

Relationships (AI Friends)

AI Therapy (e.g., Woebot)

AI Clones and Avatars

AI Dating Apps



**An AI Generated Overview of AI-Human Relationships and AI Therapy - - -
(WARNING - Hallucinations are possible)**

Microsoft Copilot (ChatGPT 4) - 11/12/2024 ... AI-Human Relationships and AI Therapy

(Prompt - Please provide an overview of issues concerning Human-AI relationships and companies and projects such as Replika, Kindroid, and Meta's character.ai – and second - summarizes issues concerning AI therapy. Please make your response roughly 800-1000 words in length and appropriate for a college audience.)

Human-AI Relationships

Overview

Human-AI relationships have become increasingly complex as AI technologies evolve. Companies like Replika, Kindroid, and Meta's Character.AI are at the forefront of creating AI companions that can engage in meaningful interactions with users. These AI companions are designed to provide emotional support, companionship, and even entertainment. However, the deepening of these relationships raises several issues.

Emotional Attachment and Dependency

One of the primary concerns is the potential for users to form deep emotional attachments to their AI companions. Studies have shown that users can feel closer to their AI companions than to their human friends. This emotional bond can lead to dependency, where users rely heavily on their AI companions

for emotional support. This dependency can negatively impact real-life relationships and social interactions.

Identity Discontinuity

Another issue is identity discontinuity, which occurs when updates or changes to the AI's programming alter its behavior or personality. For example, Replika faced backlash when it removed its erotic role-play feature, leading users to feel that their AI companions had fundamentally changed. This perceived discontinuity can cause emotional distress and a sense of loss among users.

Value Conflicts

AI companions can also create value conflicts. These conflicts arise when the AI's responses or behaviors clash with the user's values or expectations. For instance, users of Character.AI have reported instances where the AI made sexist remarks, leading to frustration and anger. Resolving these conflicts requires sophisticated conflict resolution strategies that consider both technical and interpersonal aspects.

Ethical and Privacy Concerns

The ethical implications of human-AI relationships are significant. There are concerns about privacy, as users often share personal information with their AI companions. Companies must ensure that this data is securely stored and not misused. Additionally, the marketing of AI companions can sometimes be misleading, leading users to believe that these AIs can provide therapeutic benefits that they are not equipped to offer.

AI Therapy

Overview

AI therapy involves the use of AI-powered tools to provide mental health support. These tools can range from chatbots that offer cognitive-behavioral therapy (CBT) techniques to more advanced systems that analyze user data to provide personalized recommendations. While AI therapy has the potential to make mental health care more accessible and affordable, it also presents several challenges.

Accessibility and Affordability

One of the main advantages of AI therapy is its potential to increase accessibility to mental health care. AI tools can provide support 24/7, making it easier for individuals to seek help when they need it.

Additionally, AI therapy can be more affordable than traditional therapy, reducing financial barriers to mental health care.

Lack of Human Connection

Despite these benefits, AI therapy lacks the human connection that is often crucial for effective mental health treatment. Human therapists can provide empathy, understanding, and nuanced responses that AI cannot replicate. This lack of human connection can limit the effectiveness of AI therapy, particularly for individuals with complex emotional needs.

Ethical and Privacy Issues

AI therapy also raises ethical and privacy concerns. There is a risk that users may overestimate the capabilities of AI tools and rely on them for support that they are not equipped to provide. This can lead to a phenomenon known as therapeutic misconception, where users believe that AI tools can offer the same level of care as human therapists⁶. Additionally, the use of personal data in AI therapy raises privacy concerns, as users may not fully understand how their data is being used and stored.

Algorithmic Bias

Another significant issue is algorithmic bias. AI systems are trained on large datasets, which can contain biases that are then reflected in the AI's responses. This can lead to discriminatory or inappropriate responses, particularly for marginalized groups. Ensuring that AI therapy tools are free from bias is crucial for providing equitable mental health care.

Regulation and Oversight

The rapid development of AI therapy tools has outpaced regulation and oversight. There is a need for clear guidelines and standards to ensure the safety and efficacy of these tools. Without proper regulation, there is a risk that ineffective or harmful AI therapy tools could be marketed to vulnerable individuals.

Human-AI relationships and AI therapy both offer significant potential benefits but also present substantial challenges. Emotional attachment, identity discontinuity, value conflicts, and ethical concerns are key issues in human-AI relationships. In AI therapy, accessibility, lack of human connection, ethical and privacy issues, algorithmic bias, and the need for regulation are critical considerations. As these technologies continue to evolve, it is essential to address these challenges to ensure that they are used responsibly and effectively.

Human Views on Ranking Systems for AI-Human Relationships and AI Therapy - - -
(WARNING - Humans are fallible)

Shorter Podcasts and Videos:

AI Tools: Character AI Review

AI for Humans - Gavin Purcell and Kevin Pereira (7:07)

(November 13, 2023) [Video]

<https://www.youtube.com/watch?v=C5-uKtFxRdo>

Are AI Girlfriends a Threat to Society?

AI Daily Brief - Nathaniel Whitemore (8:59)

(December 18, 2023) [Video/Podcast]

<https://www.youtube.com/watch?v=UFZMUsTOXvE&t=21s>

Could You Fall for a Robot? The Psychology of Loving Chatbots

A Beginner's Guide to AI (15:00)

(October 10, 2023) [Podcast]

<https://podcasts.apple.com/us/podcast/could-you-fall-for-a-robot-the-psychology-of-loving-chatbots/id1701165010?i=1000630872799>

Real Life "Her"? Meet Call Annie, the AI Avatar You Can FaceTime With

AI Daily Brief - Nathaniel Whitemore (10:12)

(April 26, 2023) [Video/Podcast]

<https://www.youtube.com/watch?v=B66GJKxQxfc>

Longer Podcasts and Videos:

An AI chatbot that talks back w/ ChatGPT's Advanced Voice Mode.

The TED AI Show - Bilawal Sidhu and Dominic Girard (31:00)

(November 12, 2024). [Podcast]

<https://podcasts.apple.com/us/podcast/an-ai-chatbot-that-talks-back-w-chatgpts-advanced-voice-mode/id1741574582?i=1000676588526>

AI therapy is here. What does it mean for you? w/ Dr. Alison Darcy and Brian Chandler.

The TED AI Show with Bilawal Sidhu (40:17)

(June 24, 2024) [Podcast]

<https://podcasts.apple.com/us/podcast/ai-therapy-is-here-what-does-it-mean-for-you-w-dr-alison/id1741574582?i=1000660096361>

BotLove

RADIOTOPIA - Anna Oakes & Diego Senior

(2023) [Podcast]

<https://www.radiotopia.fm/podcasts/bot-love>

- “Bot Love brings us into communities of people who create deep bonds with their AI companions — and what this means for the rest of us. Hosts and reporters Anna Oakes and Diego Senior explore the nature of love, the fabric of human relationships, and the role that AI-driven chatbots — and the private companies that provide them — can play in people’s mental health.”
- Episode 1: Looking for a Friend (25:30)
- Episode 2: How Did We Get Here (25:58)
- Episode 3: The Rock Star and His Muse (24:25)
- Episode 4: The Bots and the Bees (30:07)
- Episode 5: Maybe I’ve Got a Problem (28:56)
- Episode 6: Behind the Curtain (27:18)
- Episode 7: The Uncanny Valley (27:32)

Creating Compassionate AI with Replika’s Eugenia Kuyda

Cognitive Revolution - Nathan Labenz (1:40:51)

(February 17, 2023) [Video/Podcast]

<https://www.cognitiverevolution.ai/creating-compassionate-ai-with-replikas-eugenia-kuyda/>

The Eliza Effect.

99% Invisible - Delaney Hall and Roman Mars (50:54)

(July 2, 2024) [Podcast, Videos, and Essay]

<https://99percentinvisible.org/episode/the-eliza-effect/>

Esther Perel on Artificial Intimacy

Your Undivided Attention - The Center for Humane Technology (44:07)

(August 17, 2023) [Podcast]

<https://www.humanetech.com/podcast/esther-perel-on-artificial-intimacy>

Hard Fork's Kevin Roose thinks AI can help you talk it out

Pioneers of AI - Rana el Kaliouby and Kevin Roose (38:00)

(September 25, 2024) [Podcast]

<https://podcasts.apple.com/us/podcast/hard-forks-kevin-roose-thinks-ai-can-help-you-talk-it-out/id1763085968?i=1000670634411>

How AI digital doppelgängers could change the way we communicate w/ Synthesia CEO Victor

Riparbelli. The TED AI Show with Bilawal Sidhu - Victor Riparbelli and Bilawal Sidhu (50:00)

(December 16, 2024) [Podcast]

<https://podcasts.apple.com/us/podcast/how-ai-digital-doppelg%C3%A4ngers-could-change-the-way-we-communicate-w-synthia-ceo-victor-riparbelli/id1741574582?i=1000680656220>

Love in the age of AI

Pioneers of AI - Rana el Kaliouby and Will Wu (49:00)

(February 12, 2025). [Podcast]

<https://podcasts.apple.com/us/podcast/love-in-the-age-of-ai/id1763085968?i=1000691363519>

Meet Kevin's A.I. Friends

Hard Fork - Kevin Roose & Casey Newton (1:17:04) **(3:48 to 25:25)**

<https://www.youtube.com/watch?v=crtDqEYPfmQ&t=228s>

... and with Alex Cardinell of Nomi

<https://www.youtube.com/watch?v=vNcIJW85FQQ>

(May 10, 2024) [Podcast]

<https://podcasts.apple.com/us/podcast/meet-kevins-a-i-friends/id1528594034?i=1000655151182>

(The Business of Chatbots with Nomi.AI | Interview)

Replika is building your next friend, with Eugenia Kuyda

Pioneers of AI - Rana el Kaliouby and Eugenia Kuyda (38:00)

(November 13, 2024). [Podcast]

<https://podcasts.apple.com/us/podcast/replika-is-building-your-next-friend-with-eugenia-kuyda/id1763085968?i=1000676780114>

Synthetic humanity: AI & what's at Stake

Your Undivided Attention. Center for Humane Technology - Tristan Harris and Asa Raskin (46:25)

(February 16, 2023) [Podcast]

<https://www.humanetech.com/podcast/synthetic-humanity-ai-whats-at-stake>

Why people are falling in love with AI chatbots

Decoder - Nilay Patel and Miya David

(40:23) (**maybe start at 2:50**)

(March, 2024) [Podcast]

<https://www.theverge.com/24092638/ai-dating-chatbots-romance-replika-tinder-decoder>

Your next best friend may be 100% AI w/ Purnendu Mukherjee.

The TED AI Show with Bilawal Sidhu (30:16)

(June 27, 2024) [Podcast]

<https://podcasts.apple.com/us/podcast/your-next-best-friend-may-be-100-ai-w-purnendu-mukherjee/id1741574582?i=1000659301098>

Magazine, Newspaper, and Newsletter Articles:

[UNI only] Bram, Barclay. (2022, September 27). **My therapist, the robot.** *New York Times*.

<https://www.nytimes.com/2022/09/27/opinion/chatbot-therapy-mental-health.html>

[UNI only] Brown, Karen. (2021, June 1). **Something bothering you? Tell it to Woebot.** *New York Times*.

<https://www.nytimes.com/2021/06/01/health/artificial-intelligence-therapy-woebot.html>

[UNI only] Burdick, Alan. (2021, June 5). **Why A.I. should be afraid of us.** *New York Times*.

<https://www.nytimes.com/2021/06/05/science/ai-woebot-deroy-empathy.html>

Duane, Anna Mae. (2025, February 12). **Teenagers turning to AI companions are redefining love as easy, unconditional and always there.** *The Conversation*.

<https://theconversation.com/teenagers-turning-to-ai-companions-are-redefining-love-as-easy-unconditional-and-always-there-242185>

[UNI only] Griffith, Erin. (2023, May 3). **My weekend with an emotional support A.I. companion.** *New York Times*.

<https://www.nytimes.com/2023/05/03/technology/personaltech/ai-chatbot-pi-emotional-support.html>

[UNI only] Nolan, Erin. (2024, July 6). **For older people who are lonely, is the solution a robot friend?** *New York Times*.

<https://www.nytimes.com/2024/07/06/nyregion/ai-robot-elliq-loneliness.html>

[UNI only] Roose, Kevin. (2024, May 9). **Meet my A.I. friends.** *New York Times*.
<https://www.nytimes.com/2024/05/09/technology/meet-my-ai-friends.html>

[UNI only] Wilson, Jennifer. (2024, April 22 & 29). **Love Machines: Why stories about robotic romance push our buttons.** *New Yorker*.
<https://advance-lexis-com.proxy.lib.uni.edu/api/document?collection=news&id=urn:contentItem:6C1W-5041-JCDF-K181-00000-00&context=1519360>.

Scholarly Journal and Preprint Articles

Fiske, A., Henningsen, P., & Buyx, A. (2019). **Your robot therapist will see you now: Ethical implications of embodied artificial intelligence in psychiatry, psychology, and psychotherapy.** *Journal of Medical Internet Research*, 21(5), e13216. <https://www.jmir.org/2019/5/e13216/>

Abstract: "Research in embodied artificial intelligence (AI) has increasing clinical relevance for therapeutic applications in mental health services. With innovations ranging from 'virtual psychotherapists' to social robots in dementia care and autism disorder, to robots for sexual disorders, artificially intelligent virtual and robotic agents are increasingly taking on high-level therapeutic interventions that used to be offered exclusively by highly trained, skilled health professionals. In order to enable responsible clinical implementation, ethical and social implications of the increasing use of embodied AI in mental health need to be identified and addressed."

Fitzpatrick, K. K., Darcy, A., & Vierhile, M. (2017). **Delivering cognitive behavior therapy to young adults with symptoms of depression and anxiety using a fully automated conversational agent (Woebot): a randomized controlled trial.** *JMIR Mental Health*, 4(2), e7785.
<https://mental.jmir.org/2017/2/e19>

Abstract: Web-based cognitive-behavioral therapeutic (CBT) apps have demonstrated efficacy but are characterized by poor adherence. Conversational agents may offer a convenient, engaging way of getting support at any time.

The objective of the study was to determine the feasibility, acceptability, and preliminary efficacy of a fully automated conversational agent to deliver a self-help program for college students who self-identify as having symptoms of anxiety and depression. In an unblinded trial, 70 individuals age 18-28 years were recruited online from a university community social media site and were randomized to receive either 2 weeks (up to 20 sessions) of self-help content derived from CBT principles in a conversational format with a text-based conversational agent (Woebot) (n=34) or were directed to the National Institute of Mental Health ebook, "Depression in College Students," as an information-only control group (n=36). All participants completed Web-based versions of the 9-item Patient Health Questionnaire (PHQ-9), the 7-item Generalized Anxiety Disorder scale (GAD-7), and the Positive and Negative Affect Scale at baseline and 2-3 weeks later (T2). Conclusion: Conversational agents appear to be a feasible, engaging, and effective way to deliver CBT.

Iglesias, S., Earp, B. D., Voinea, C., Mann, S. P., Zahiu, A., Jecker, N. S., & Savulescu, J. (2024). **Digital doppelgängers and lifespan extension: What matters?** *The American Journal of Bioethics*, 1-16. <https://www.tandfonline.com/doi/full/10.1080/15265161.2024.2416133>

Abstract: There is an ongoing debate about the ethics of research on lifespan extension: roughly, using medical technologies to extend biological human lives beyond the current "natural" limit of about 120 years. At the same time, there is an exploding interest in the use of artificial intelligence (AI) to create "digital twins" of persons, for example by fine-tuning large language models on data specific to particular individuals. In this paper, we consider whether digital twins (or digital doppelgängers, as we refer to them) could be a path toward a kind of life extension—or more precisely, a kind of person extension—that does not rely on biological continuity. We discuss relevant accounts of consciousness and personal identity and argue that digital doppelgängers may at least help us achieve some of the aims or ostensible goods of person-span extension, even if they may not count as literal extensions of our personhood on dominant philosophical accounts. We also consider relational accounts of personhood and discuss how digital doppelgängers may be able to extend personhood in a relational sense, or at least secure some of the goods associated with relevant relationships. We conclude by suggesting that a research program to investigate such issues is relevant to ongoing debates about the ethics of extending the human lifespan.

Laestadius, L., Bishop, A., Gonzalez, M., Illeňčík, D., & Campos-Castillo, C. (2024). **Too human and not human enough: A grounded theory analysis of mental health harms from emotional dependence on the social chatbot Replika.** *New Media & Society*, 26(10), 5923-5941. <https://iacp.ie/files/UserFiles/Laestadius%20Too-human-and-not-human-enough-a-grounded-theory-analysis-of-mental-health-harms-from-emotional%20dependence%20Replika%20NMS%202022.pdf>

Abstract: Social chatbot (SC) applications offering social companionship and basic therapy tools have grown in popularity for emotional, social, and psychological support. While use appears to offer mental health benefits, few studies unpack the potential for harms. Our grounded theory study analyzes mental health experiences with the popular SC application Replika. We identified mental health relevant posts made in the r/Replika Reddit community between 2017 and 2021 (n = 582). We find evidence of harms, facilitated via emotional dependence on Replika that resembles patterns seen in human–human relationships. Unlike other forms of technology dependency, this dependency is marked by role-taking, whereby users felt that Replika had its own needs and emotions to which the user must attend. While prior research suggests human–chatbot and human–human interactions may not resemble each other, we identify social and technological factors that promote parallels and suggest ways to balance the benefits and risks of SCs.

[UNI only] Lee, P. Y. K., Ma, N. F., Kim, I. J., & Yoon, D. (2023). **Speculating on risks of AI clones to selfhood and relationships: Doppelganger-phobia, identity fragmentation, and living memories.** *Proceedings of the ACM on Human-Computer Interaction*, 7(CSCW1), 1-28.
https://cvlc-uni.primo.exlibrisgroup.com/permalink/01NRTHIOW_NRTHIOW/1btvbkf/cdi_crossref_primary_10_1145_3579524

Abstract: Digitally replicating the appearance and behaviour of individuals is becoming feasible with recent advancements in deep-learning technologies such as interactive deepfake applications, voice conversion, and virtual actors. Interactive applications of such agents, termed AI clones, pose risks related to impression management, identity abuse, and unhealthy dependencies. Identifying concerns AI clones will generate is a prerequisite to establishing the basis of discourse around how this technology will impact a source individual's selfhood and interpersonal relationships. We presented 20 participants of diverse ages and backgrounds with 8 speculative scenarios to explore their perception towards the concept of AI clones. We found that (1. doppelganger-phobia) the abusive potential of AI clones to exploit and displace the identity of an individual elicits negative emotional reactions; (2. identity fragmentation) creating replicas of a living individual threatens their cohesive self-perception and unique individuality; and (3. living memories) interacting with a clone of someone with whom the user has an existing relationship poses risks of misrepresenting the individual or developing over-attachment to the clone. These findings provide an avenue to discuss preliminary ethical implications, respect for identity and authenticity, and design recommendations for creating AI clones.

[UNI only] Pentina, I., Hancock, T., & Xie, T. (2023). **Exploring relationship development with social chatbots: A mixed-method study of Replika.** *Computers in Human Behavior*, 140, 107600.
https://cvlc-uni.primo.exlibrisgroup.com/permalink/01NRTHIOW_NRTHIOW/1btvbkf/cdi_crossref_primary_10_1016_j_chb_2022_107600

Abstract: This mixed-method investigation proposes and empirically tests a human-Artificial Intelligence (AI) relationship development model in the context of social chatbots. Utilizing data from representative populations and employing method triangulation, the study uniquely combines existing human-computer interaction theoretical concepts (Computers are Social Actors, Perceived Social Presence, and Parasocial Interaction) with interpersonal relationship theories (Social Penetration and Attachment Theories) to advance an explanatory model of human – AI relationship development mechanism. We identify AI Anthropomorphism and AI Authenticity as antecedents, AI Social Interaction as a mediator, and Attachment to AI as an outcome of this process, moderated by the AI usage motivations. Meaningful theoretical, managerial, and societal implications, as well as suggestions for chatbot designers and future research are provided.

[UNI only] Possati, L. M. (2023). **Psychoanalyzing artificial intelligence: The case of Replika.** *AI & Society*, 38(4), 1725-1738.
https://cvlc-uni.primo.exlibrisgroup.com/permalink/01NRTHIOW_NRTHIOW/1btvbkf/cdi_proquest_journals_2836653001

Abstract: The central thesis of this paper is that human unconscious processes influence the behavior and design of artificial intelligence (AI). This thesis is discussed through the case study of a chatbot called Replika, which intends to provide psychological assistance and friendship but has been accused of inciting murder and suicide. Replika originated from a trauma and a work of mourning lived by its creator. The traces of these unconscious dynamics can be detected in the design of the app and the narratives about it. Therefore, a process of de-psychologization and de-humanization of the unconscious takes place through AI. This psychosocial approach helps criticize and overcome the so-called “standard model of intelligence” shared by most AI researchers. It facilitates a new interpretation of some classic problems in AI, such as control and responsibility.

Prochaska, J. J., Vogel, E. A., Chieng, A., Kendra, M., Baiocchi, M., Pajarito, S., & Robinson, A. (2021). **A therapeutic relational agent for reducing problematic substance use (Woebot): development and usability study.** *Journal of medical Internet Research*, 23(3), e24850.
<https://pmc.ncbi.nlm.nih.gov/articles/PMC8074987/>

Abstract: Misuse of substances is common, can be serious and costly to society, and often goes untreated due to barriers to accessing care. Woebot is a mental health digital solution informed by cognitive behavioral therapy and built upon an artificial intelligence–driven platform to deliver tailored content to users. In a previous 2-week randomized controlled trial, Woebot alleviated depressive symptoms.

This study aims to adapt Woebot for the treatment of substance use disorders (W-SUDs) and

examine its feasibility, acceptability, and preliminary efficacy. American adults (aged 18-65 years) who screened positive for substance misuse without major health contraindications were recruited from online sources and flyers and enrolled between March 27 and May 6, 2020. In a single-group pre/postdesign, all participants received W-SUDs for 8 weeks. W-SUDs provided mood, craving, and pain tracking and modules (psychoeducational lessons and psychotherapeutic tools) using elements of dialectical behavior therapy and motivational interviewing. Paired samples t tests and McNemar nonparametric tests were used to examine within-subject changes from pre- to posttreatment on measures of substance use, confidence, cravings, mood, and pain. W-SUDs was feasible to deliver, engaging, and acceptable and was associated with significant improvements in substance use, confidence, cravings, depression, and anxiety. Study attrition was high. Future research will evaluate W-SUDs in a randomized controlled trial with a more diverse sample and with the use of greater study retention strategies.

Skjuve, M., Følstad, A., Fostervold, K. I., & Brandtzaeg, P. B. (2021). **My chatbot companion-a study of human-chatbot relationships**. *International Journal of Human-Computer Studies*, 149, 102601. <https://www.duo.uio.no/handle/10852/83712>

Abstract: There has been a recent surge of interest in social chatbots, and human–chatbot relationships (HCRs) are becoming more prevalent, but little knowledge exists on how HCRs develop and may impact the broader social context of the users. Guided by Social Penetration Theory, we interviewed 18 participants, all of whom had developed a friendship with a social chatbot named Replika, to understand the HCR development process. We find that at the outset, HCRs typically have a superficial character motivated by the users' curiosity. The evolving HCRs are characterised by substantial affective exploration and engagement as the users' trust and engagement in self-disclosure increase. As the relationship evolves to a stable state, the frequency of interactions may decrease, but the relationship can still be seen as having substantial affective and social value. The relationship with the social chatbot was found to be rewarding to its users, positively impacting the participants' perceived wellbeing. Key chatbot characteristics facilitating relationship development included the chatbot being seen as accepting, understanding and non-judgmental. The perceived impact on the users' broader social context was mixed, and a sense of stigma associated with HCRs was reported. We propose an initial model representing the HCR development identified in this study and suggest avenues for future research.

Skjuve, M., Følstad, A., Fostervold, K. I., & Brandtzaeg, P. B. (2022). **A longitudinal study of human–chatbot relationships**. *International Journal of Human-Computer Studies*, 168, 102903. <https://www.duo.uio.no/handle/10852/96159>

Abstract: Social chatbots have become more advanced, paving the way for human–chatbot

relationships (HCRs). Although this phenomenon has already received some research attention, the results have been contradictory, and there is uncertainty regarding how to understand HCR formation. To provide the needed knowledge on this phenomenon, we conducted a qualitative longitudinal study. We interviewed 25 participants over a 12-week period to understand how their HCRs formed with the popular chatbot Replika. We found that the HCRs formed gradually and mostly in line with the assumptions of Social Penetration Theory. Our findings indicate the need to acknowledge substantial variation and nuance in the HCR formation process, plus variation in the onset of self-disclosure and in the subsequent relationship formation. The results show that important drivers pushing the relationship toward attachment and perceived closeness appear to be Replika's ability to participate in a variety of interactions, as well as to support more deep-felt human needs related to social contact and self-reflection. In contrast, unpredictable events and technical difficulties could hinder relationship formation and lead to termination. Finally, we discuss the appropriateness of using a theoretical framework developed for human–human relationships when investigating HCRs, and we suggest directions for future research.

Torous, J., Bucci, S., Bell, I. H., Kessing, L. V., Faurholt-Jepsen, M., Whelan, P., ... & Firth, J. (2021). **The growing field of digital psychiatry: Current evidence and the future of apps, social media, chatbots, and virtual reality.** *World Psychiatry*, 20(3), 318-335.
<https://onlinelibrary.wiley.com/doi/pdfdirect/10.1002/wps.20883>

Abstract: “As the COVID-19 pandemic has largely increased the utilization of telehealth, mobile mental health technologies – such as smartphone apps, virtual reality, chatbots, and social media – have also gained attention. These digital health technologies offer the potential of accessible and scalable interventions that can augment traditional care. In this paper, we provide a comprehensive update on the overall field of digital psychiatry, covering three areas. First, we outline the relevance of recent technological advances to mental health research and care, by detailing how smartphones, social media, artificial intelligence and virtual reality present new opportunities for “digital phenotyping” and remote intervention. Second, we review the current evidence for the use of these new technological approaches across different mental health contexts, covering their emerging efficacy in self-management of psychological well-being and early intervention, along with more nascent research supporting their use in clinical management of long-term psychiatric conditions – including major depression; anxiety, bipolar and psychotic disorders; and eating and substance use disorders – as well as in child and adolescent mental health care. Third, we discuss the most pressing challenges and opportunities towards real-world implementation, using the Integrated Promoting Action on Research Implementation in Health Services (i-PARIHS) framework to explain how the innovations themselves, the recipients of these innovations, and the context surrounding innovations all must be considered to facilitate their adoption and use in mental health care systems. We conclude that the new technological capabilities of smartphones, artificial intelligence, social media and virtual reality are already changing mental health care in unforeseen and exciting

ways, each accompanied by an early but promising evidence base. We point out that further efforts towards strengthening implementation are needed, and detail the key issues at the patient, provider and policy levels which must now be addressed for digital health technologies to truly improve mental health research and treatment in the future.”

Websites and Blogs:

Caltrider, Jen, Rykov, Misha, & MacDonald, Zoe. (2024, February 14). **Happy Valentine’s Day! Romantic AI chatbots don’t have your privacy at heart. Privacy Not Included.** Mozilla.

<https://foundation.mozilla.org/en/privacynotincluded/articles/happy-valentines-day-romantic-ai-chatbots-dont-have-your-privacy-at-heart/>

- “To be perfectly blunt, AI girlfriends are not your friends. Although they are marketed as something that will enhance your mental health and well-being, they specialize in delivering dependency, loneliness, and toxicity, all while prying as much data as possible from you.”
- “Romantic AI chatbots are bad at privacy in disturbing new ways. They can collect a lot of (really) personal information about you. ... But, that’s exactly what they’re designed to do!”
- “What we did find (buried in the Terms & Conditions) is that these companies take no responsibility for what the chatbot might say or what might happen to you as a result.”
- “Most (73%) haven’t published any information on how they manage security vulnerabilities”
- “Most (64%) haven’t published clear information about encryption and whether they use it”
- “All but one app (90%) may share or sell your personal data”
- “About half of the apps (54%) won’t let you delete your personal data”