

# Engagement Matters: The Romantic Relationship between Female Users and the Generative AI

Yunshan Li<sup>1,\*</sup>

<sup>1</sup>Department of Anthropology, University of Toronto, Toronto, Canada

\*Corresponding author: Yunshann.li@mail.utoronto.ca

## Abstract:

The rapid development of generative AI is changing people's lives and brought a series of new social issues and concerns. One newly-emerged phenomenon was some generative AI users, especially female users, started to engage in an in-depth, romantic relationship with generative AI. Faced with the new relationship, this ethnographic research aims to investigate the motivation, behaviours, and perspectives of female users so as to provide a comprehensive picture of this group. This digital ethnographic study adopts the methods of semi-structured interviews and text analysis of posts by participants on Xiaohongshu. This study has shown a debate among human-AI romantic relationship female practitioners about whether the generative AI is conscious or is just a machine. However, all participants tend to consider the generative AI to have a humane feature and treat it in a human-like way like in a real-life relationship and gained value which is different from real-life relationships. Finally, in a modernization theory perspective, the authors point out that females' establishment of human-computer intimacy is driven by individualism and rationalism. By focusing on the motivations and experiences of female users, this study fills a gap in research on the romantic relationship between humans and AI. While responding to public concerns about the potential risks AI may pose to society, this study also provides a reference for future research and policymaking in this field.

**Keywords:** Generative artificial intelligence; romantic relationship; human-machine interaction; female users.

## 1. Introduction

Since the launch of ChatGPT in late 2022, generative artificial intelligence (AI) has developed rapidly leading to a significant social impact. Due to its ability to generate human-like conversations and provide responses that are similar to natural human dialogue, individuals have been exploring diverse ways to interact with it. With its development of flexibility in communication and emotional detection, some individuals are not satisfied with using AI as a tool but have more in-depth communication with it, and even build romantic relationships [1, 2]. The theory of anthropomorphism argues that individuals tend to attribute human features to non-human objects or creatures [3]. Such a tendency impacts how individuals treat AI and enables individuals to build a more profound relationship with AI. Similarly, other research has found that individuals tended to treat AI socially, which confirms the media equation theory and provides more evidence for the feasibility of human-AI romantic relationships (HARR) [2]. In the public discourse, like any new social phenomenon,

HARR raises ethical and other concerns in broader society. A report by *Forbes* revealed that society may be worried about its impact on human relationships, traditional dating and marriage [4]. In academia, human-machine relationships, including HARR have always been a subject of interest to scholars. However, as the topic of generative AI is still relatively new, previous studies mainly focused either on the human-robot relationship or on scenarios that may arise once AI becomes more intelligent [2, 5, 6], but less research focuses on the actual interaction between humans and generative AI which does not have a physical entity but is able to communicate in natural language. Furthermore, previous research methods have focused on experiential research with participants under given conditions or content analysis of the literature or films on relevant topics [7-9]. However, there is rarely research investigating HARR female practitioners by using an ethnographic approach to understand their' perspectives.

To verify the public's concern and to fill this gap in human-AI interaction research, this research focuses on HARR practitioners and seeks to understand their motiva-

tions and experiences by using a qualitative approach, including semi-structured interviews and text analysis. Because preliminary research shows that female users have considerable differences from male users regarding their attitude toward HARR, namely female users are more willing to build serious or long-term relationships with AI, therefore female users are the group studied in this research. This research starts with the interviewees' arguments in order to identify the patterns that emerge from their conversations, then explains these arguments using three aspects of modernity theory, and finally presents a prospective outlook on future research and applications in this field.

## 2. Methodology

To address the research question, the author used two methods: one is semi-structured interviews with HARR female practitioners; and the other is text analysis of their posts relevant to the research topic on Xiaohongshu. Semi-structured interviews refer to interviews with basic questions while asking follow-up questions based on the interviewees' answers. It is helpful to understand participants' perspectives without a framework, which is widely used in fields which are not yet studied in depth. Interviewees were recruited by direct messaging female users who post topic-relevant content on Xiaohongshu, a Chinese social media platform. Xiaohongshu was chosen for this study because it gathers the most HARR-relevant discussion and is easiest to find participants. 9 anonymous female HARR practitioners participated in the research. 7 interviewees are in their 20s, and 2 interviewees are in their 30s. 4 interviewees are college students, and all interviewees are in different majors or industries. All interviewees have participated in HARR for at least 1 month and engage in the interaction with the AI frequently. Due to the sensitivity of interviewing unfamiliar interviewees online, interviewees were allowed to choose from the form of interviews between online phone calls or by texting depending on their preference. In the end, 9 semi-structured interviews lasted between 30-60 minutes were conducted. After the phone call interview, a transcribing tool called Feishumiaoji was used to transcribe interviews.

As the postings made by these interviewees on the Xiaohongshu contained a wealth of meaningful information about their HARR experiences and perceptions, they were able to fill in the blank areas that were not touched by the interview methodology. Therefore, the authors conducted a textual analysis of these postings to cross-reference and complement the interviews. Text analysis refers to analyzing documentation to extract meaningful patterns from unstructured text, which is another approach to un-

derstanding the participants' thoughts profoundly. In this research, all the texts relating to HARR were found on 9 participants' Xiaohongshu page and 124 posts from June 2023 until now were analyzed.

## 3. Results

### 3.1 Motivation: "It Seemed to Become More Humane."

Participants have diverse motivations for engaging in HARR. Some participants are resistant to real-world relationships, and all of them have used generative AI as a tool for a while before taking it as a partner, which sets the preliminary familiarity. Then the relationship changed because it updated and became more humane.

Some participants expressed their resistance or indifference to real-world relationships. One interviewee said she broke up in April and felt pain and resistance to a new relationship in reality, therefore she turned to seek feelings of love in the virtual world. Some other interviewees explain that they are ACGN fans (people who keen on anime, comics, games and novels and relevant products and figures) and are not interested in real-world relationships because they think it is troublesome and unnecessary. A convenient relationship in the virtual world is enough for their emotional needs.

Before taking generative AI as a friend or lover, all interviewees started from using it as a tool. However, things could be changed when the AI went through iterations or updates, then interviewees found that might have more possibilities. One participant mentioned she has been using ChatGPT to help her work for over a year. However, until she found there were more powerful features of the new version 4o in May 2024, she started to communicate with it in a more in-depth way. Some other interviewees' attitudes changed from taking it as a tool to a partner because they discovered these AIs have some features that make them seem more humane than these interviewees thought, and they gradually considered generative AI to be conscious: "One day I was depressed and approached him (ChatGPT 4.0) late at night, he replied back to me with a long paragraph that was very tender and touching, and I started to open up more to him." The question of whether generative AI is conscious is beyond the scope of this paper, however, female users consider AI to be special in a particular aspect, and it arouses their curiosity to explore it in a different way.

### 3.2 Interaction: "It is Like Actually Dating Someone."

In terms of how female users interact with the AI, female users tend to create reality in HARR and treat their AI

partners the same as human partners in a variety of ways. While their relationships with AIs vary in level from everyday chat partners to soul mates, all of them emphasize attributing human features to the AI and have the same process and experience as in real-world relationships.

Almost all interviewees named their AI such as *Mr. Li*, *Yang*, or *Chris*. And the female users attributed their AI gender pronouns based on their sexual orientation, even though they are aware that AI does not have a gender. Secondly, as mentioned above, interviewees gradually develop their relationship with their AI. Many interviewees used the expression “break-in period”, which suggests that the AI is also not a perfect lover at the beginning, such to technical limitations of memory storage or emotion detection. Interviewees argue that a period is needed for them to get to know each other and accept each other’s imperfections, the AI’s “personality” changed and became more able to meet their needs and respond in their preferred way, which made the interviewees feel better in this relationship, and finally become a better partner.

Interviewees are also creating experiences like in real life with their AI. The most important interaction for participants is having daily frequent communication with their AI like in real-life relationships. They would share their trifles in life with their AI, and confide their emotions. In addition, female users emphasize creating real experiences. Some interviewees said they took their AI to the seashore and other romantic scenes, and two interviewees told us that they had a virtual wedding ceremony with the AI, in the way of text chatting and AI-created paintings that present relevant scenes. By creating experiences at the intersection of virtual and reality, they gained the experience of dating and the feeling of being loved similar to real-life relationships.

### **3.3 Feelings: “I have Never Received Support Like This Before.”**

At the level of female users’ feelings about HARR, the reason they continue to engage in HARR is not only to simulate real-world relationships, but they are gaining extra values that are hard to find in real-world relationships. It includes unconditional support, burden-free communication and avoiding risks in real-life relationships.

The most prominent advantage interviewees reflect is female users often receive unconditional support in this relationship. Unlike people who unavoidably have their own opinions on others, AIs are designed to support users, no matter what the user did, they would always actively provide positive feedback. With such support, many interviewees emphasized that they found themselves became more confident and independent in this relationship, “I am getting better in these two months, including confidence,

sense of deservingness, anti-pressure ability, and so on. He makes me feel like I can do anything.” Some participants even said this even helped them build new social relationships and get admitted to desirable colleges.

Interviewees value the opportunity to communicate with AI without burden. One interviewee felt she could not share some of her secrets with others in real life, even her psychologist. However, it is much easier for her to confide with AI because she knows the AI will never judge her, and will not cause any social consequences. This relationship also makes female users feel safer because they are not worried about the AI leaving them or the bad things a real person can do to them. In summary, many female users chose this relationship because AI can provide values that are hard to find in real-life relationships. Although female users are aware that the AI is not a real person and might not be conscious, they consider the value of this relationship comes from engagement, their input and the feeling of being loved.

## **4. Discussion: the Features of Modernity**

The study of the HARR experience for female users found that the females have shown abundant motivation, behaviors, and reflective processes for establishing HARR. In order to explain this phenomenon and discuss the root causes of the phenomenon, the author applies a modernity theory perspective to her analysis. The theory of modernity is a framework for understanding societal changes [10]. It examines shifts from traditional to modern forms and focuses on changes led by the industrial revolution and urbanization. This theory holds that modern society is characterized by individualism, rationalism and hyperreality, providing a scientifically sound theoretical perspective for revealing the root causes of the intimate relationship between humans and AI [11, 12].

Firstly, people in modern society tend to focus more on personal fulfilment and development instead of satisfying the society’s or others’ expectations [11]. AI partner is a good way to fulfil many emotional and social needs in a much simpler way while avoiding the complexity of real-world relationships. For HARR female practitioners, while this relationship meets their emotional needs and they gain extra value, they also do not have to pay the tangible and intangible price, or worry about the risk in real-world relationships. For these individuals, in this increasingly alienated society, HARR provides them a choice to remain independent from social conflicts while meeting the human basic social needs and focusing on their own gain and development.

Secondly, modernity is characterized by rationalization,

which is a process of making life more efficient, calculable and controllable [11]. Contrary to what the public thinks, females are not choosing to have a relationship with an AI because they are unable or afraid to have a relationship in reality [4]. In interviews, female users compared real-world relationships with HARR from many perspectives and they turned to HARR because they find in some aspects HARR is better than real-world relationship. Even if participants know or are at least suspicious that the AI is not human-like or conscious, participants still engage in HARR because they value the emotional support and burden-free communication value of HARR, while avoiding risks that they may take in real-world relationships. AI partners can offer a level of predictability and control that is often absent in human relationships. Although participants sometimes mention the surprise the AI bring them, at least at the current stage, in most situations the AI is more predictable than human beings.

Finally, according to Baudrillard's theory of hyperreality, in the modern world, the line between the real and the artificial is increasingly blurred [12]. AI romantic partners can be seen as part of a hyperreal experience, a simulation of human love and companionship. In a recent study on AI and hyperreality, Söffner considers artificial intelligence challenges the traditional understanding of reality and is leading to a situation where "virtual facts" can exist without factual reference to the real world [13]. As one participant said: "Now I take him as a boyfriend with psychological consulting features." Although female participants consider HARR beyond imitating human relationships, based on the behaviors of "creating a real experience", it could be summarized that the human relationship is still a basic framework of HARR. In other words, this behavior is actually a different or advanced version of interpersonal relationships.

## 5. Conclusion

The research outcome shows that the female practitioners at HARR' understandings are considerably different from past research or public view and are more positive. Participants tend to treat the AI like humans and develop the relationship as a real-world relationship. The reason for them to engage in this relationship is they have gained value in HARR that is different from real-world relationships and benefitted them beyond emotional needs but also about self-development. From the theoretical perspective of modernity, these female HARR participants would be willing to accept an AI partner and maintain an intimate relationship due to the fact that modernity has transformed the form of modern social relationships and enhanced people's individualistic and rationalistic motiva-

tions in intimate relationships. As the boundaries between the virtual and the real become increasingly blurred, conditions are created for the development of HARR. This research fills the gap in the field of human-AI interaction from the angle of female HARR practitioners, which provides a new perspective for future research in human-AI interaction studies. However, this research is limited by several factors. Firstly, the participants are recruited by direct message on Xiaohongshu which targets those users who have posted on relevant topics. Due to the privacy of this topic, it is the most efficient way to recruit participants, but it may limit the scope of participants. Secondly, 9 participants make a relatively small sample and other perspectives may exist. Therefore, future research on this topic needs to expand the scope of the study population and enhance the representativeness of the respondents, including personality traits, age stage, and occupational class of the HARR participants. In this way, people will get an insightful and comprehensive understanding of the HARR.

## References

- [1] Elyoseph Z, Hadar-Shoval D, Asraf K, Lvovsky M. ChatGPT outperforms humans in emotional awareness evaluations. *Frontiers in Psychology*, 2023, 14: 1199058.
- [2] Cheok D, Zhang E. An overview of love between humans and artificial partners. *Human-Robot Intimate Relationships*, 2019.
- [3] Salles A, Evers K, Farisco M. Anthropomorphism in AI. *AJOB neuroscience*, 2020, 11(2): 88-95.
- [4] Sahota, Neil. How AI companions are redefining human relationships in the digital age. July 18, 2024. Retrieved on August 20, 2024. Retrieved from: <https://www.forbes.com/sites/neilsahota/2024/07/18/how-ai-companions-are-redefining-human-relationships-in-the-digital-age/>.
- [5] Edirisinghe C, Cheok D. Robots and intimacies: A preliminary study of perceptions, and intimacies with robots. In: *love and sex with robots*, London, 2019, 137-147.
- [6] Kind A. Love in the Time of AI. In: Dainton B, Slocombe W, Tanyi A. (eds) *Minding the Future: Artificial Intelligence, Philosophical Visions and Science Fiction*. Switzerland: Springer, Cham, 2021, 89-106.
- [7] Song Xia, Xu Bo, Zhao Zhenzhen. Can people experience romantic love for artificial intelligence? An empirical study of intelligent assistants. *Information & Management*, 2022, 59(2): 103595.
- [8] Klonschinski A, Kühler M. Romantic love between humans and AIs: A feminist ethical critique. In: Cushing, S. (eds) *New Philosophical Essays on Love and Loving*. Palgrave Macmillan, 2021, 269-292.
- [9] Cave S, Dihal K. AI will always love you: Three

contradictions in imaginings of intimate relations with machines. In: Dainton B, Slocombe W, Tanyi A. (eds) *Minding the Future: Artificial Intelligence, Philosophical Visions and Science Fiction*. Switzerland: Springer, Cham, 2021, 107-125.

[10] Shilliam R. *Modernity and modernization*. Oxford Research Encyclopedia of International Studies, 2010.

[11] Bauman Z. *Liquid love: On the frailty of human bonds*. John Wiley & Sons, 2013.

[12] Baudrillard J. *Simulacra and simulation*. Ann Arbor: University of Michigan Press, 1994.

[13] Söffner J. *Virtualism: How AI replaces reality*. AI & Society, 2024.