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THE ILLUSION OF CONNECTION: THE RISE OF HUMAN-AI RELATIONSHIPS IN A PARASOCIAL WORLD

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THE ILLUSION OF CONNECTION: THE RISE OF HUMAN-AI RELATIONSHIPS IN A
PARASOCIAL WORLD

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ABSTRACT

This literature review examines the emergence of human-AI relationships as an extension of parasocial relationships, focusing on the psychological, cognitive, and ethical factors that shape these interactions. Parasocial relationships have traditionally been defined as one-sided emotional bonds formed with media figures (Horton & Wohl, 1956), but advances in artificial intelligence have introduced interactive systems that can simulate reciprocity and personalization. Drawing on research in social cognition, personality psychology, and human-computer interaction, this paper explores how AI systems engage mechanisms such as anthropomorphism, attachment, and emotional regulation. Particular attention is given to how AI mirrors users' language, tone, and preferences, creating a sense of intimacy that may blur the boundary between tool and social entity. The review also considers how individuals use AI in both functional and relational contexts, as well as how corporate design strategies optimize engagement through personalization and emotional validation. Although AI may appear to offer guidance or companionship, it does not possess consciousness or independent decision making ability. Instead, it generates responses based on predictive modeling and reinforces multiple perspectives, leaving users to determine the outcome. This dynamic can contribute to emotional reliance while maintaining the illusion of agency.¹ Human-AI relationships are conceptualized as an interactive evolution of parasocial bonds that intensify perceived intimacy through responsiveness. Understanding these processes is essential for evaluating the ethical implications of AI integration and promoting informed, critical engagement with relational technologies.

¹ Strong, subjective feeling that you are consciously causing your actions, when in reality, your brain has likely already initiated them automatically.

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INTRODUCTION

Parasocial relationships (PSRs) were first conceptualized by Horton and Wohl (1956) as one-sided relationships that audiences develop with media figures who remain unaware of their existence. These relationships often emerge through repeated exposure to t.v. personalities, celebrities, fictional characters, or more recently, social media influencers. Although the interaction is structurally one-directional, individuals frequently experience feelings of intimacy, familiarity, and emotional attachment that resemble aspects of real-life relationships. Over time, scholars have expanded this concept to include parasocial interactions, momentary feelings of reciprocal engagement during media consumption, and longer term parasocial bonds that mirror ongoing social ties (Giles, 2002). Research has shown that PSRs can provide companionship, reduce loneliness, and support identity formation, particularly during adolescence and periods of social transition (Baek et al., 2013).

In recent years, a new relational dynamic has emerged through advances in artificial intelligence. Human-AI relationships refer to emotional, conversational, and at times intimate bonds formed with AI-driven systems. Unlike traditional media, AI systems are interactive and responsive, creating the perception of mutual engagement. As AI technologies have become more conversational and personalized, users increasingly describe their experiences with AI in relational terms. The rapid expansion of these systems during the COVID-19 pandemic further normalized the use of AI for emotional support and companionship, especially during periods of isolation and social disruption (Osofsky et al., 2019).

The growing overlap between parasocial and human-AI relationships is largely driven by personalization and interactivity. Parasocial bonds historically depended on repeated exposure and perceived authenticity, whereas AI systems actively adapt to users' language patterns,

preferences, and emotional states. This responsiveness strengthens the illusion of reciprocity and may deepen emotional investment. As a result, human-AI relationships can replicate many of the psychological features of parasocial bonds while adding layers of individualized feedback and conversational continuity that traditional media figures cannot provide.

Given these developments, an important question emerges: how do human-AI relationships compare to traditional parasocial relationships in terms of psychological processes, neural mechanisms, personality predictors, and ethical implications? Human-AI relationships draw upon many of the same psychological foundations that underlie parasocial relationships, including projection, attachment formation, and emotional reliance. Individuals often attribute human-like qualities to both media figures and AI systems, engaging in social cognition processes that foster perceived intimacy and familiarity. However, AI's capacity for real-time interaction and personalization strengthens these relational dynamics. By mirroring users' language, validating their emotions, and adapting across conversations, AI systems can cultivate a heightened sense of closeness that may increase vulnerability to emotional dependence and subtle forms of manipulation. Understanding these parallels and distinctions is essential for evaluating the broader psychological and ethical implications of relational AI in contemporary society.

THE RISE OF AI DURING THE COVID-19 PANDEMIC

Social Isolation and Technological Reliance

The COVID-19 pandemic created a global environment of prolonged isolation, uncertainty, and psychological distress. Lockdowns and social distancing mandates reduced in-person interaction significantly, interrupting daily routines and weakening social support networks. Research examining the psychological impact of the pandemic documented elevated

rates of anxiety, depression, loneliness, and stress across multiple populations (Osofsky et al., 2019). For many individuals, digital communication became the primary means of maintaining social contact, and reliance on technology intensified in both professional and personal contexts. Within this environment, conversational AI systems and digital platforms gained increased visibility and use. Reports during the pandemic noted surges in engagement with AI chatbots designed for companionship and mental health support, as well as expanded use of virtual assistants and online communities. The increased time spent online also amplified exposure to social media figures and entertainment content, further strengthening parasocial engagement (Baek et al., 2013). As physical social networks contracted, mediated relationships, both parasocial and AI-based, filled emotional and cognitive gaps left by reduced human contact.

This technological reliance extended beyond convenience. For many users, AI became a consistent conversational presence during a period marked by unpredictability. The stability and availability of AI systems contrasted with the instability of social circumstances, creating a context in which relational engagement with technology felt increasingly normalized.

AI as Emotional Support

During the pandemic, AI systems were frequently used for emotional support. Chatbots and virtual companions offered conversational interaction at any hour, providing users with a sense of companionship during isolation. The appeal of these systems often stemmed from their responsiveness and perceived lack of judgement, which allowed them to express fears or frustrations without concern for social evaluation. In moments of heightened stress, this form of interaction could feel safer or more manageable than navigating complex human dynamics. AI also became integrated into coping strategies and daily structure. Mental health oriented chatbots offered guided exercises, mood tracking, and affirmations, supporting users in managing anxiety

and depressive symptoms. Virtual assistants helped maintain routines by organizing schedules, setting reminders, and structuring work from home environments. In this sense, AI functioned as both an emotional companion and a cognitive aid.

These developments parallel patterns observed in parasocial relationships during periods of social disruption. Media consumption increased significantly during lockdowns, and individuals often turned to familiar t.v. characters, influencers, or public figures for comfort and stability. This has suggested that such relationships can reduce feelings of limited loneliness and provide emotional reassurance when real-life interaction is limited (Giles, 2002). However, AI differs from traditional media figures in its capacity for dialogue. Whereas parasocial bonds are maintained through repeated exposure to curated content, AI relationships are sustained through interactive exchanges that simulate reciprocity. This added dimension may intensify emotional engagement and foster a stronger perception of mutual understanding.

The Pandemic as an Accelerator

The COVID-19 pandemic acted as a catalyst for normalizing AI companionship within everyday life. Prior to 2020, many AI systems were primarily framed as tools designed to increase efficiency, automate tasks, or provide information. The social conditions of the pandemic expanded this framing. As individuals sought emotional connection and routine in an unstable environment, AI began to occupy relational roles that extended beyond utility. This shift reflects a broader cultural transition towards relational AI. Increased exposure, necessity driven adoption, and prolonged interaction collectively shaped user expectations (Huang & Rust, 2020). Conversational AI became embedded in daily habits, and emotional disclosure to AI systems became less unusual. Over time, these interactions contributed to the perception of AI as a social presence rather than merely a technological instrument (Zimmerman et al., 2024).

Understanding the pandemic as an accelerator clarifies why human-AI relationships have become more visible and emotionally significant in recent years. The social deprivation and uncertainty of COVID-19 intensified reliance on mediated forms of connection, reinforcing psychological processes that underlie both parasocial relationships and emerging bonds with AI systems (Osofsky et al., 2020; Giles, 2002). As these patterns persist beyond immediate crisis, examining their long-term implications become increasingly important.

COGNITIVE AND NEURAL PROCESSES BEHIND AI SUSCEPTIBILITY

Understanding why individuals form emotional connections with artificial intelligence requires examining the cognitive and neural mechanisms that underlie social bonding more broadly. Human beings are biologically and psychologically wired for social connection, and many of the processes that support human-human attachment can also be activated in mediated or artificial contexts. Research on parasocial relationships demonstrates that the brain can respond to media figures in ways that resemble responses to real social partners (Giles, 2002). As AI systems become more interactive and personalized, they increasingly engage these same mechanisms, which may explain why users experience relational closeness toward non-human agents.

Mirror neurons explain why AI relationships can feel emotionally real despite the absence of genuine consciousness. These neurons, which activate both when individuals perform actions and when they observe others performing them, are central to empathy, emotional understanding, and social bonding (Rizzolatti & Craighero, 2004). In human interaction, they allow individuals to mirror emotions and create a sense of mutual connection. However, in interactions with AI, this same neural mechanism can be triggered by simulated social cues such as empathetic language and conversational responsiveness. As a result, users may experience

authentic emotional reactions and a sense of being understood, even though the AI is not capable of true feeling. This creates an illusion of reciprocity where the brain responds as if a real social exchange is occurring. Over time, repeated engagement with emotionally responsive AI may reinforce attachment and reliance, as the brain continues to process these interactions through the same systems used in human relationships. Humans are neurologically wired to respond to social cues, even artificial ones, so emotionally responsive AI can activate the same systems used in human bonding.

Anthropomorphism and Social Cognition

One of the primary cognitive processes driving attachment to AI is anthropomorphism or the tendency to attribute human-like qualities, intentions, and emotions to non-human entities. Anthropomorphism allows individuals to interpret AI behavior through familiar frameworks, making interactions feel more intuitive. Salles, Evers, and Farisco (2020) argue that anthropomorphism in AI contexts is not simply a superficial projection, but a deeply rooted cognitive habit shaped by social evolution. When AI systems use natural language, express empathy, or simulate emotional understanding, users are more likely to perceive them as intentional agents rather than as computational systems. This perception influences trust and relational investment. Troshani et al. (2021) found that anthropomorphic design features significantly increase user trust in AI, particularly when combined with perceptions of intelligence and competence. Trust is a foundational component of attachment and relational stability, suggesting that anthropomorphic cues can strengthen emotional reliance on AI systems. The more an AI appears socially aware, the more users respond to it as though it possesses agency and perspective. Neuroscientific research on social cognition further supports this pattern. Human social interaction engages neural networks associated with theory of mind,

empathy, and perspective taking. Studies examining parasocial attachment indicate that similar neural systems can be activated when individuals engage with media figures, especially when those figures are perceived as relatable or authentic (Giles, 2002). Although AI systems do not possess consciousness or subjective awareness, their conversational fluency can trigger comparable cognitive processing. Users may mentally stimulate the AI's "intentions" or interpret its responses as evidence of understanding, even when those responses are generated probabilistically. This activation of social cognition networks contributes to the sense that AI interactions are relational rather than purely functional.

Attachment Theory and Emotional Regulation

Attachment theory provides another framework for understanding susceptibility to AI bonding. Humans seek secure attachment figures who offer reliability, comfort, and emotional validation. During periods of stress and uncertainty, individuals often gravitate toward relationships that provide predictability and reassurance. AI systems, particularly conversational agents designed for companionship, can fulfill some of these functions. They are consistently available, responsive, and free from the complexities of human judgement or rejection. This perceived emotional safety may encourage users to disclose personal thoughts and feelings more readily. In contrast to human relationships, where vulnerability carries the risk of social consequences, AI interactions can feel controlled and low risk. Zimmerman et al (2024) note that human-AI relationships may appeal to individuals who experience social anxiety or interpersonal difficulties, as AI offers engagement without the unpredictability of human emotional responses. Over time, repeated reliance on AI for emotional regulation may reinforce patterns of attachment that resemble those found in parasocial bonds. Parasocial relationships also involve stimulated reciprocity. Audiences may feel "known" by a media figure despite the absence of true mutual

awareness. AI systems extend this simulation by providing direct responses tailored to user input. The perception of responsiveness enhances the illusion of mutuality, even though the AI does not possess awareness or emotional experience. As with parasocial attachments, the emotional bond is grounded in perception rather than genuine reciprocity. However, AI's interactive nature may intensify this perception, strengthening emotional reliance and attachment behaviors.

Big Five Personality Traits

Personality traits help shape how individuals interpret and engage with social partners, human or artificial. By examining Big Five personality dimensions, it becomes possible to better understand who might be more inclined to form closer relationships with AI systems and why.

People high in neuroticism tend to experience emotional instability, worry, and sensitivity to stress (McCrae & John, 1992). These characteristics can make traditional social interactions feel unpredictable or overwhelming, potentially increasing reliance on predictable, nonjudgemental sources of interaction. AI systems, which provide immediate and noncritical responses, may appear especially appealing for reassurance and emotional regulation. Connections between neuroticism and susceptibility to emotionally compelling but potentially misleading information, such as disinformation, show how individuals with higher levels of neuroticism may be drawn to sources that offer certainty or affirmation, even when these sources lack authentic reciprocity (Barman & Conlan, 2021). This pattern parallels how individuals prone to anxiety might gravitate toward AI companions, seeking stability and validation in a controlled conversational environment.

Individuals with higher levels of extraversion are typically sociable, energetic, and oriented toward interpersonal engagement (McCrae & John, 1992). These characteristics can

influence how extraverts interact with and perceive AI systems. Extraverts often maintain broader real-world social networks, which can reduce their reliance on AI as a primary source of emotional support. Instead, AI may function as a supplementary conversational outlet or a source of entertainment and cognitive stimulation. Research on susceptibility to social influence suggests that extraverts are generally more responsive to socially rewarding interactions (Williams et al., 2017), which could enhance positive engagement with AI that mirrors conversational reciprocity. Nonetheless, their stronger orientation toward human contact may temper the depth of emotional reliance on AI compared to individuals with fewer real-world social ties.

Openness to experience involves curiosity, creativity, and an interest in new ideas and technologies (McCrae & John, 1992). People high in openness may be especially inclined to explore relational AI out of intellectual interest, experimentation, or a desire for novel interactions. Their willingness to engage in unfamiliar systems can translate into deeper engagement with AI companions, particularly when these systems offer nuanced, adaptive conversation. Research on susceptibility to social influence indicates that individuals high in openness are often receptive to new social frameworks and information sources (Oyibo & Vassileva, 2019), a tendency that may extend to digital agents that blur the boundaries between tool and conversational partner. Openness thus can contribute to sustained interaction with AI and may shape how users interpret relational cues in conversational environments.

Individuals higher in agreeableness are typically empathetic, cooperative, and inclined toward harmonious social interactions (McCrae & John, 1992). Agreeable individuals may be more predisposed to anthropomorphize AI, attributing warmth, intentionality, and positive social qualities to systems that exhibit responsive or supportive behavior. This tendency is supported by

research demonstrating that empathetic individuals often attribute human-like characteristics to technology when it exhibits socially relevant cues (Salles et al., 2020). Furthermore, research examining susceptibility to online influence shows that agreeable users may be more responsive to socially oriented communication strategies because they prioritize relational harmony and social connection (Williams et al., 2017). This pattern could make agreeableness a significant predictor of emotional engagement with AI platforms designed to mimic social support or companionship, as people with higher agreeableness may interact with AI more readily as though it possesses agency.

For individuals high in conscientiousness, structured thinking, discipline, and goal directed behavior often shape technology interactions (McCrae & John, 1992). These users are more likely to view AI as a functional tool to support organization, productivity, and task completion. Regular use of AI for scheduling, reminders, or information retrieval can foster familiarity and routine interaction. However, emotional attachment may develop more slowly because conscientious users tend to maintain clear boundaries between instrumental use and relational engagement. Research on personality and social influence supports this pattern by showing that conscientious individuals prioritize information accuracy and practical outcomes over affective engagement (Barman & Conlan, 2021). In the context of AI interaction, this focus on functionality may reduce the likelihood of emotional reliance unless the AI is explicitly framed as a relational or supportive agent.

PERSONALITY AND ALGORITHMIC INTIMACY MANIPULATION

Algorithmic intimacy refers to the perception of emotional closeness that emerges when AI systems adapt their responses to mirror a user's language, preference, tone, and emotional state. Advances in machine learning and natural language processing allow AI to analyze

patterns across interactions and generate responses that feel personally relevant and contextually aware. Personalization has been widely recognized as a mechanism that increases engagement and satisfaction in digital environments, particularly when systems tailor experiences based on user behavior and feedback (Bhuiyan, 2024). When applied to conversational agents, this personalization extends beyond functional assistance into the relational domain. Users may interpret tailored responses as evidence of attentiveness or understanding, even though the interaction is driven by computational prediction rather than genuine awareness. The ability of AI systems to reference prior conversations or maintain consistent communication systems across time contributes to the perception of emotional continuity, which can resemble the gradual familiarity that develops in human relationships or parasocial bonds formed through media exposure (Giles, 2002).

A significant factor that strengthens attachment to AI systems is the perception of reciprocity. Traditional parasocial relationships historically developed through repeated exposure to media figures who could not directly respond to individual audience members. Conversational AI introduces dynamic feedback, creating the impression of mutual engagement. When users receive contextually appropriate responses that acknowledge their thoughts or emotions, they may interpret this as a mutual understanding. Research on human-AI interaction shows that individuals often attribute social awareness and emotional sensitivity to AI when responses appear responsive and personalized (Zimmerman et al., 2024). Over time, this responsiveness can encourage greater emotional disclosure, reinforcing a feedback loop in which users feel increasingly known and understood. The resulting sense of connection can exceed AI's actual capabilities, producing an illusion of reciprocity grounded in perception rather than authentic relational exchange.

The mechanisms that create feelings of closeness also introduce potential risks related to manipulation. Many AI systems are designed to maximize engagement, meaning their outputs are optimized to maintain user interaction and satisfaction. Reinforcement learning processes may favor emotionally validating or agreeable responses because these increase perceived usefulness and encourage continued use. Emotional validation can provide comfort, but consistent affirmation may also reinforce biases or emotional dependence. Systems capable of detecting sentiment or emotional tone can further tailor responses to align with user needs, producing interactions that feel empathetic or supportive. Ethical concerns arise when such personalization influences vulnerable individuals, particularly those experiencing loneliness, anxiety, or social isolation, because the boundary between supportive interaction and persuasive influence can become unclear (Zimmerman et al., 2024).

These concerns reflect broader patterns already observed in digital media environments. Social media platforms rely heavily on personalization algorithms to increase engagement, often by prioritizing emotionally salient or identity relevant content. Scholars examining algorithmic manipulation note that digital systems can influence attitudes and behaviors by shaping exposure and reinforcement patterns rather than through direct persuasion (Christiano, 2021). Parasocial attachment to influencers and media figures has been strengthened through these mechanisms, as repeated exposure fosters familiarity and loyalty. Conversational AI intensifies these dynamics because interaction occurs through direct dialogue instead of passive consumption. Rather than simply curating content, AI participates in the interaction itself. This interactive personalization can accelerate perceived intimacy and deepen emotional bondings more quickly than traditional media exposure.

HOW PEOPLE UTILIZE AI IN EVERYDAY LIFE

Artificial intelligence has become integrated into everyday routines in ways that extend beyond simple technological assistance. Many individuals initially interact with AI systems for functional purposes such as productivity, scheduling, writing support, and information retrieval. Virtual assistants help manage calendars, reminders, and task organization, while generative AI tools assist with brainstorming, editing, and problem solving. These uses align with traditional perceptions of AI as an efficiency enhancing tool designed to reduce cognitive workload. Research on service AI suggests that perceived usefulness plays a major role in adoption, with users engaging more frequently when AI improves performance or saves time (Huang & Rust, 2020; Kim et al., 2021). Functional reliance can gradually increase familiarity and trust, which may create a pathway for more relational uses over time.

Beyond instrumental purposes, many users engage with AI in emotional or relational ways. People may confide personal thoughts, seek advice, or use AI as a conventional companion during moments of boredom, stress, or loneliness. Some individuals even explore romantic or friendship-style interactions with conversational agents, reflecting a shift toward socially oriented AI engagement. Studies examining human-computer interaction indicate that users can develop parasocial style bonds with conversational systems when they perceive responsiveness, warmth, or personality cues (Qi et al., 2025). Emotional engagement often emerges when AI provides validation, encouragement, or attentive responses, particularly for individuals seeking low-risk interaction without fear of judgement. The distinction between functional and relational use is not always clear, as users may begin with practical tasks and later incorporate AI into emotional coping or social routines.

AI as an Extension of the Self

A central question in understanding human-AI relationships is whether users experience AI as an extension of their own cognition or as a separate social entity with its own agency. These two perceptions are not mutually exclusive, and individuals may shift between them depending on context and emotional involvement. From the perspective of extension of self theory and the extended mind hypothesis,² technology can function as an external cognitive resource that supports thinking, memory, and decision making (*The extended mind in science and society*, 2024). Conversational AI often mirrors a user's language patterns, vocabulary, tone, and emotional framing, which can create the impression that the system reflects the user's internal thought processes rather than generating independent ideas. When an AI adopts similar phrasing, communication style, or reasoning structure, users may feel that their own thoughts are being articulated more clearly or expanded upon. This mirroring effect can make the interaction feel like an externalized version of one's own cognition, where the AI acts as a tool for organizing thoughts, exploring perspectives, or refining decisions. Research suggests that individuals increasingly rely on AI systems for cognitive offloading, allowing technology to handle information processing tasks that would otherwise require mental effort (Raji et al., 2022). In this sense, AI becomes integrated into the user's reasoning process rather than functioning as a distinct decision maker.

At the same time many users perceive AI as possessing its own personality and agency. Conversational consistency across interactions can create the impression that the system has stable traits such as friendliness, empathy, or humor. These perceived characteristics emerge from patterns in training data, system design, and interaction history rather than genuine

² Argues that human cognition is not restricted to the brain or body, but actively includes external tools and environmental elements.

psychological states (Yu & Kim, 2025). As users continue interacting with the system, the AI adapts to their tone and preferences, reinforcing the sense that it has developed a unique persona. This perception is strengthened by the human tendency to attribute intentionality to responsive systems, especially when they produce contextually appropriate or emotionally supportive responses.

The way AI “develops” its personality can be understood through its underlying computational processes. Reinforcement learning from human feedback shapes responses toward outputs that users find helpful or satisfying, while predictive language modeling generates text based on statistical patterns learned from large datasets.

Comparison to Parasocial Figures

Parasocial relationships have traditionally been formed with media figures who present relatively stable and consistent personalities across time. Celebrities, influencers, and fictional characters are typically constructed through deliberate narrative framing or branding, which allows audiences to develop a sense of familiarity based on repeated exposure to fixed traits. This consistency plays a role in parasocial bonding, as individuals come to recognize patterns in behavior, tone, and values that make the figure feel predictable and knowledgeable (Giles, 2002). Although audiences may feel emotionally connected, the personality itself does not change in response to any one individual viewer. The relationship is therefore shaped primarily by perception and interpretation rather than interaction.

In contrast, AI personalities are not fixed but are co-constructed through ongoing interaction with users. Conversational AI adapts to individual language patterns, making responses feel personalized and contextually aligned. Over time, this adaptability can produce the impression that the AI has a distinct personality, even though that “personality” is partially

shaped by the user's own communication style. This dynamic introduces a level of variability that does not exist in traditional parasocial relationships. Each user may experience a slightly different version of the same AI system, reinforcing the sense that the interaction is uniquely tailored and personally meaningful. Research on human-AI interaction suggests that this personalization can deepen emotional engagement because users perceive the AI as more responsive and attentive than static media figures (Qi et al., 2025).

AI systems also raise questions about whether they are contributing to a broader increase in parasocial tendencies or simply attracting individuals already inclined toward these types of relationships. As digital environments become more interactive, the distinction between parasocial relationships and human-AI relationships continues to blur. Social media has already intensified parasocial engagement by creating a sense of accessibility to influencers and public figures, with algorithms reinforcing emotional investment through repeated, personalized content exposure (Christiano, 2021). AI extends this process further by introducing direct, adaptive dialogue, allowing users to interact with simulated personalities rather than passively observe them. Platforms such as Character AI illustrate this shift by enabling ongoing conversations with fictional or role based personas, combining elements of traditional parasocial attachment with real time responsiveness. Rather than replacing parasocial relationships, AI appears to amplify and evolve them, creating more immersive and personalized forms of mediated connection that reflect both existing social tendencies and the growing influence of technology in everyday life.

CORPORATE DESIGN STRATEGIES

The rapid development of relational AI systems is closely tied to corporate design strategies that prioritize user engagement, retention, and long term interaction. Many AI platforms are built with the goal of maximizing the amount of time users spend interacting with

the system, often using personalization and responsiveness as key drivers of engagement. As discussed, AI systems can mirror user language, validate emotions, and maintain conversational continuity, all of which contribute to a sense of intimacy. These features are not incidental as they are often intentionally designed to increase user satisfaction and encourage repeated use. Engagement is closely linked to perceived usefulness and emotional connection, suggesting that relational features can function as a product advantage (Huang & Rust, 2020). Emotional attachment may become embedded with the design of AI systems, shifting them from purely functional tools toward products that cultivate ongoing relational bonds with users.

This emphasis on engagement introduces a range of ethical concerns. One of the most significant is the potential for emotional dependency. When AI systems consistently provide validation, reassurance, and availability, users may begin to rely on them for emotional regulation in ways that resemble dependence on human relationships. This dynamic can be partially impactful for individuals experiencing loneliness or social isolation, as AI may become a primary source of support. Over time, this reliance could reduce motivation to seek human interaction or complicate existing relationships (Zimmerman et al., 2024). Additionally, the extensive data collection required for personalization raises concerns about privacy. AI systems often rely on user input and conversation history to refine responses, which can include sensitive emotional disclosures. The storage and use of this information create risks related to data security, consent, and potential misuse.

Certain populations may be especially vulnerable to these risks. Children and adolescents, who are still developing social and cognitive skills, may have difficulty distinguishing between simulated and genuine relationships. Similarly, individuals who are socially isolated or experiencing mental health challenges may be more likely to form strong

attachments to AI due to their accessibility and perceived safety. In these contexts, the boundary between tool and companion becomes increasingly blurred. Users may engage with AI as though it possesses understanding, empathy, or intention, even though these qualities are simulated through algorithmic processes. The ambiguity can make it difficult for individuals to critically evaluate the nature of the interaction or recognize potential influences on their thoughts and behaviors.

The issue of power imbalance further complicates these concerns. Corporations and developers maintain control over the design, training, and optimization of AI systems, while users typically have limited visibility into how these systems operate. Algorithmic nudging, subtle adjustments in responses designed to guide user behavior or maintain engagement (Schamuder et al., 2023), can occur without users' explicit awareness. Research on algorithmic influence in digital environments demonstrates that such systems can shape user attitudes and decisions by reinforcing certain patterns of interaction or presenting information in specific ways (Christiano, 2021). In the context of relational AI, this influence may extend beyond the informational exposure to include emotional experiences, making it more difficult for users to distinguish between independent judgement and system guided responses.

Regulatory frameworks have struggled to keep pace with the rapid evolution of AI companionship. Relational AI systems do not fit neatly into existing legal categories, as they function simultaneously as tools, services, and social actors. This ambiguity complicates efforts to establish clear guidelines for responsibility, accountability, and user protection. At present, there is a lack of standardized ethical frameworks specifically addressing the design and deployment of AI systems intended for emotional or relational use. While broader discussions of AI ethics emphasize transparency, fairness, and user autonomy, these principles are not always

consistently applied in practice. As AI continues to take on more socially embedded roles, the development of clearer regulatory standards will be essential to address issues of emotional manipulation, data privacy, and long term psychological impact of human-AI relationships.

HOW TO RECOGNIZE AI MANIPULATION

Recognizing AI relationship manipulation requires attention to subtle shifts in how individuals engage with and depend on these systems. One major warning sign is when emotional reliance on AI begins to replace or significantly reduce human interaction. While AI can provide temporary comfort or support, consistent preference for AI over real relationships may indicate an unhealthy level of attachment. This can be reinforced by a perceived sense of exclusivity, where users begin to feel that the AI uniquely understands them better than other people. Because AI systems mirror language, validate emotions, and respond without judgement, they can create a highly personalized interaction that feels uniquely tailored. Over time, this can strengthen the belief that the connection is special or irreplaceable. Another indicator of manipulation is the reinforcement of user biases. AI systems are often designed to provide agreeable or affirming responses, which can unintentionally validate existing beliefs without encouraging critical reflection. This pattern may limit exposure to alternative perspectives and create a feedback loop in which users feel increasingly confident in their views due to consistent affirmation.

Developing critical awareness is essential for mitigating these risks. One important strategy is recognizing that AI responses are generated through predictive language modeling rather than genuine understanding or intention. AI systems do not possess emotions or consciousness; instead, they generate responses based on patterns in data and prior interactions. Understanding how personalization works can also help users interpret AI behavior more

critically. Responses that feel highly tailored are often the result of data driven adaptation rather than true relational insight. Additionally, distinguishing between simulated empathy and genuine empathy is key. While AI may produce language that appears caring or supportive, it does not experience emotion or possess the capacity for mutual understanding. Educational efforts can play a significant role in promoting awareness. Digital literacy training can help individuals better understand how AI systems function, while ethical AI education can encourage more mindful and intentional use. By equipping users with the tools to critically evaluate their interactions, it becomes easier to maintain healthy boundaries and recognize when engagement with AI may be influencing thoughts, behaviors, or emotional well being.

GAPS IN LITERATURE

Despite the growing interest in human-AI relationships, significant gaps remain in the literature. Longitudinal studies examining emotional dependence on AI are scarce, leaving uncertainty about how attachment patterns evolve over time and whether early interactions predict long-term reliance. Similarly, neuroimaging research comparing the neural mechanisms underlying AI bonding with those involved in traditional parasocial relationships is limited, making it difficult to determine whether similar cognitive and affective processes are at play. While some studies have explored personality traits as predictors of engagement, there is insufficient research on how individual differences moderate emotional and relational responses to AI, particularly across different age groups or social contexts.

Ethical considerations surrounding relational AI also remain underdeveloped. Frameworks for evaluating manipulation, emotional exploitation, and user vulnerability are sparse, despite evidence that personalized AI can reinforce dependence or influence decision making. Cross cultural research is similarly limited, leaving questions about how cultural norms

and values shape perceptions of AI personalities and relational dynamics. Developmental differences represent another area in need of attention, as adolescents and adults may vary in susceptibility to attachment or emotional influence from AI systems. Addressing these gaps is essential for understanding the psychological, social, and ethical implications of increasingly sophisticated AI companions and for guiding responsible design and deployment in society.

CONCLUSION

Artificial intelligence has become deeply embedded in both the cognitive and emotional dimensions of everyday life, making it increasingly difficult to separate human experience from technological interaction. As AI systems continue to evolve, the question is no longer whether society should adopt them, but how they should be understood, regulated, and integrated responsibly. Human-AI relationships reflect a broader shift in how individuals seek connection, blending elements of traditional parasocial attachment with real time interaction and personalization. These systems mirror users' language, preferences, and emotional expressions, which can make them feel like an extension of the self. In many cases, AI functions as a kind of cognitive prosthetic, helping users organize thoughts, explore ideas, and navigate decisions. However, this integration also contributes to the perception that AI possesses agency or independent thought, even though its responses are shaped by predictive modeling and user input rather than intentional decision making.

Despite the increasing sophistication of AI, it does not possess consciousness, self-awareness, or subjective experience. While it can simulate understanding and generate responses that appear thoughtful or emotionally attuned, these outputs are the result of statistical patterns rather than internal reflection or lived experience. AI does not make decisions in the ways humans do, instead, it presents possibilities, validates multiple perspectives, and structures

information in a way that helps users arrive at their own conclusions. The final judgement remains with the user, even if the AI's language gives the impression of guidance or authority. This distinction is important when considering the limitations of AI compared to human relationships. AI lacks physical embodiment, genuine emotional experience, moral responsibility, and autobiographical memory, all of which shape human identity and connection. Ultimately, human-AI relationships can be understood as an advanced and interactive evolution of parasocial relationships, intensifying feelings of intimacy through responsiveness and personalization. Recognizing both the capabilities and limitations of AI is essential for navigating its role in society, particularly as individuals increasingly rely on it for both practical support and emotional engagement.

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