

Exploring the Risks of AI on Human Worth

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Abstract

In an era where artificial intelligence (AI) is seamlessly integrated into daily life, our paper investigates the intersection of generative AI and cybersecurity, exploring how AI platforms like ChatGPT, Dall-E, and Midjourney, powered by Large Language Models (LLMs), along with the Big Five personality traits influence individual self-worth. We interrogate AI's capacity to meet human needs as outlined by Maslow's hierarchy of needs and its simultaneous potential to pose cybersecurity risks—especially privacy infringements and psychological manipulation. Our findings highlight significant cybersecurity challenges, including vulnerability to data breaches and exploiting personality traits, which can undermine human worth. By presenting an innovative model that marries Maslow's hierarchy with the Big Five traits, the study underscores the critical role of cybersecurity in the ethical integration of AI into society. We call for a proactive balance in AI advancement that prioritizes robust cybersecurity strategies to protect and elevate human dignity in the digital age.

Keywords: Generative AI, Human Worth, Big Five Personality Traits, Maslow's Hierarchy, Cybersecurity

Introduction

As we navigate the digital era's advancements, the integration of AI into our daily lives heralds a transformative shift, raising profound implications for human interactions, worth, and the fulfillment of Maslow's hierarchy of fundamental needs. This paper examines the multifaceted impact of generative AI on our experiences, from basic physiological needs to self-actualization, focusing on how generative AI influences the Big Five personality traits and perceptions of self-worth. Amid significant security and privacy risks presented by AI technologies (Curtis et al., 2022; García-Peñalvo & Vázquez-Ingelmo, 2023; Sætra, 2019; Sætra & Mills, 2022; Ngo et al., 2023), our research endeavors to guide AI development toward enhancing human capabilities while preserving individual and collective worth. Addressing AI's impact on personality expression and self-perception amidst cybersecurity concerns, we aim to inform responsible AI integration. Central to our inquiry is the question:

How does the integration of generative AI, emphasizing cybersecurity risks and individual benefits, influence individuals' perceptions of their worth?

This dialogue extends into critical considerations of human worth, challenging AI's role in societal structures and the equitable distribution of its benefits, thereby prompting a reassessment of human dignity and intrinsic value (Borenstein, 2011; Liu & Zawieska, 2017; Makridakis, 2017; Cherry, 1997). Highlighting the ethical implications, this discourse navigates through the challenges posed by AI's opacity and potential biases, emphasizing the need for robust AI deployment strategies and legal frameworks to safeguard human worth (Smuha, 2021; Curtis et al., 2022; European Commission, 2021). Through this examination, we present a novel model integrating Maslow's hierarchy of needs with the Big Five traits, offering insights into AI's impact on human development and self-worth in the context of pressing cybersecurity concerns.

Literature Review / Background

Generative AI

There has been a notable surge in popularity with AI, especially within the domain of generative AI (van der Zant et al., 2013) which has experienced a remarkable expansion towards the end of 2022. Launching of user-friendly applications such as ChatGPT, Dall-E and Midjourney which leverages LLMs marks a significant development within the utilization of AI used for generating content (García-Peñalvo & Vázquez-Ingelmo, 2023). Broader audiences have been enabled by these advancements to rapidly produce content

that imitates human-like texts, images and even music with remarkable realism (García-Peñalvo, 2023). The research of García-Peñalvo & Vázquez-Ingelmo, (2023) defines “Generative AI” in layman’s terms as the generations of concrete outputs (text, images, codes, models, and audio) by means of AI-driven tools. Having defined the term generative AI, our research can now turn its attention to a critical evaluation of the benefits and risks associated with generative AI.

Benefits of generative AI

Generative AI significantly enhances individual capabilities, offering profound benefits for personal development (Sætra, 2019). Augmenting predictive and decision-making skills grants individuals greater autonomy, enabling them to undertake more complex and creative tasks more efficiently (Kumar, 2019). This shift reduces the need for extensive managerial supervision and elevates the value of high-skilled labor, highlighting the technology's role in complementing rather than displacing human intelligence. For individuals, adopting generative AI tools can lead to opportunities for innovation and service enhancement (Babina, Fedyk, He, & Hodsons, 2023), directly contributing to career advancement and job satisfaction. Moreover, the potential of generative AI to improve productivity across a broad spectrum of skills suggests a future where individuals can leverage these technologies to unlock new career paths and opportunities, even for those with generalist backgrounds. Generative AI reshapes the professional landscape, empowering individuals to achieve tremendous career success and fulfillment (Kumar, 2019).

While the benefits of generative AI are profound, it is crucial to consider the potential downsides. We will now shift our focus on the risks associated with generative AI at an individual level as these risks become essential to mitigate potential negative impacts of the technological advancement of AI on individual self-worth.

Security risks of generative AI

The research of Sætra, (2023) sorted the potential pitfalls of generative AI into three levels (societal, organizational, and individual level). For the purpose of our research, we will only focus on the micro level (the individual). When exploring generative AI previous research indicates three main potential risks individuals might face concerning AI and the impact thereof on their individual worth.

Cognitive atrophy: just as many of us are no longer as good at mental arithmetic as we once were because we have learned to delegate it to our calculators, tasks that require effort and creativity may appear to shrivel in the face of AI (Sætra, 2019). The study of Veselovsky, Ribeiro & West (2023) found that crowd workers on MTurk widely made use of LLMs to summarize work, leading to serious concerns regarding the dilution of the human factor in crowdsourced text data.

Risks of Manipulation: With greater fluency in human interaction, as well as the ability to reliably simulate believability, generative AI could also heighten risks of manipulation (Sætra & Mills, 2022). Lab trials and internal industry insights at OpenAI have garnered attention for the potential of generative AI systems optimized for vector search to manipulate human psychology and perception to achieve their goals (Ngo et al., 2023). While often harmless, these behaviors can lead to troubling outcomes, as illustrated by an event in April 2023. The German magazine, *Die Aktuelle*, announced what it alleged was the inaugural interview with Formula 1 legend Michael Schumacher after his severe brain injury from a skiing accident in 2013. It was soon revealed that the interview was an AI impersonation of Schumacher, purportedly created by the website character.ai, resulting in the dismissal of the magazine's editor (Shevlin, 2022). Thus far, the direct causes of harm (e.g., suicides) attributed to LLMs have been relatively few, but fears among industry experts are that there is a risk that this may change in the future (Sætra, 2023).

Substitution of Human Partners: Generative AI also poses the risk of making AI preferable to humans as intimate partners (Sætra, 2022). Platforms for AI companionship, such as Replika, an upcoming companion robot development, indicate a future in which AI becomes the source of care, fun, and intimacy. Granting humans bypass to the hard work of being in human relationships and depriving them of the experience of seeking out human partners, and of cultivating the virtue of patience (Sætra, 2023). The research of Shevlin (2022) found that users’ prompts have been leaked to other LLM platforms. These concerns are especially significant for generative AI, as users of platforms like Replika often share highly confidential personal details.

The Big Five Personality Traits

The Big Five Personality Traits – Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism as defined by Digman, (1990) represent a widely accepted framework for understanding and measuring personality variations (Frauenstein et al., 2023). Considering the rapid integration of AI

into nearly every aspect of daily living, it is of utmost importance to examine the role of how personality influences individuals' perception, interaction, and satisfaction with generative AI.

Matthews et al. (2021) propose that the Big Five traits predict outcomes such as influence (Extraversion), stress vulnerability (Neuroticism), and career advancement (Conscientiousness) in the context of AI interaction. The Cognitive Adaptive Theory of Traits (CATT) suggests that these traits adapt to environmental challenges, including technology-driven threats like job displacement by AI or social media ostracism, indicating an evolution of traits like Neuroticism alongside technological advancements.

Personality impacts how individuals perceive and engage with AI. Open individuals view AI as a conduit for creativity, while those high in Neuroticism may have privacy and security concerns (Schepman & Rodway, 2023; Oksanen et al., 2020). Extraversion and Agreeableness correlate with technology usage, with extraverts drawn to AI chatbots for social interaction and agreeable individuals appreciating AI's potential for social cohesion (Bawack et al., 2021). These findings highlight the need for AI development to consider individual personality profiles to enhance user engagement and the effectiveness of AI applications.

Research further explores the relationship between the Big Five and attitudes toward AI, trust, and susceptibility to cyber threats. High Extraversion is associated with mixed attitudes towards AI, while Openness positively correlates with trust in AI. Neuroticism, equally, links to increased privacy concerns and vulnerability to phishing attacks (Schepman & Rodway, 2023; Oksanen et al., 2020; Frauenstein et al., 2023). These relationships underscore the complexity of personality traits in technology adoption and interaction.

Table 1 concisely explains the different personality types and their interaction with generative AI.

Table 1: Big Five Personality Traits and their interaction with generative AI

<i>Trait</i>	<i>Description</i>	<i>Previous literature</i>
<i>Openness to Experience</i>	View AI as a conduit for creativity, positively correlates with trust in AI.	Schepman & Rodway, 2023; Oksanen et al., 2020
<i>Conscientiousness</i>	Predicts career advancement in the context of AI interaction, indicating an adaptation to environmental challenges like job displacement.	Matthews et al., 2021; Cognitive Adaptive Theory of Traits (CATT)
<i>Extraversion</i>	Associated with influence and mixed attitudes towards AI, drawn to AI chatbots for social interaction.	Matthews et al., 2021; Bawack et al., 2021
<i>Agreeableness</i>	Correlates with technology usage for social cohesion, appreciating AI's potential for enhancing social interaction.	Bawack et al., 2021
<i>Neuroticism</i>	Indicates stress vulnerability and increased privacy and security concerns, links to vulnerability to phishing attacks.	Schepman & Rodway, 2023; Oksanen et al., 2020; Frauenstein et al., 2023

Human Worth

Human value is the inherent worth attributed to every individual solely based on their humanity, transcending specific attributes or instrumental considerations (Cherry, 1997). This intrinsic value, separate from skills or features, is universally assigned to all human beings, acknowledging their significance. The concept emphasizes a fundamental, impartial appreciation of being human, irrespective of individual characteristics, and underscores the challenges in applying this value within real-world contexts.

Integrating AI into various facets of life, mainly through the advancement of generative AI, represents a significant leap in natural language processing and *human-computer interaction*. These technologies align

with Maslow's hierarchy of needs, offering applications that range from fulfilling basic informational and safety needs to facilitating more complex desires for love, friendship, and personal fulfillment (Vaswani et al., 2017). However, the impact of AI on higher-level needs, such as self-actualization, invites a nuanced debate. Self-actualization which encompasses personal growth, creativity, and self-understanding. There are questions regarding AI's genuine capacity to enhance human capabilities in these domains.

This conversation extends into significant dilemmas concerning human worth, raising critical questions about AI's role in labor and societal structures (Borenstein, 2011; Liu & Zawieska, 2017; Makridakis, 2017). As AI assumes roles traditionally filled by humans, it necessitates a re-evaluation of human dignity and the equitable distribution of AI's benefits, thereby challenging the traditional notions of intrinsic human worth (Cherry, 1997).

At the heart of this ethical discourse is the inherent value attributed to every individual, which transcends specific attributes or instrumental considerations (Cherry, 1997). The work of Smuha (2021) delves into how AI applications can infringe upon this value, highlighting instances of individual harm through biased technologies and the erosion of collective interests. Furthermore, the "knowledge gap problem" signifies the difficulties individuals face in asserting their rights against the opacity of AI systems, potentially devaluing personal and societal worth.

The expansion of AI systems, characterized by the 'perfect storm' described by Curtis et al. (2022), introduces a significant risk to societal well-being. AI's powerful and invisible influence marks this condition, along with low public awareness, rapid deployment, and a gap between AI principles and actual practices. Such a scenario amplifies potential harms, including biases, discrimination, and privacy threats, underscoring the urgent need for trustworthy AI deployment and comprehensive legal frameworks to protect human worth (European Commission, 2021).

Given the urgency highlighted by previous research, a paradigm shift in assessing AI's impact is not just a necessity, but a pressing need. This shift must recognize the societal dimensions that preserve human worth, necessitating ethical considerations in AI development and a broader harm analysis within the current human rights discourse (Yeung, 2019a). As generative AI technologies advance, it is crucial to develop and apply AI in a manner that safeguards human-understood values and ethics. This approach ensures that advancements in AI not only enhance human life but also respect and uphold every individual's dignity and intrinsic worth.

The literature review has meticulously established a comprehensive backdrop against which the interplay of generative AI and human psychology can be examined. This examination is particularly insightful when viewed through the lens of cybersecurity and its implications on the fabric of our digital existence. The review has illuminated the profound enhancements AI can bring to individual capabilities and the significant risks it poses, including the potential for cognitive atrophy, manipulation, and the erosion of human connection. By incorporating the Big Five Personality Traits, this review also underscores how individuals' interactions with AI could shape their perceptions of self-worth and value. As we delve into the discussion, we return to our central research question: How does integrating generative AI, emphasizing cybersecurity risks and individual benefits, impact the expression of the Big Five personality traits that influence individuals' perceptions of their worth? This question will guide our exploration of the complex dynamics at play between emergent AI technologies and the multifaceted nature of human identity in the context of cybersecurity.

Discussion

Our investigation into generative AI, particularly through platforms like ChatGPT, Dall-E, and Midjourney, foregrounds the dual-edged sword of AI's role in society. While these platforms demonstrate AI's potential to mimic human output, they also highlight significant cybersecurity risks, including privacy breaches and psychological manipulation (García-Peñalvo & Vázquez-Ingelmo, 2023; Sætra, 2019; Sætra & Mills, 2022; Ngo et al., 2023). Our analysis extends beyond mere capability examination to assess how these advancements resonate with human worth, as framed by Maslow's hierarchy and evaluated through the lens of the Big Five personality traits (Digman, 1990; Matthews et al., 2021).

A novel insight from our research indicates that generative AI's seamless integration into daily life challenges our cognitive engagement and creative expression, potentially diluting individuality and self-worth. For instance, as AI systems assume roles requiring creativity and emotional intelligence, individuals may find their skills undervalued, decreasing self-esteem and questioning their place within society and the workforce.

Moreover, our study reveals a nuanced understanding of cybersecurity's crucial role in preserving individual dignity amidst AI's rise. Individuals with traits such as neuroticism are particularly susceptible to AI's privacy risks, underscoring the necessity for AI designs that are acutely aware of and responsive to such personality nuances (Schepman & Rodway, 2023; Oksanen et al., 2020). This realization underpins our proposal for a model that considers AI's capacity to fulfill human needs and prioritizes safeguarding personal and collective worth against potential cyber threats, providing a sense of reassurance about protecting individual worth in the face of AI's ascendance.

Our discussion culminates in synthesizing generative AI's implications for human worth. We advocate for a development pathway that respects the intricate balance between technological advancement and preserving human worth. Integrating Maslow's hierarchy with the Big Five personality traits illuminates a roadmap for ethical AI integration, emphasizing the importance of robust cybersecurity measures to protect individuals' integrity in an increasingly digitized existence.

In conclusion, this paper contributes to the discourse on generative AI by outlining a multidimensional model that balances AI's potential to enhance human life with the critical need for cybersecurity to protect individual worth. Our findings underscore the importance of a nuanced approach to AI development, one that respects the diversity of human personality and the unalienable value of human life, underscoring the urgency and significance of this approach in shaping the future of AI towards a horizon that enhances rather than compromises our shared human essence.

Model

Our model, depicted in **Figure 1**, theorizes the relationship between generative AI and Maslow's hierarchy of needs. We propose a conceptual mapping of AI's influence across this hierarchy, hypothesizing that AI can secure basic physiological needs (Vaswani et al., 2017) and extend to supporting efforts toward self-actualization. The 'AI side' of the model is informed by literature that recognizes AI's capacity to meet a spectrum of human needs from the basic to the complex (van der Zant et al., 2013; García-Peñalvo & Vázquez-Ingelmo, 2023). We align this progression with the Big Five Personality Traits, which form baseline determinants of individual engagement with AI, influencing perceptions, interactions, and satisfaction with AI technologies (Digman, 1990; Frauenstein et al., 2023; Matthews et al., 2021; Schepman & Rodway, 2023; Oksanen et al., 2020; Bawack et al., 2021). These interactions are critical to understanding how the integration of AI in daily living aligns with or challenges intrinsic human worth, which is a central concern (Borenstein, 2011; Liu & Zawieska, 2017; Makridakis, 2017).

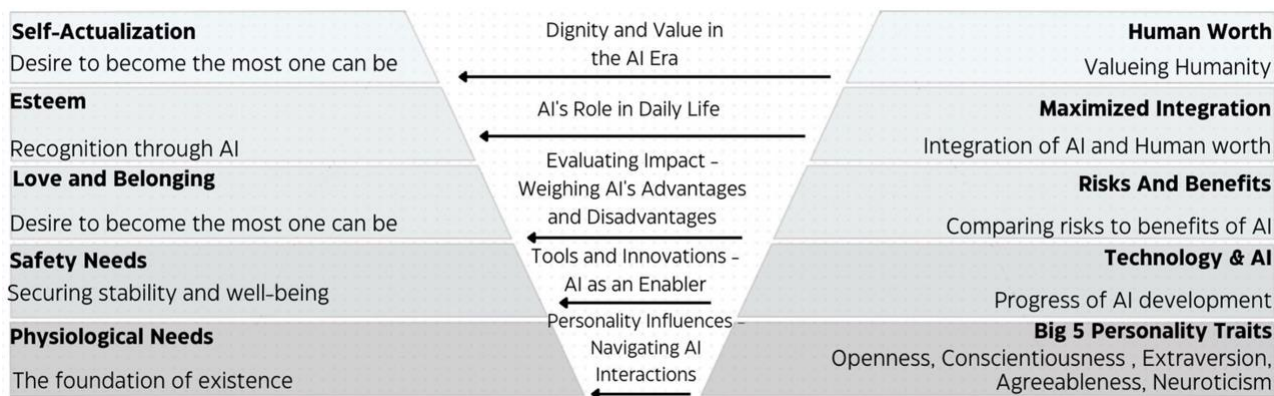


Figure 1: Adapted model of Maslow's Hierarchy of Needs

Table 2 builds upon the visual framework presented in **Figure 1** and offers a detailed analytical breakdown. It examines each layer, from the foundational Big 5 Personality Traits to the pinnacle of Self-Actualization Needs. It delineates how generative AI influences and interacts with each layer in the context of Human Worth and the Cybersecurity Implications.

Table 2: Interplay between Generative AI, Cybersecurity Implications, and Impact on Human Worth

Layer	Components	Cybersecurity Implications	Impact on Human Worth
Foundational Layer- Big 5 Personality Traits	Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism	Varied vulnerability to cyber threats based on traits. Neurotic individuals might be prone to phishing attacks due to emotionally and hastily responding to emails	Personality traits deeply influence self-esteem and self-concept. Interaction with AI can enhance self-worth by reinforcing positive traits or undermine it by exposing vulnerabilities.
Second Layer - Technology & AI	Progress of AI Development, Innovation and Tools	Security vulnerabilities in rapid AI development and new tools. A new chatbot platform might not have gone sufficient penetration testing which could result in hackers retrieving user data.	AI's capability to augment skills and autonomy can empower individuals, enhancing self-worth. Conversely, over-reliance on AI could diminish the perceived value of one's own skills.
Third Layer - Risks and Benefits	Cognitive Atrophy, Manipulation Risks, Substitution of Human Partners, Comparing Risks to Benefits	Over-dependence on AI leading to reduced-cybersecurity vigilance; potential for AI-driven manipulation.	Risks may lead to a decline in self-efficacy, while benefits can improve self-competence and worth. The balance affects the overall perception of one's value in an AI-integrated society
Fourth Layer - Maximized Integration	Integration of AI and Human Worth, Evaluating Impact	Integration may obscure security protocols, leading to complacency. Users might assume AI is secure by default, neglecting to activate two-factor authentication or to regularly update their passwords, thereby weakening security.	The extent to which AI supports or replaces human roles influences self-identity and worth, impacting individuals' valuation of their contributions to society.
Apex - Human Worth	Dignity and Value in the AI Era, AI's Role in Daily Life	Design and regulation must ensure AI systems protect user privacy and data, essential for upholding human dignity.	AI designed with individual privacy in mind reinforces personal dignity and self-worth, while intrusive AI undermines these fundamental human aspects.
Maslow's Hierarchy of Needs Alignment	Physiological to Self-Actualization Needs	Security of infrastructure for physiological needs; protecting data for self-actualization	AI's alignment with Maslow's hierarchy can either support or undermine one's journey towards self-actualization, heavily influencing self-worth by enabling or inhibiting personal growth and fulfillment.

Table 2 provides a nuanced framework detailing the interaction between individual personality traits and generative AI technologies. By incorporating a focused lens on cybersecurity, we critically assess AI's dual-edged potential. For instance, on a personal level, vulnerabilities could include unauthorized access to sensitive data, leading to identity theft or privacy breaches. A case in point is the risk of deepfake technologies being used to create convincing but fraudulent audiovisual content, directly threatening individual dignity and contributing to psychological manipulation. These concerns are not hypothetical but have been documented in various instances where individuals' personal information was exploited for malicious purposes, underscoring the urgent need for secure AI systems that prioritize data protection and user consent (Sætra, 2019; Sætra & Mills, 2022; Ngo et al., 2023; Sætra, 2023).

Moreover, the pervasive integration of AI in daily tasks can obscure traditional security protocols, making users more susceptible to phishing attacks or unwittingly contributing to misinformation. As AI becomes more ingrained in our lives, ensuring that these systems respect user privacy and data is paramount to maintaining human dignity, as emphasized by the European Commission (2021). Ultimately, our analysis in **Table 2** emphasizes that safeguarding cybersecurity is essential for protecting personal information and as a cornerstone of preserving human worth in the digital age.

Limitations and Future Research

Our inquiry into generative AI's influence on human psychology and worth through the lens of Maslow's Hierarchy and the Big Five personality traits (Digman, 1990; Matthews et al., 2021; Maslow, 1943; Vaswani et al., 2017) recognizes the limitations of not fully encompassing the breadth of human psychological responses to AI's evolution. The current approach may need to include emerging psychological trends shaped by digital landscapes. Additionally, the discussions on cybersecurity risks, though based on comprehensive literature (Curtis et al., 2022; García-Peñalvo & Vázquez-Ingelmo, 2023; Sætra, 2019; Sætra & Mills, 2022; Ngo et al., 2023), lack direct empirical user engagement data. Future studies will adopt the Self-Perception model (Harter, 2012) focusing on cybersecurity within AI contexts and employ the Big Five model (Digman, 1990) to assess the perceived impacts of generative AI on individual worth across global demographics. This approach will be vital in measuring the intrinsic worth individuals attribute to themselves in an AI-augmented reality. Given the rapid pace of technological advancement, our model will require ongoing refinements to stay current and reflect the dynamic interplay between AI, cybersecurity, and human value.

Contribution and Conclusion

Our investigation brings to light the dual capacity of generative AI, not only to pose significant cybersecurity threats but also to enhance human life in various aspects (Curtis et al., 2022; García-Peñalvo & Vázquez-Ingelmo, 2023; Sætra, 2019; Sætra & Mills, 2022; Ngo et al., 2023). By correlating Maslow's hierarchy with the Big Five personality traits, we provide a nuanced view of how AI influences human self-perception and worth, indicating potential enhancements and the risk of reducing human worth to mere technological utility. AI's role in content creation and personal data management exemplifies this delicate balance, where the benefits of convenience and innovation might overshadow diminished creative effort and privacy erosion. Our research underscores the importance of human-centric AI development, emphasizing robust cybersecurity measures to protect against the misuse of personal data and the exploitation of individual vulnerabilities. Implementing transparent AI systems that empower users with data control can help maintain individual dignity and trust, reinforcing the intrinsic worth of each person.

As we advance into this digital era, our model advocates for a balanced approach toward AI integration, highlighting the need for AI technologies that honor human diversity and the intrinsic value of life. This perspective ensures that AI advancements enhance the collective and individual worth, fostering a future where AI supports human dignity and contributes to a deeper understanding of our shared humanity. This work sets a precedent for future research in the intersection of generative AI, cybersecurity, and human psychology, aiming for a society where technological progress aligns with and amplifies human values.

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