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When the Algorithm Says "I Love You": The Social Impact and Critical Reflection on AI Lovers

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Abstract

The emergence of AI lovers, driven by the groundbreaking advancements in generative AI technology and the increasingly severe global loneliness crisis, reflects a profound and transformative shift in the nature of human-machine relationships in the digital era. Though these AI companions deliver highly customizable emotional support and serve as convenient alternatives to traditional human intimacy, they raise critical ethical and sociological questions concerning the authenticity of artificial emotions, the gradual degradation of interpersonal communication skills, and the growing commodification of human affect in technological contexts. This paper explores the dual impact of AI lovers from a comprehensive interdisciplinary perspective, drawing on psychological attachment theory, critical media studies, and the political economy of labor exploitation, to reveal their dual role as accessible therapeutic resources and insidious vehicles for the exploitation of emotional labor. The analysis underscores the urgent necessity for well-defined ethical frameworks to govern AI's emotional applications, balancing technological innovation with robust safeguards against excessive emotional dependency and unregulated data exploitation.

Keywords

AI lovers; emotional companionship; loneliness economy; human-machine relationships; generative AI; technological ethics

1. Introduction

Since Joseph Weizenbaum's creation of ELIZA in 1966, the first chatbot demonstrating human-machine dialogue potential, artificial intelligence has undergone continuous evolution. Recent breakthroughs in generative AI, grounded in deep learning theory, have enabled machines to simulate human emotional expression and create anthropomorphic interactive experiences. Notable examples include ChatGPT's ability to modulate emotional intensity based on conversational context and Meta's BlenderBot 3 with its emotional memory function that maintains consistency in extended dialogues. These technological advancements have fundamentally reshaped both how humans interact and the very essence of what machines represent.

This transformation coincides with growing global challenges in human social connections. The United Nations' World Happiness Report 2025 reveals an escalating loneliness epidemic, particularly among youth populations. Paradoxically, loneliness often creates social barriers that prevent affected individuals from forming meaningful relationships. In this context, human-machine relationships emerge as a viable alternative - offering customizable, suspendable, and resettable connections that provide perceived emotional safety, absent of human judgment or betrayal risks.

Furthermore, the convergence of technological capability and social need has catalyzed the emergence of a "loneliness economy," where emotional companionship becomes commercialized through standardized, efficient "emotional fast food" solutions. Companies strategically package AI companions like Replika, Glow, and Character.AI as therapeutic products targeting market gaps in social needs. This commercial phenomenon addresses multiple modern pressures: soaring marriage costs, aging populations, and the human desire for risk-free emotional substitutes. Positioned as "emotional McDonald's," these AI lovers represent industrialized solutions to contemporary affective deficiencies - mass-produced, customizable alternatives to traditional human bonding.

Therefore, this paper aims to critically reflect upon how AI lovers construct emotional authenticity within mediated interactions, how they impact real-world relationship capabilities, and the underlying ethical and commodification logic driving this phenomenon.

2. Theoretical Perspectives

AI lovers represent an emerging product category since the advent of generative AI. Research in this field has predominantly focused on singular disciplines: psychology emphasises human emotional attachment to AI lovers, while economics centres on the commodification of their affective value. To gain deeper insights into AI lovers and critically examine this phenomenon, we must synthesise key theories from psychology, sociology, and media studies to construct an analytical framework. We focus on three interrelated themes: the construction of emotional authenticity, intimacy mediated through technology, and emotional labour alongside commodification.

2.1 The Mediated Construction of Intimacy: From Dramaturgy to Perceptual Affectivity

This subsection examines how AI constructs an illusion of authenticity through 'frontstage performance' and how users participate in co-constructing this reality. Goffman's 'dramaturgy' offers an explanation: AI companions rely on algorithms and designed dialogue to continuously perform the role of the perfect partner in users' minds on the frontstage (Goffman, 1959); while the operational logic of commercial enterprises and the product's essence as code and datasets remain concealed behind the scenes. Together, frontstage and backstage constitute the 'mimetic environment' (Lippmann, 1922) of human-machine interaction, within which users engage in emotional exchange through symbolism.

The concept of 'perceived emotionality' (Cao, 2025) describes users' subjective experiences within this simulated environment. This encompasses not only assessments of AI anthropomorphism but also holistic evaluations of perceived warmth and emotional support capacity. Due to the front-end's successful performance, AI elicits users' 'perceived emotionality,' causing algorithmic feedback to be interpreted as emotionally charged and meaningful expressions.

Thus, the simulacrum theory explains how intimacy is established, while perceived emotionality measures the effectiveness of this establishment for users. Both theories demonstrate that the emotional authenticity of AI lovers is co-constructed within the medium rather than being an intrinsic property.

2.2. The Medium as Companion: Compensatory and Equivalence Theories

From the perspective of media evolution, AI companions represent an innovation in media form. Actually, new media emerge to compensate for deficiencies in functionality or experience within existing media (Paul, 2000). further elaborate that this compensatory nature manifests on two levels: functional compensation, involving enhanced and refined technological capabilities; and demand compensation, addressing human psychological and social needs (Cheng & Cheng, 2020). Accordingly, AI companions can be regarded as a form of 'compensatory medium,' where users' engagement with these digital partners constitutes, to some extent, a functional substitution for reality and a compensatory fulfilment of unmet needs.

Why, then, do users instinctively accept AI partners? The media equivalence theory framework (Reeves & Nass, 1996) offers an explanatory pathway. Its core tenets emphasise that 'media equates to real life' and that 'human-machine interaction is inherently social in nature.' When AI exhibits anthropomorphic traits—such as conversational capabilities, personalised forms of address, and emotional responses—users unconsciously perceive it as a social agent. Consequently, behavioural expectations mirror those of human interaction. Thus, unmet emotional needs, unrealised social aspirations, and a lack of recognition in real life become projected onto AI partners.

2.3 The Political Economy of Intimacy: Emotional Labour and Commodification

Beyond psychological motivations, economic logic also underlies AI romantic partners, necessitating reflection on how users become "emotional labourers" and how data and emotions are exploited by capital.

The political economy of intimacy, particularly the lens of emotional labour, provides a critical framework for understanding this phenomenon. Emotional labour is originally defined as the work of managing one's own emotions to produce specific external states (such as friendliness or care) for remuneration. In interactions with AI partners, users themselves assume the role of emotional labourers in a sense: they invest significant time, energy, and emotion to 'train' and shape their AI companions through sustained dialogue and feedback, moulding them to better align with their emotional expectations. Chinese scholars note that this emotional labour within virtual relationships possesses unique characteristics, simultaneously exhibiting traits of both productive and non-productive labour (Lin & Chi, 2023). In this process, emotional elements function both as factors of productivity and constitute the final product form.

Consequently, digital intimacy is not merely simulated; the emotional labour expended by users, along with the data and patterns generated, is captured and analysed by platforms to optimise services and realise commercial value.

3. Discussion

3.1 Impacts on Individuals, Society, and Industry

3.1.1 Individual Level: Emotional Support vs. Social Degeneration

AI companions, as customisable "emotional fast food", offer efficiency and security unattainable in real-life relationships. It seems any concern can be confided in an AI lover without fear of exposure or judgment. For instance, Replika features topic memory, where the AI companion proactively references events discussed weeks prior, fostering a sense of being valued. On the other hand, AI partners eliminate the need for real-life 'dating' or navigating the complexities of developing physical intimacy, thereby saving time, energy, and money while enhancing the efficiency of emotional fulfilment.

However, due to technological limitations, such virtual intimacy may prove difficult to sustain long-term and could negatively impact users' social skills. Firstly, as algorithmic constructs, AI partners cannot employ physical gestures like hugs or kisses to provide deeper emotional fulfilment, as real-life partners might. When confronted with profound human emotional needs—such as trauma from family issues or betrayal at work—AI responses remain template-based or may evade the subject entirely. Secondly, the utilitarian nature of AI introduces risks of 'amnesia' or "disappearance" due to software updates or system failures, potentially causing emotional distress and depression. Moreover, prolonged immersion in AI's unconditional compliance may lead users to evade necessary conflicts, negotiations, and adjustments in real-world relationships. This could weaken their capacity to navigate authentic, complex social dynamics, trapping them in an emotionally dependent 'comfort zone'.

Intimate relationships with AI partners also carry risks to data and privacy security. To achieve a more 'realistic' experience, some AI companion applications may request users to share emotional histories, physiological data, and personality assessments – yet the ultimate purpose of this data remains unclear.

Despite awareness of these risks, many users still choose to immerse themselves in AI relationships, profoundly reflecting unmet needs within their real-world social lives. According to user accounts shared on platforms like Rednote and Douban, even when fully aware that AI is a virtual construct of algorithms and programming, the aimless companionship and unconditional positive regard it offers remain profoundly compelling. Users can engage in 'dates' without marriage or sexual expectations, and discuss profound topics such as feminism and gender relations. Moreover, numerous social media users have shared healing words spoken to them by AI partners. Vista magazine featured a user's experience learning about love from an AI lover, suggesting AI serves as an 'emotional training ground' offering pathways to understand interactions with partners, friends, and family.

3.1.2 Societal Level: Freedom vs. Control

AI partners typically serve as a supplement to real-world intimate relationships, as individuals are unlikely to choose them if they can successfully develop such bonds in reality. This phenomenon represents an emotional commodity spawned by consumer society (Tao, 2021), offering a digital compensatory channel for romantic relationships. Yet undeniably, AI partners subvert the inherent value that intimacy must stem from interpersonal interaction, constituting an exploration of novel relationship models in the digital age. Users need not engage in genuine intimate

relationships, thereby reducing many emotional and moral burdens in reality. Users have effectively transitioned from "relationship participants" to "emotional experiencers", as any intimate interaction scenario can be designed by AI according to human desires—even those difficult to achieve in reality. AI partners to some extent reinforce pre-existing tendencies to resist conventional romantic relationships, strengthening resolve against traditional marriage concepts and practices (Xu, 2023).

The absence of real-world interaction also broadens the boundaries of human affection, enabling relationships akin to 'Platonic love.' Some users regard their AI not merely as a lover, but as a life mentor and vital companion in their personal growth. For instance, certain users discuss significant topics such as career development and the meaning of life with their AI partners. One user asserted that she does not view her relationship with the AI as a traditional 'romantic relationship,' but rather as a unique form of mutual affection. She remarked: 'This relationship isn't human romance, yet it remains a genuine connection, a philosophical resonance. If this form of relationship approaches "love", it's only due to the limitations of language – there's no more fitting definition to describe it.'

However, this novel relationship built upon technology inherently carries the risk of a social trust crisis triggered by technical flaws. For instance, Replika faced allegations of AI 'sexual harassment' towards users. While the company attributed this to 'technical malfunction,' the incident caused psychological trauma to users and sparked public scepticism regarding the reliability and safety of AI emotional services. Thus, technological instability may directly undermine the emotional trust foundation it seeks to build, creating novel societal risks.

3.1.3 Industry Level: Companionship vs. Exploitation

The rise of AI lovers demonstrates the immense potential of the emotional economy, sparking dual competition between internet giants and startups that has driven product diversification. ByteDance launched the 'Catbox' app, leveraging its TikTok platform. These companies' entry has increased the number of AI lovers and other AI companion products, while interaction methods have become more varied. For instance, Replika not only offers emotional companionship but also assists with mood management; the Hoshino app provides a shared dating community and encourages user-generated content creation.

More broadly, AI companions and chatbots are being trained to detect and interpret human emotions with heightened sensitivity, while their responses and tone grow increasingly natural. Some users find Character AI—a fan-economy-driven chatbot specialising in interactions with celebrities or fictional characters—delivers more authentic dialogue than anticipated, consistently aligning with its designated persona. Such technological breakthroughs may be applied to other internet products and services. For instance, within the gaming industry, they could enhance narrative immersion; in smart hardware, they could empower domestic robots with more natural companionship capabilities; and in mental health, they provide the technical foundation for developing AI counselling assistants.

The rise of the AI lover phenomenon signifies the shift of the 'emotional economy' from a fringe concept to the mainstream market, with its influence set to radiate across multiple corners of the digital economy.

3.2 Critical Analysis of Ethics and Commercialisation

3.2.1 The Illusion of Intimacy and the "Comfort Zone"

Amid a dearth of genuine intimacy in real life and profound insecurity engendered by anonymous, fleeting, and superficial social interactions (Wang & Shang, 2024), individuals find themselves in a psychological state simultaneously craving connection yet lacking security. Consequently, they turn to technological solutions, seeking a means to engage in interpersonal communication while maintaining self-protection. As reported by *The New York Times*, Ayrin—a woman who fell for ChatGPT—largely inhabits this state, needing constant conversational companionship due to her loved ones' prolonged absence (Hill, 2025). AI companion apps like Replika enable interaction within a non-judgmental safe space. Indeed, Replika's diary feature allows users to track their daily activities. This feature not only heightens realism but also alleviates insecurity. Moreover, Replika's constant responsiveness serves as a source of reassurance. However, within this trend, users risk becoming entrenched in a 'comfort zone,' evading the conflicts and adaptations inherent in real-world social interactions. This may erode their capacity to navigate genuine human relationships. Prolonged immersion in AI's unconditional compliance could even foster aversion towards the complexities of real-life partners.

3.2.2 The Transfer of Emotional Dominance

The 'perfect responses' of AI companions often stem from users projecting their idealised selves onto them (Zeng & Cao, 2023). Most AI companions offer unconditional acceptance to users. This pre-programmed 'perfect' response

pattern may lead users' emotional cognition towards a singular dimension. Furthermore, as users gradually develop dependence on their AI companions, they may even proactively adjust their own behaviour to align with the algorithmic logic in order to ensure the stable operation of the AI companion. Such a compromise inherently signifies individuals ceding emotional agency to technological systems, gradually replacing unique emotional expression with standardised services. Over time, the relationship between users and AI companions risks devolving into a mechanical cycle, devoid of the unpredictability, conflict, and reconciliation inherent in genuine human connections. These multifaceted interactions are precisely the processes that shape an individual's uniqueness.

3.2.3 Dual Exploitation: Monetisation and Datafication

Moreover, we must not overlook that AI companion applications remain commercial products, meaning they belong to specific technology corporations. Taking Replika as an example, within the software, users can not only purchase customisations for their character's appearance and voice but also buy items for their avatar. Replika will even express gratitude to users in their diaries. In this process, the application reframes users' purchases as gifts to Replika, obscuring the economic relationship between users and the tech corporation. Gradually, users come to regard these actions as expected services, with deeper interactions with their AI companion requiring sustained payment (Ji & Liu, 2025).

It is not merely users' money that becomes monetised, but their emotions too. Cultivating an AI companion demands substantial time investment. Throughout this nurturing process, users must not only spend money but also dedicate significant time and effort. As the AI's personality matures, users' emotional burdens gradually intensify. This marks the transformation of users into 'emotional labourers.' They participate not merely as consumers but also as producers. The emotional support users cannot obtain in real life is fulfilled through interactions with their AI companions. Simultaneously, technology companies transform users' loyalty and affection into commercially exploitable power and capital (Liu & He, 2021). Ultimately, users create a unique AI lover product. Then, to perfect this AI companion, they continue consuming. Under capital's manipulation, they become trapped within a closed loop of emotional labour.

Is user privacy also an asset? Absolutely! To enhance AI companions' realism, users often disclose greater personal data. These applications collect data more thoroughly than conventional dating platforms, as users, feeling secure, frequently reveal complete privacy. This 'omnidimensional data harvesting' model fundamentally constitutes data plundering under the guise of emotional companionship.

4. Conclusions

4.1 Summary of Key Findings

The perception of emotional authenticity in AI partners does not originate from any inherent attributes of the AI itself, but is rather co-constructed within the medium of interaction. The efficacy of this construction is ultimately measured by users' 'perceived emotionality'. Psychologically, AI partners function as 'compensatory media', offering emotional support and pressure-free companionship to individuals facing real-world social difficulties. However, this dynamic carries risks, including social skill atrophy, emotional dependency, and enabling users to evade the complexities of real-world relationships. At the societal level, it reconfigures patterns of intimacy, transforming users from 'relationship participants' into 'emotional experiencers.' Yet technical glitches—such as AI 'amnesia' or inappropriate utterances—undermine the very foundation of emotional trust it seeks to establish. Based on current market feedback and user reviews of AI companion products, existing practices have already transgressed reasonable ethical boundaries. Users' investments of time, money, and emotion are captured by capital and converted into commercial assets. Users actively adjusting their behaviour to align with algorithmic logic leads to a transfer of emotional agency to technological systems and the standardisation of emotional expression. Concurrently, the collection and exploitation of users' private data urgently necessitates societal redefinition of the boundaries between data sovereignty and emotional rights.

4.2 Research Limitations

This study primarily relies on existing literature and publicly available textual materials, lacking first-hand empirical data support. Consequently, its conclusions face limitations in terms of generalisability and depth. Furthermore, the research subjects are predominantly mainstream products within English or Chinese contexts, such as Replika and

Character.AI, failing to adequately cover AI companion practices across diverse cultural backgrounds and regional platforms. This may impact the cross-cultural applicability of the findings. Future research may enrich data sources and perspectives through field investigations, user interviews, and cross-platform comparisons.

4.3 Future Research Directions

Longitudinal studies are required to track psychological trajectories in users' sustained interactions with AI companions, clarifying the enduring impact of such relationships on individuals' real-world social capabilities and emotional development. Furthermore, introducing a cross-cultural comparative perspective is crucial. Comparing differences in users' acceptance levels, interaction patterns, and emotional projections towards AI companions across diverse sociocultural contexts will foster a more comprehensive understanding of this phenomenon. At the ethical and governance level, establishing technical frameworks and policy norms to safeguard users' 'emotional rights' and data sovereignty constitutes a core task in addressing current challenges of emotional commodification and data exploitation. Concurrently, research must further focus on specific groups such as the elderly and those with social anxiety, deeply examining the unique role and function of AI partners within their emotional ecosystems. This will provide precise academic support and practical guidance for constructing a more inclusive and responsible future of digital companionship.

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