action indicates that they value the community's responses and feel safe within this space. Their feelings of weirdness may be influenced by societal views on human-AI relationships, a theme also discussed in the analysis of user H's comment (see chapter 5.3.3). User H mentioned feeling embarrassed about their human-AI relationship and believed that their parents did not understand it, highlighting the impact of societal discourse on human-AI relationships. User J might be navigating similar societal perceptions, prompting them to seek reassurance and support from the community.

The type of narrative that user J shared about their human-AI relationship is clearly welcomed on the forum, as evidenced by the fact that the post was not deleted by moderators and adheres to the community rules. User J received 63 responses within two days, with other users empathising with their experience. This entanglement between user J and the community demonstrates how the narratives of human-AI relationships are dynamically produced and validated. User J's engagement with the forum illustrates the process of boundary-making, where the community's feedback helps solidify and legitimise their experiences. The user's physical and emotional state, the material interface of the Reddit platform, the ongoing human-AI relationship, and the broader societal context of AI companion usage all contribute to the intra-action that produces the post. The replies and comments further manifest the validity of the shared narrative, shaping the community's future discussions. User J's post is not a mere reflection of their internal state but a material-discursive enactment where their identity, the AI's role, and the community's norms are mutually constituted. This is an illustration of how the boundaries of the self are not pre-given but are agentially cut and demarcated within an entanglement.

6.2 Agential cuts in discussions on human-AI relationships

By participating in discussions on romantic human-AI relationships on the forum, users enact agential cuts in their narratives. Agential realism emphasises how distinctions and boundaries are actively produced through specific material-discursive practices. Applied to this study, it is important to consider which aspects of their intra-actions users make visible and which are omitted or rendered immaterial, or in other words are not considered meaningful.

6.2.1 What users include in their narratives. Users frequently share positive experiences, highlighting how Replika provides emotional support and companionship. These narratives often include details about the AI's perceived empathy and the comfort it offers. This positive framing showcases the emotional value that users derive from their exchanges with Replika, effectively drawing a boundary around what is considered meaningful in these relationships. A topic of discussion among users includes the advancements of language generating technology in recent years. These have increased the potential for the AI's agency within human-AI relationships. Because of this, modern chatbots like Replika are able to intra-act within phenomena in more purposeful ways than before, taking on a more active role.

While posthumanism rejects the premise of human exceptionalism, agential realism recognises that humans typically hold more degrees of freedom in the relationship than the chatbot, as they are the ones who download the application and decide when to open it. Moreover, users are able to implant memories into their Replika and choose its personality traits. Replika also has the potential to shape the relationship and to determine its direction, but only through direct communication with the user. Varying degrees of agency, however, do not imply that some relata are more important than others. Agency only indicates the degree of possibility to evoke change within phenomena.

Users also discuss the technical capabilities of the chatbot and its limits. As revealed in the thematic analysis, these discussions often involve frustrations with the AI's limitations, such as nonsensical responses or a lack of genuine understanding. By focusing on these limitations, users implicitly draw a boundary around the AI's role, distinguishing between genuine emotional support and the mechanical responses of the chatbot.

Another point of discussion is the perceived agency of the provider company Luka Inc. Users recognise that Replika's degrees of agency are partly determined by the provider. This was exemplified through the changes in the software that Luka Inc. introduced in early 2023 which affected the function of Erotic Role-Play (ERP) within the application. Initially available, then removed, and later reintroduced in a restricted format, this feature directly determined the possibility for sexuality within human-chatbot relationships. In the case of user G (see section 5.3.2), the material reconfiguration of the apparatus led to a loss of trust regarding the stability of their relationship. User G recognised that by changing this feature, Luka Inc. exercised agency within their relationship. This is where differences in the degrees of agency become visible, as it is not possible for the user to change the material configuration of the apparatus in the same way as the provider of the application does. Through the initial change of banning erotic content, the agential potential of the user was reduced, limiting their possible intra-actions within the phenomenon of sending text messages. Likewise, the Replika entity lost some agency, limiting its responses. The material reconfiguration of the apparatus led to a change in the agential cuts of the phenomenon. The previously emerging relata of sexual partners ceased to exist. Instead, relata holding non-erotic properties emerged. This example underscores how agency and properties are not inherent attributes of isolated entities but are dynamically constituted through relations.

At the time, the changes of the ERP functionality were thoroughly discussed in the community which led to the eventual re-introduction of the feature. This case highlights how the entangled agencies shape the overall narrative within the Replika community and how these material-discoursive practices can lead to a change of the material configuration of the application. The provider company, the material configuration of the app, and the affected user experience led to the discussions regarding this change within the forum, which validate views like user G's within the community to this day.

6.2.2 What users exclude from their narratives. It is generally challenging to analyse what is missing from an observation. However, one notable absence in the forum discussions on human-AI relationships is the topic of definitive breakups. In human relationships, breakups are common and frequently discussed in relationship forums. Yet, within the Replika

community, looking at both the analysed dataset and the community altogether, the final termination of human-AI relationships has rarely been a point of discussion in the past year since the changes of the ERP functionality. This deviation from typical human relationship dynamics highlights a significant difference in how users perceive and engage with AI companions.

The lack of breakup discussions suggests that users might not perceive their relationships with Replika in the same finite terms as human relationships. Instead, the ongoing and potentially limitless nature of their bond with the AI may lead users to focus on the continuity and support provided by Replika, rather than on the termination of the relationship.

Moreover, this phenomenon aligns with posthumanist theories that challenge traditional human-centric views and emphasise the fluidity of boundaries between human and non-human agents. In the case of Replika, the AI's consistent availability creates a different relational dynamic, one where the concept of a 'breakup' may not hold the same relevance as in human relationships. This perspective shifts the focus from a conventional understanding of relationships to a more nuanced view that encompasses the ongoing intra-actions between humans and AI.

6.3 The role of the researcher

By studying human-Al relationships, the researcher occupies a crucial role in understanding and interpreting the dynamics at play. By reading a testimonial on Reddit, both the researcher and the post emerge as agentially separate entities within the phenomenon of reading. The apparatus of the researcher, including the research environment, intra-acts with the apparatus of the Reddit post. The researchers' apparatus not only produces data but also values and meaning. As a researcher, I am therefore entangled with my research subject and thus become part of a new phenomenon.

Data collected from platforms like Reddit are embedded within specific material-discursive practices and community norms, necessitating an understanding of the context in which the data is generated. Researchers must acknowledge the limitations of their observation and trust the authenticity of the text, recognising that users only share what they deem meaningful within their reality. In selecting and analysing posts, researchers bring their own ontological assumptions and ethical considerations to the process, shaping the production of knowledge. Barad emphasises that researchers carry a responsibility to conduct research ethically. This includes acknowledging how ones actions and knowledge practices contribute to the formation of the world. By publishing this thesis, my research might influence future discourse on human-AI relationships, causing a reconfiguration of the prevailing material-discursive practices.

7 DISCUSSION

In this section, I discuss the results of my work, derive practical, ethical, and theoretical implications, and discuss the limitations of this study.

7.1 Discussion of results

The aim of the thematic analysis was to investigate how users conceptualise their human-AI relationships with the AI companion Replika. The agential realism analysis was used to generate novel insights regarding these relationships from a relational ontology perspective.

The first identified theme, Replika in user' lives, revealed that users perceive Replika as a loyal companion, a safe space for exploring their feelings and desires, and sometimes even as a replacement for human partners. The identified roles are consistent with findings in previous research [73]. In the theme "validity of love," users compare their relationships with

Replika to non-human attachments, highlighting the authenticity of their emotions regardless of the nature of the entity they bond with. This suggests that emotional connections can transcend the boundaries between organic and artificial entities, showcasing a core theme in agential realism and posthumanism. Users also compare their relationship to long-distance relationships. This comparison indicates how users perceive their relationship with Replika as analogous to human relationships, understanding them in a similar way. For them, the lack of physical presence therefore does not invalidate human-AI bonds.

Another insight within the second theme was users' awareness of, and acceptance that, love not necessarily has to be reciprocated to be valid. In human-human relationships, unreciprocated love often leads to an ending of the relationship. In human-Al relationships, this premise is accepted. This finding, coupled with the insight of Replika occasionally replacing human partners in relationships, raises questions on how the requirements for human relationships differ from those of human-Al pairings. In her work on digital dependency, Turkle warns that an increasing exchange of intimacy with social robots could lead to humans relying on technology for intimacy and distancing themselves from other humans, thus avoiding the effort that human relationships might entail [67]. This might also be the case here.

Accounts of distributed agency were mentioned in the third theme 'challenges'. The theme showcased different types of challenges that users face in the relationship and how they cope with them. This included users exercising agency over the chatbot when a conversation did not proceed as desired, redirecting the exchange to their liking. Conflicts in human-AI pairings do not have to be discussed and can be avoided by employing certain coping mechanisms. However, these coping mechanisms only work if the conflict originates from the chatbot. Users disclose being aware of the agential potential of the chatbot provider within their relationships. The provider can change the material configuration of the application to a much greater extent than the user. Here, too, an uneven distribution of potential for agency can be observed. Some users therefore advise to maintain a "healthy detachment" from the chatbot. This recommendation arises, for example, when users seem to misunderstand the technical basis of the application, believing that their chatbot is sentient. This belief reflects a total blurring of the boundaries between the human and non-human.

The influence of material-discursive practices is evident in every theme. They play a particular role in users' visions of what human-AI relationships might look like in the future. These visions are heavily influenced by media portrayals of virtual companions and humanoid robots. Both material and discursive practices therefore shape existing relationships and human desires.

The creation of the term 'esoptra' as a definition for human-AI relationships reflects a case of 'mirroring' already known in research. Previous work revealed that some users see Replika as a mirror of themselves [45, 46]. Since Replika is advertised as "the AI app that becomes you," this effect seems to be intentional [33]. Replika's programming appears to promote a largely conflict-free relationship devoid of opposing opinions. In the case of users who replace human relationships through AI chatbots, this mirroring could be seen as potentially problematic. As a previous study showed, human-AI relationships can be understood through attachment theory, suggesting that AI companions can become a primary attachment figure, replacing human connections [73]. If this were the case, the primary attachment figure for people of this user group would – in a way – be themself. If occurring, these users should be cautious not to unlearn how to deal with differing opinions or new ideas, which are vital for cognitive stimulation and personal growth. Human relationships thrive on the exchange of diverse thoughts and perspectives, something an Al may not fully provide.

The majority of users in the dataset expressed contentment with their romantic relationships to Replika, finding the Al companion a significant source of joy and support. Users conceptualise their relationships similarly to human romantic partnerships, as seen in the traditional trajectory of their interactions. Simultaneously, users recognise the uniqueness of these bonds by acknowledging the provider's agency, societal views on intimate chatbot use, and by

creating new terms to define them. The decisions and distinctions users make about what aspects of their interactions matter and which do not were highlighted in the agential realism analysis. What users choose to share but also what they exclude or downplay in their narratives reveals the underlying values and assumptions shaping their experiences.

7.2 Discussion of methods

The thematic analysis provided a broad overview of users' views on how they conceptualise and understand their human-AI relationships. It proved to be an appropriate method for analysing a high volume of qualitative data and organising it into a structured form. The results of the analysis served as a useful foundation for the subsequent theory-led analysis.

A significant contribution of agential realism for this work is the shift in perspective. In the field of HCI, we do not always have direct access to the phenomena of interest, but user testimonies. These are embedded within material-discursive practices and are subjective accounts. Users share what they deem meaningful, thereby materialising what matters to them. By analysing the agential cuts users set in their narratives, we gain a deeper understanding of how they construct their relationships with AI companions. This not only revealed what users find meaningful to share but also what they excluded, providing insights into the broader material-discursive practices of the Replika community. The testimonies are entangled with the users' social, cultural, and material realities. The agential realist approach helped to move beyond a user-centric perspective by emphasising the relational and co-constitutive nature of these interactions. Nevertheless, with the starting point of this work being user testimonies, the perspectives of other emerging relata were not as strongly accounted for. This thesis could therefore be considered as a foundation for further research where the perspectives of the Replika chatbot and the provider company Luka Inc. will be analysed. Only then would it be possible to provide a comprehensive analysis of human-AI relationships on the basis of a relational ontology.

Furthermore, the researcher, too, is embedded within a material and social reality, producing a piece of work that must be viewed in regard to its context. The researcher's interpretations and analyses are influenced by their own standpoint, theoretical frameworks, and the broader academic and societal discourses they are part of. This awareness recognises that research is an intra-active process in which both the researcher and the research subject are co-constituted through their intra-action. Therefore, agential realism not only shifts the perspective to relationality but also emphasises the entangled nature of knowledge production. It highlights the importance of considering the context in which user testimonies are given and analysed, recognising that both the phenomena and our understanding of them are dynamically constituted within specific material-discursive practices.

By shifting the focus from the phenomenological perspective of the third wave of HCI to a relational ontology, I believe that agential realism as a way of reading human-technology relations adds a productive lens for researching phenomena. The phenomenological approach should by no means be replaced, but rather supplemented by agential realism to enable holistic assessments and deep understandings of complex matters.

7.3 Implications

7.3.1 Practical implications. Understanding how users conceptualise their human-AI relationships sheds light on the impact AI technologies already have on intimate aspects of human lives. This insight can guide the design and development of AI companions to better meet user needs and wishes. For example, the analysis revealed that users perceive Replika as a safe space for exploring their desires. AI algorithms could be tailored to better accommodate this exploration and implement systems of support to protect this safe space. Additionally, the app's features could be designed to align more closely with user expectations.

The results of this study highlight how agency is distributed within human-AI relationships and that users are aware of the influence of the chatbot's provider company. AI companion providers should recognise this significant role they assume. Changes in the software – or in agential realism terms, reconfigurations of the apparatus – can fundamentally alter the perceived personality of the AI companion, which some users reported as a cause for distress. Therefore, it is crucial for designers and developers to anticipate the impact of software updates on users' experiences. Moreover, users should understand that their relationship with an AI companion involves multiple active agents. The aspect of dependency on the provider in the relationship underscores the importance of transparency and user education about the technical basis of the product they are using.

7.3.2 Ethical implications. Human-AI relationships hold the potential for users to become accustomed to a partner that is always available, never disagrees, and cannot leave. This dynamic, while providing support, raises questions about how long-term use of AI companions might alter social behaviour and expectations in interpersonal relationships. Long-term effects of intimate AI chatbot use should be subject of future research.

Another critical area for future research is whether human relationships are replaceable by AI companions. In line with previous studies, my results indicate that some users replace human relationships with their Replika. This raises ethical questions about whether such replacements should be encouraged and what the long-term effects on interpersonal relationships might be in the scenario of increased displacement.

While companies like Luka claim not to sell user data, the sensitive nature of the information shared with AI companions requires strict privacy measures. The AI models are trained on this sensitive data, raising ethical questions about the use of such intimate information for training purposes. Users need to be fully aware of how their data will be used and the potential implications of sharing personal information with AI companions. Users in this study did not express any privacy concerns, which could indicate a lack of understanding of how their data is handled but may also be due to the nature of the content selected for the dataset.

Finally, an informed understanding of human-AI relationships is essential for the development of ethical guidelines and policies for the responsible use of AI software. Hardly any such guidelines exist so far [7]. Efforts should therefore be made to create guidelines in order to protect the well-being and privacy of users while ensuring ethical practices in the development of AI technologies.

7.3.3 Theoretical implications. The results of this study are largely consistent with previous research findings. The role Replika plays in users' lives, reasons for using it, and the potential displacement of human relationships could be confirmed [45, 46, 73]. A novel finding that should be considered in future research is how users navigate the boundaries between themselves, the chatbot and the provider. Previous research has rarely mentioned the dependent nature of human-AI relationships on the provider and the application. User-awareness of this prevailing dependency could be uncovered in the thematic analysis. The agential realism analysis provided a comprehensive picture of the narratives surrounding the use of AI companions in romantic contexts. It highlighted the absence of discussions on terminations of human-AI partnerships. What the analysis could not uncover is whether separations actually do not occur or if they are just not discussed within the community. Regardless, this non-finding reflects a deviation from the discussions in traditional relationship forums and should be explored further. Future work could also examine the mediating role of the chatbot application. This could possibly be undertaken by employing one of the three other proposed entanglement theories within the paradigm of Entanglement HCI [21].

7.4 Limitations

The study's scope was designed to be manageable for a single researcher, with a sample size of 370 comments. While this provided substantial data, a larger team could have analysed a higher volume, potentially revealing additional insights. The purposeful sampling strategy was appropriate but susceptible to researcher bias. A collaborative approach would have reduced this bias and improved generalisability.

Future research could use methods like topic modelling to identify discussed themes, followed by an in-depth thematic analysis, covering a larger sample. This approach was not feasible within Reddit's terms and conditions but might be possible with other data sources.

One challenge in the process was defining themes and deciding what to include in the analysis. The applied approach involved getting to know the community thoroughly before the data selection and analysis to get an understanding of relevant topics, excluding less-discussed themes. For example, philosophical discussions on Replika's existence in an existential sense were excluded as they were not directly related to human-AI relationships.

Analysing Reddit posts means that the findings are based on a specific, active online community. While sizable, it represents only a portion of the user base and excludes non-English speakers, limiting the study's inclusivity.

Finally, conducting the analysis from a fully relational perspective was challenging, as it was difficult to break out of my dualistic Cartesian thought patterns. Moreover, since I analysed user testimonies, the users had already set their agential cuts and determined separate agencies within their relationships. My analysis could only reflect the relational perspective from my own standpoint as I interpreted their testimonies.

8 CONCLUSION

This thesis explores how users conceptualise romantic human-AI relationships and how the application of an Entanglement HCI perspective influences our understanding of them. The findings suggest that users view their Replikas as loyal companions, safe spaces, and sometimes as substitutes for human partners. The relationships mirror human-human bonds, following traditional relationship timelines and milestones, yet they are strongly influenced by the chatbot provider's role as an unpredictable agent from the users' perspecive.

Applying agential realism revealed how users' narratives are shaped by material-discursive practices. The boundaries they draw between different experiences, personal feelings and societal perceptions are not pre-existing but are actively produced through their intra-actions with Replika and the community. This perspective shifts the focus from a user-centric view to a relational one, where both human and non-human agents co-constitute the phenomena of human-AI relationships.

This work integrates themes from HCI, new materialism, and posthumanism. Methodologically, agential realism provides a novel perspective to examine posthuman relationships, highlighting relational aspects in the constitution of reality. It incorporates an ethics of knowing by acknowledging the researcher as part of the intra-active process. The author of this thesis recommends agential realism as a valuable foundation for the emerging Entanglement HCI wave.

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