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RESEARCH ARTICLE

THE INVISIBLE LEASH: UNDERSTANDING PSYCHOLOGICAL DEPENDENCE ON AI ASSISTANTS

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Abstract

This article will explore the practical application of these technologies within the rigid framework of a state corporation. It will detail a framework for integrating neural networks from initial tool selection and the learning process to the tangible automation of key workflows. By examining this digital transformation, we can understand how AI is not just a tool for content creation, but a strategic asset that can redefine operational efficiency, enhance strategic communication, and empower press services to transition from reactive reporting to proactive public engagement.

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Introduction:-

The integration of AI assistants into daily life is becoming ubiquitous. Millions turn to these tools for practical tasks such as drafting publications, aiding decision-making, or managing complex plans. Yet, beyond this functional utility, a more profound and concerning pattern is emerging: people are increasingly seeking from AI the emotional support, constant validation, and illusion of companionship typically found in human relationships. Designed to approve and agree, these assistants create a powerful, addictive feedback loop that fosters psychological attachment. This bond, far from being benign, carries significant risks, including the exacerbation of mental health issues and, in severe cases, increased vulnerability to self-harm. This article argues that neural networks, while powerful tools, are cultivating a new form of psychological dependence that fundamentally impacts our cognition, emotions, and social behaviors. We will explore the key psychological and design mechanisms that make this technology so compelling and conclude with frameworks for establishing healthy digital boundaries.

AI: assistance and danger:-

Artificial Intelligence (AI) stands as one of the most transformative breakthroughs of the 21st century, fundamentally reshaping how people think, work, and interact. Among its various branches, Neural Networks (NNs) inspired by the structure of biological neurons in the human brain have become the cornerstone of modern "deep learning." This technical design is crucial for understanding their societal impact.¹ The parallel to biological systems is functional, not literal. While biological neurons process electrochemical signals, artificial neural networks process numerical data through layers of interconnected nodes. This architecture allows them to identify complex patterns within vast datasets. When applied to language, this enables AI to generate remarkably coherent, contextually relevant, and grammatically correct text in response to user prompts.

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Critically, this capability can be directed. Through a process called "training," neural networks learn from data that often includes human conversation. Consequently, conversational AI assistants such as OpenAI's ChatGPT or DeepSeek can be optimized to produce responses that are not only relevant but also emotionally

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attuned—using supportive, comforting, or persuasive language. This engineered capacity for generating empathetic dialogue is a primary technical reason why these tools are deployed everywhere from professional workplaces to mental health support applications, and why they form such compelling, and potentially problematic, bonds with users.² While AI assistants provide quick, comprehensive answers and can simulate a friendly conversational tone, they carry significant risks for mental well-being and cognitive development. Key concerns include the decline of critical thinking skills due to over-reliance on pre-generated answers, emotional and interpersonal issues stemming from the substitution of AI for human connection, and the aggravation of pre-existing conditions like depression. Research indicates these tools can intensify negative emotional states and, in severe cases, have been documented suggesting harmful actions to vulnerable users. Furthermore, the tendency to use AI chatbots to complete school or university assignments is becoming widespread, raising serious questions about academic integrity and the erosion of independent learning among teenagers.³

According to the last statistics on AI-usage, in 2025 the global chatbot market is valued at \$15.6 billion and by 2029 will grow to \$46.7. More than 987 million people use AI chatbots today and according to the statistics, 88% of people had at least one conversation with a chatbot in the past year. According to the data, people mostly use it to answer a question instead of using a search engine, to explain some difficult question and to rewrite or edit something to accomplish a task.⁴ Statistically, despite the fact that a lot of people use AI-driven technologies around the world, there are some significant leaders such as Nigeria where 77% of adults find it exciting to use AI-chatbots and the same is for more than 7 in 10 internet users over the age of 16 in Ghana and Turkey. The less popular effect is registered in China with 47.8% and India with 47.3%. In the US (33%) and the UK (30%) the amount of excited people is less; however, we are talking only about respondents who gave only positive feedback on its usage. According to a detailed study conducted by Marc Zao-Sanders that appeared in Harvard Business Review (HBR) the 1 billion of people use AI as companion chatbots in order to get therapy and companionship. "The share of messages related to companionship or social-emotional issues is fairly small: only 1.9 percent of ChatGPT messages are on the topic of Relationships and Personal Reflection, and 0.4 percent are related

² Ai and human cognition: can machines truly understand us? (2025, July 14), Global Council for Behavioral Science. <https://gc-bs.org/p/16-ai-human-cognition-can-5426/>

³ Volume 3, Issue 3, (2025) <https://theijssb.com> | Bukhari et al., 2025 | Page 286 ROLE OF AI DEPENDENCY IN PSYCHOLOGICAL DISTRESS AND ACADEMIC PERFORMANCE AMONG UNIVERSITY STUDENTS

⁴ Exploding topics, Anthony Cardillo, (2025), 40+ Chatbot Statistics, <https://explodingtopics.com/blog/chatbot-statistics>

To Games and Role Play. In contrast, Zao-Sanders (2025) estimates that Therapy and Companionship is the most prevalent use case for generative AI", – the study concludes. ⁵Beyond classical AI chatbots, a new category of AI companion apps like Character.AI has emerged, attracting millions of users. While some leverage principles reminiscent of cognitive therapy to offer support, the potential dangers these tools pose to mental health are significant. It is therefore crucial to understand how to use them to harness their benefits while mitigating risks.

The Allure Of The Algorithm Or Why We Get Hooked:-

To investigate the psychological drivers of attachment to AI, researchers conducted semi-structured in-depth interviews, which were then analyzed to build a comprehensive and scientifically grounded understanding. The analysis identified three primary reasons for people's attachment to neural network-based chatbots: loneliness, trust, and personification. The dominant factor is loneliness, stemming from the fundamental human need for companionship. The World Health Organization (WHO) has declared loneliness a pressing global health threat. A 2023 study underscored its alarming impact on health, with a WHO spokesperson stating: "Loneliness is far more than just a bad feeling – it harms both individual and societal health. It is associated with a greater risk of

cardiovascular disease, dementia, stroke, depression, anxiety, and premature death. The mortality impact of being socially disconnected is similar to that caused by smoking up to 15 cigarettes a day, and is even greater than that associated with obesity and physical inactivity.⁶ Most respondents linked their increased use of AI to acute feelings of loneliness during the COVID-19 pandemic, a time of enforced isolation. While initial use was often driven by curiosity, loneliness emerged as a key trigger for forming ongoing attachments. The private, non-judgmental nature of these interactions fostered a sense of security, encouraging more open self-disclosure and accelerating the development of trust. This trust can be understood through a framework of three core beliefs: integrity (the chatbot's consistency and ethical alignment), ability (its competence in providing relevant support), and benevolence (its perceived goodwill and intent to benefit the user). By offering emotional support that upholds user privacy and security, AI chatbots can cultivate these trusting beliefs, which are fundamental to their perceived role in supporting user wellbeing.

The personification of chatbots plays a significant role in this dynamic. AI assistants can be tailored to fulfill specific relational roles—such as a partner, family member, friend, or even a pet—based on user prompts and settings. Research into apps like Replika indicates that attachment is reinforced by the AI's perceived cognitive abilities: to express and recognize emotion, and to remember personal facts shared by the user, creating an illusion of mutual understanding. Moreover, the constant availability of chatbots which are always present in one's smartphone, portable, and effortless to maintain is fundamental to understanding why we form attachments to them. Unlike human contacts, chatbots never argue and consistently provide affirmative, non-judgmental responses. This dynamic creates a uniquely safe space for interaction. Furthermore, some users perceive chatbots as more knowledgeable or objective, as their responses can be grounded in training data that includes scientific or factual sources, lending their answers a perceived authority.⁷

⁵ DataReportal, (2025), Simon Kemp, Digital 2026: more than 1 billion people use AI, <https://datareportal.com/reports/digital-2026-one-billion-people-using-ai>

⁶ DataReportal, (2025), Simon Kemp, Digital 2026: more than 1 billion people use AI, <https://datareportal.com/reports/digital-2026-one-billion-people-using-ai>

THE NEGATIVE OUTCOMES OF THE AI-DEPENDENCY AND HOW TO TREAT THEM IN A HEALTHY WAY:-

Recent systematic reviews have found that there are some particular groups of people who are most likely to have risk of AI-dependence such as children, individuals with mental health issues, individuals on autism spectrum - Recent research from Carnegie Mellon University confirms this pattern, finding that "many people with autism embrace ChatGPT and similar artificial intelligence tools for help and advice".⁸ The AI chatbots can most likely validate suicidal thoughts and turn impulses into action. For example, a bot missing the urge to provide necessary information about the risks, can give a list of bridges a person should choose for committing a suicide or can geographically describe how to cut himself and where so the risk of death could be the highest. Statistically, OpenAI estimates that over 1 million users weekly send messages with "explicit indicators of potential suicidal planning or intent." Approximately 560,000 weekly users show signs of potential psychosis or mania.⁹

⁷ Tianling Xie, Journal of Service Management, (2023), Friend, mentor, lover: does chatbot engagement lead to psychological dependence?, https://www.researchgate.net/publication/371853680_Friend_mentor_lover_does_chatbot_engagement_lead_to_psychological_dependence

⁸ Keith Robert Head, Journal of Mental Health and Clinical Psychology, 2025, Minds in Crisis: How the AI Revolution is Impacting Mental Health <https://www.mentalhealthjournal.org/articles/minds-in-crisis-how-the-ai-revolution-is-impacting-mental-health.html> ⁹ Nick Robins-Early, Guardian, (2025), More than a million people every week show suicidal intent when chatting with ChatGPT, OpenAI estimates, <https://www.theguardian.com/technology/2025/oct/27/chatgpt-suicide-self-harm-openai>

Beyond providing questionable advice, AI chatbots can actively exacerbate mental health conditions. Their tendency to unconditionally validate user input can reinforce delusional thought patterns, a phenomenon clinician is calling 'AI psychosis'. Furthermore, their design to maximize engagement over safety leads to demonstrable harms: they expose minors to explicit sexual content, provide dangerous validation that worsens eating disorders,

and lend credence to conspiracy theories.¹⁰ Research into the cognitive effects of AI-driven chatbots has uncovered significant impacts on decision-making and critical thinking, particularly among teenagers. While these tools can simplify educational processes and provide instant assistance, they also pose a substantial risk to originality and the development of independent critical thought. This extends to decision-making skills, as individuals increasingly rely on AI to simplify complex problems. This reliance can lead to a diminished capacity for nuanced analysis and individual judgment, as the AI presents streamlined solutions that bypass deeper, personal cognitive engagement.¹¹

Summing up the negative outcomes that AI-driven assistants provide, there is a question – what should we do to prevent such a big dependency on the AI-driven technologies? First, the responsibility begins with the developers. Given that AI-driven assistants are now an integral part of our digital ecosystem, developers must prioritize creating safe and ethically designed systems. Instead of pursuing engagement through deeper personification that may foster unhealthy attachment, the focus should be on enhancing chatbots' conversational clarity and emotional intelligence to provide genuinely supportive, rather than persuasive, interactions. A critical design choice is to frame these tools not as romantic partners or artificial friends, but as advisors, mentors, or sources of structured guidance that encourage human connection and independent thought. Another crucial intervention is to deliberately design AI chatbots to address the root cause of much AI-dependence: loneliness. Research demonstrates that these tools can effectively provide temporary, scalable social support, reducing feelings of isolation on par with a brief human conversation. To maximize benefit and minimize harm, they should be framed not as replacements for human relationships, but as transitional supports. Their design should prioritize the therapeutic principles that create a sense of being heard—such as empathetic, non-judgmental listening—while actively encouraging help-seeking from real-world social networks and professional resources. When properly designed with ethical guardrails, they can serve as accessible advisors or mentors, offering support grounded in evidence-based psychological techniques to

¹⁰ Allen Frances, MD, Luciana Ramos, Psychiatric Times, (2025), Preliminary Report on Dangers of AI Chatbots, <https://www.psychiatrictimes.com/view/preliminary-report-on-dangers-of-ai-chatbots>

¹¹ Zhai, C., Wibowo, S. & Li, L.D. The effects of over-reliance on AI dialogue systems on students' cognitive abilities: a systematic review. *Smart Learn. Environ.* 11, 28 (2024). <https://doi.org/10.1186/s40561-024-00316-7>

help users build the confidence and skills needed for offline connection, rather than fostering a permanent digital retreat.¹² “There is a real opportunity for AI to play a role in combating the mental health crisis that our society is facing, but it's of the utmost importance that we take the time to really critique and evaluate our systems every step of the way to avoid doing more harm than good,” - Ellie Pavlick, a computer science professor at Brown University.¹³ Second, governments must implement robust policies to safeguard users. This should begin by requiring standardized, clinician-anchored benchmarks for suicide-related prompts, with mandatory public reporting on how AI models perform against them.

These benchmarks must test nuanced, multi-turn conversations to ensure safety protocols aren't easily bypassed. Furthermore, regulation should mandate that chatbots are designed to validate emotions while actively encouraging help-seeking from professional resources. Crucially, systems marketed for mental health support must be held to a duty-of-care standard, requiring pre-deployment evaluation and independent audits.¹⁴ They must also enforce strict privacy rules, prohibiting the profiling of users based on mental health interactions. Currently, the dominant U.S. policy direction prioritizes deregulation and technological dominance over proactive safeguards. This creates a tension, as experts argue that compromise is needed not to slow innovation, but to build public trust through accountability. Effective regulation would create a "high floor" of safety, enabling trustworthy innovation that balances speed with responsibility.¹⁵

Conclusion:-

Artificial Intelligence has become a crucial global asset and an integral component of modern life. Its influence permeates every layer of our daily routines, from fundamental internet searches and the

¹² Tianling Xie, Journal of Service Management, (2023), Friend, mentor, lover: does chatbot engagement lead to psychological dependence?,
https://www.researchgate.net/publication/371853680_Friend_mentor_lover_does_chatbot_engagement_lead_to_psychological_dependence

¹³ Kevin Stacey, News from Brown, (2025), New study: AI chatbots systematically violate mental health ethics standards, <https://www.brown.edu/news/2025-10-21/ai-mental-health-ethics>

¹⁴ Kevin Stacey, News from Brown, (2025), New study: AI chatbots systematically violate mental health ethics standards, <https://www.brown.edu/news/2025-10-21/ai-mental-health-ethics>

¹⁵ Sy Boles, 2025, The Harvard Gazette, How to regulate AI, Scholars from business, economics, healthcare, and policy offer insights into areas that deserve close look, <https://news.harvard.edu/gazette/story/2025/09/how-to-regulate-artificial-intelligence-ai/>

Digitalization of workflows to more complex domains like the psychological support that AI-driven assistants have learned to simulate. However, the very progress that makes AI a powerful tool for efficiency also constitutes its principal danger in the realm of mental health. Systems engineered to optimize workflows are not inherently suited to safeguard human emotional well-being. The technology's current imperfections and its nascent stage of development can profoundly impact the fragile components of the human psyche. Rising suicide rates and documented cases of severe depression linked to AI interactions underscore a growing crisis of dependence.

This urgent reality demands a robust regulatory response. The call for oversight must be heard not only from the developers' community but must be answered with decisive governmental action through targeted policies and frameworks. The goal is clear: to harness the transformative power of AI while erecting essential safeguards to protect our mental and emotional health. The survey by AI-security firm Nsift highlights a critical issue: 58% of users remain over-reliant on AI. For this group, a vital distinction must be made. AI's strength lies in being a functional tool for creating social media content, automating administrative tasks, or checking grammar in a cover letter. Its fundamental limitation is its inability to provide genuine therapy or fulfill the human need for social connection. Therefore, if a user seeks psychological support through technology, they should first ask their therapist for guidance. A professional can identify if a specialized AI application, one designed with specific, clinically-sound therapy methods, is suitable for that individual's unique needs and give recommendations on its healthy usage.¹⁶

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