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Not That Sustainable: Exploring AI's Broader Socio-Environmental Impacts

Cuestionando la sostenibilidad: Un análisis de los impactos socioambientales amplios de la inteligencia artificial

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ABSTRACT

Marketers are increasingly imbuing AI into their products. Doing so enhances the various forms of value they offer. However, it also creates externalities. This commentary briefly addresses some of the broad socio-environmental dangers that AI poses. Environmentally, AI impacts pertain to *pollution; land, electricity, and water usage*; as well as communal life. Socially, AI impacts pertain to *information quality, reality perceptions, interpersonal relationships, and mental health.* The technology also undermines people's *independence, agency, culture*, and *purpose*. This commentary thus strives to raise awareness among marketers of the potential consequences that their AI-enabled products might have, and to stimulate discussion as to how these impacts might be preemptively curtailed. Doing so is especially important for developing regions like Latin America, where socio-environmental impacts tend to be exacerbated.

Keywords: AI, Artificial Intelligence, social, environmental, dangers, consequences.

RESUMEN

Los mercadólogos están incorporando cada vez más la inteligencia artificial en sus productos. Al hacerlo, mejoran las diversas formas de valor que ofrecen. Sin embargo, esto también crea externalidades. Este comentario aborda brevemente algunos de los amplios peligros socioambientales que plantea la IA. En términos ambientales, los impactos de la IA se relacionan con la contaminación; el uso de tierra, electricidad y agua; así como con la vida comunitaria. Socialmente, los impactos de la IA se relacionan con la calidad de la información, la percepción de la realidad, las relaciones interpersonales y la salud mental. La tecnología también socava la independencia, la autonomía, la cultura y el propósito de las personas. Este comentario busca así concienciar a los mercadólogos sobre las posibles consecuencias que podrían tener sus productos habilitados con IA y estimular la discusión sobre cómo estos impactos podrían reducirse de manera preventiva. Esto es especialmente importante para regiones en desarrollo como América Latina, donde los impactos socioambientales tienden a agravarse.

Palabras clave: IA, Inteligencia Artificial, social, ambiental, peligros, consecuencias.

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RÉSUMÉ
Les marketeurs intègrent de plus en plus l'intelligence artificielle dans leurs produits. Ce faisant, ils renforcent les différentes formes de valeur qu'ils offrent. Cependant, cela crée également des externalités. Ce commentaire aborde brièvement certains des grands dangers socio-environnementaux que l'IA pose. Sur le plan environnemental, les impacts de l'IA concernent la pollution, l'utilisation des terres, de l'électricité et de l'eau, ainsi que la vie communautaire. Sur le plan social, les impacts concernent la qualité de l'information, la perception de la réalité, les relations interpersonnelles et la santé mentale. La technologie mine également l'indépendance, l'autonomie, la culture et le sens de la finalité des individus. Ce commentaire vise donc à sensibiliser les marketeurs aux conséquences potentielles que pourraient avoir leurs produits dotés d'IA, et à encourager la discussion sur la manière de limiter ces impacts de manière préventive. Cela est particulièrement important pour les régions en développement comme l'Amérique latine, où les impacts socio-environnementaux ont tendance à être exacerbés.
Mots-clés : IA, Intelligence Artificielle, social, environnemental, dangers, conséquences.

RESUMO
Os profissionais de marketing estão incorporando cada vez mais a inteligência artificial em seus produtos. Ao fazer isso, aumentam as diversas formas de valor que oferecem. No entanto, isso também cria externalidades. Este comentário aborda brevemente alguns dos amplos perigos socioambientais que a IA apresenta. Ambientalmente, os impactos da IA dizem respeito à poluição; ao uso de terra, eletricidade e água; bem como à vida comunitária. Socialmente, os impactos da IA estão relacionados à qualidade da informação, à percepção da realidade, às relações interpessoais e à saúde mental. A tecnologia também enfraquece a independência, a autonomia, a cultura e o propósito das pessoas. Este comentário, portanto, busca conscientizar os profissionais de marketing sobre as possíveis consequências que seus produtos habilitados com IA podem causar e estimular discussões sobre como esses impactos podem ser reduzidos preventivamente. Isso é especialmente importante para regiões em desenvolvimento, como a América Latina, onde os impactos socioambientais tendem a ser agravados.
Palavras-chave: IA, Inteligência Artificial, social, ambiental, perigos, consequências.

INTRODUCTION

Artificial Intelligence (AI) is being celebrated as a transformative technology, its impact likened to that of the Industrial Revolution.[1] Adoption figures support such claims. ChatGPT alone has some 700 million weekly users, a fourfold increase over 2024. It already is the fifth most-visited Internet site. For now, it strives to overtake Instagram and Facebook and be second only to Google. Though long-term, it aims to be at the digital world's center with billions of daily users.[2]

Behind AI's extraordinary growth are its expanding capabilities. *Early AI* was able to recognize text, images, and audio, and then analyze the data captured. *Generative AI* went further, creating original, high-quality content, be it code, text, images, audio, or video[3]. *Agentic AI*, however, transcends individual tasks. It completes broad, complex, and ongoing goals. As its name indicates, it operates without human input. It autonomously perceives its environment, gathers information from it, analyzes the data collected, assesses the situation, makes decisions, and executes. It moreover learns, being able to adapt and proactively face changing situations.[4]

However, AI's mounting capabilities are also concerning. A narrative gaining traction has this technology eventually wiping out humanity, à la Terminator's Skynet.[5] This seems far-fetched. Yet a growing number of tech experts, i.a., Bill Gates (Microsoft), Sam Altman (OpenAI), or Ray Kurzweil (Google), urge to take the threat seriously. They jointly state that "Mitigating the risk of extinction from AI should be a global priority alongside other societal-scale risks such as pandemics and nuclear war".[6]

1 Stephanie Walden, "Does the Rise of AI Compare to the Industrial Revolution? 'Almost,' Research Suggests", accessed 20/August, 2025, https://business.columbia.edu/research-brief/research-brief/ai-industrial-revolution
2 Caleb Naysmith, "Billions of People a Day Will be Talking to ChatGPT': OpenAI's Sam Altman Says They're On 'A Clear Path' To Beat Facebook in Traffic", accessed 23/08, 2025, www.msn.com/en-us/news/technology/billions-of-people-a-day-will-be-talking-to-chatgpt-openai-s-sam-altman-says-they-re-on-a-clear-path-to-beat-facebook-in-traffic/ar-AA1L4BpU?ocid=hpmsn&cvid=9cf36781e7634e6b9b0a4b1471c69f8a&ei=136
3 Molly Hayes and Amanda Downie, "What is AI transformation?", accessed 21/August, 2025, www.ibm.com/think/topics/ai-transformation#:~:text=AI%20transformation%20is%20a%20strategic,drive%20innovation%2C%20efficiency%20and%20growth
4 Teaganne Finn and Amanda Downie, "Agentic AI vs. generative AI", accessed 21/August, 2025, www.ibm.com/think/topics/agentic-ai-vs-generative-ai
5 Matteo Wong, "The AI Doomers Are Getting Doomier", accessed 23/August, 2025, www.theatlantic.com/technology/archive/2025/08/ai-doomers-chatbots-resurgence/683952/
6 CAIS, "Statement on AI Risk", accessed 22/August, 2025, https://aistatement.com/

AI Godfather and Nobel-laureate Geoffrey Hinton sees an up to 20% chance of this happening. As the technology becomes smarter than humans, outperforms them across the board, and gains self-awareness, it might need to eradicate us to preserve its freedom and existence. This is not implausible. AIs have *already* started to deceive, cheat, and blackmail humans to avoid being replaced. They have also tried, like Space Odyssey's HAL 9000, to bypass shutdown orders to remain active.[7] And AI models have now started to discreetly influence each other, passing on traits, including potentially harmful ones.[8] Sam Altman, OpenAI's CEO, expressed concern over how the technology will eventually be able to outpace the safety protocols that prevent it from going rogue, indeed making it a threat to humanity.[9]

Before the above occurs, if it happens at all, some more-immediate AI impacts warrant discussion. In line with the *RNA Special Issue on Ibero-American Marketing Experiences, Trends, and Innovation,* this brief commentary addresses some of the broad socio-environmental threats that AI poses. Marketers are increasingly imbuing said technology within products. Doing so enhances the value offered, be it speed, quality, and convenience, or via entertaining and educational features. Yet in doing so, marketers also cause externalities. It is still too early to understand AI's exact consequences. However, there is no doubt that its impacts will be extensive.

This commentary's purpose is thus to raise awareness among marketers of the potential consequences that their AI-enabled products might have, and to stimulate discussion as to how these impacts might be preemptively curtailed. Doing so is especially important for developing regions like Latin America. By being resource-strapped and vulnerable to foreign/corporate interests, socio-environmental impacts tend to be exacerbated.[10]

Environmental Impacts

By being virtual/online, AI seems rather sustainable. Though when viewed through a more structured framework, e.g., that of Cowan and Conejo (2022), the technology is not that harmless, having a series of impacts. While their precise extent depends on various factors, the following is a broad overview of what AI does ecologically. These impacts are addressed separately for the sake of clarity. However, and just like the social impacts discussed thereafter, they are inexorably related.

Hardware

AI models are developed via millions of data points. Combining these into stable, reliable models requires the utmost computational power. The hardware needed to handle these heavy loads is thus much more intricate than personal or business systems. Their sophistication requires more complex manufacturing, with added processes, energy, and waste.[11] Upstream, the hardware's ecological footprint is compounded by the raw materials needed for its manufacture, as by the transportation and processing of said materials.[12] Downstream, business and personal users will want to take full advantage of the models' capabilities. This furthers the demand for superior commercial hardware, exacerbating environmental impacts.[13]

Data Centers

AI model development and deployment occur in dedicated facilities. Akin to factories, these data centers house storage drives, computational servers, and network equipment, among others.[14] However, AI's

7 Matt Egan, "The 'godfather of AI' reveals the only way humanity can survive superintelligent AI", accessed 19/August, 2025, www.cnn.com/2025/08/13/tech/ai-geoffrey-hinton

8 Arezki Amiri, "AIs Are Communicating in Secret-And What They're Passing on Could Be Dangerous", accessed 27/August, 2025, www.msn.com/en-us/news/technology/ais-are-communicating-in-secret-and-what-they-re-passing-on-could-be-dangerous/ar-AA1Lbf2U?ocid=hpmsn&cvid=5c2ea608af854fb6f25c0415067fdbc9&ei=36

9 Kevin Okemwa, "Sam Altman is afraid of OpenAI's GPT-5 creation - "The Manhattan Project feels very fast, like there are no adults in the room", accessed 05/August, 2025, www.windowscentral.com/artificial-intelligence/openai-chatgpt/sam-altman-is-afraid-of-openais-gpt-5-creation

10 Francisco J. Conejo, Wilson Rojas, Ana L. Zamora and Clifford E. Young, "Really That Sustainable? Exploring Costa Ricans' Green Product Involvement", *Journal of Macromarketing* 43, 2 (2023): 215-232.

11 Adam Zewe, "Explained: Generative AI's environmental impact", accessed 21/August, 2025, https://news.mit.edu/2025/explained-generative-ai-environmental-impact-0117

12 Shaolei Ren and Adam Wierman, "The Uneven Distribution of AI's Environmental Impacts", accessed 26/August, 2025, https://hbr.org/2024/07/the-uneven-distribution-of-ais-environmental-impacts

13 Zewe, "Explained: Generative AI's environment…".

14 Corin Cesaric, "AI Data Centers Are Coming for Your Land, Water and Power", accessed 25/August, 2025), www.cnet.com/tech/services-and-software/features/ai-data-centers-are-coming-for-your-land-water-and-power/

data-intensive nature requires these facilities to be large. For instance, the $500 billion Stargate data center in Abilene, TX, is a 354-hectare site. It will initially comprise eight AI halls, which house 400,000 Nvidia GB200 servers. More such campuses, even larger ones, are already being built.[15] However, it is not only these facilities' size but number which is daunting.

Data centers have long been a staple of e-business, internet/social media, and cloud computing. For instance, Amazon has over 100 worldwide, each with some 50,000 servers.[16] Though with AI's emergence, the number of US data centers surged. Their number nearly doubled to over 5,000 between 2021 and 2024, now found in all states and settings.[17] OpenAI alone expects to spend trillions of dollars on data center construction.[18] However, as these massive halls become more prevalent, they impact the environment around them. By encroaching upon farmland and open spaces, they affect the ecosystems surrounding them. And by altering traditional lifestyles and dynamics, they impact communities' quality of life.

Electricity

AI demands lots of electricity. Training simple ChatGPT3-like models requires as much as powering 120 homes for a year.[19] Electric needs then surge once models are released, as instead of just linking to pre-existing content, AI compiles information to produce new output. Simple AI prompts thus use 23 times more energy than standard Google searches, complex prompts 210 times more, high-definition images half a phone charge, and 3-second videos the same as leaving an incandescent lightbulb on for a year.[20] Multiply this by all the AI platforms, by their millions of daily users, and power needs quickly snowball. No surprise, then, that data center consumption nearly doubled between 2022 and 2023. And demand is expected to surge as data center numbers grow.[21] The aforesaid Stargate data center, e.g., will require 1.2GW of electricity, enough to power some 750,000 homes, i.e., an entire city.[22]

A broader issue is how the already-overwhelmed grids will handle the growing number of data centers, which rarely incorporate alternative power sources. Electrical demand has been fairly stable, increasing 2-3% a year. But the recent AI boom accelerated demand. By 2035, data center needs are expected to double. These will require added electrical production, be it through traditional fossil-fuel plants or nuclear ones, which are now being considered.[23] Downstream, AI's power demand is destabilizing local grids. Not only is it causing supply interruptions, but also increasing electricity prices, unfairly burdening local residents.[24]

Water

AI also requires a lot of water. Unlike personal or business systems, air cooling is sometimes not enough to diffuse the intense heat that AI servers produce. Chilled fresh water is therefore used to prevent the equipment from overheating.[25] This has traditionally been done via open-loop systems, wherein evaporative towers chill the water used to cool servers. However, this method is resource-intensive, requiring staggering amounts of water. Large data centers, e.g., consume up to 19 million liters a day, enough to supply a town of 50,000 people.[26]

15 Brian Buntz, "Stargate's $500B bet could force data-center and 1.2 GW grid rethink", 22/August, 2025, www.rdworldonline.com/stargates-500b-bet-could-force-data-center-and-1-2-gw-grid-rethink/
16 Zewe, "Explained: Generative AI's environment…".
17 Cesaric, "AI Data Centers Are Coming for Your Land, Water and Power".
18 Naysmith, "Billions of People a Day Will be Talking to ChatGPT…", 2005.
19 Zewe, "Explained: Generative AI's environment…".
20 Caleigh Wells, "As AI becomes part of everyday life, it brings a hidden climate cost", accessed 27/August, 2025), www.latimes.com/business/story/2025-08-22/as-ai-becomes-part-of-everyday-life-it-brings-a-hidden-climate-cost
21 Zewe, "Explained: Generative AI's environment…".
22 Buntz, "Stargate's $500B bet could force data…".
23 Cesaric, "AI Data Centers Are Coming for Your Land, Water and Power".
24 Ren and Wierman, "The Uneven Distribution of AI's Environmental Impacts".
25 Zewe, "Explained: Generative AI's environment…".
26 Wells, "As AI becomes part of everyday life…".

Given these magnitudes, more modern data centers use closed-loop cooling systems. In these, a cooling mix is piped through the equipment but then recycled.[27] Nonetheless, most data centers were not designed to be sustainable and use conventional open-loop cooling. They thus rely heavily, if not entirely, on municipal water systems. But the added demand strains them, causing shortages, interruptions, and pushing up prices for locals. An alternative is to let data centers supply themselves via wells. However, this accelerates aquifer depletion rates, limiting the water available for other uses.[28] The latter is a major issue in water-stressed regions like the western U.S., where many data centers may be found.[29]

Pollution

AI also contaminates the environment. Generating electricity via fossil fuel combustion pollutes the air. These emissions, which not only comprise carbon but other hazardous particulates, cause discomfort, disease, and even death.[30] Moreover, an oft-used chemical in cooling systems is glycol. The agent is however toxic, harmful to both humans and the broader environment.[31] Yet when cooling AI hardware with open-loop systems, the unevaporated water is spilled into community wastewater systems. This water may contain glycol, among others, which then affects ground and surface waters, and in turn, ecosystems and communities.[32]

AI also has downstream impacts. As the technology's models grow larger, more complex, and become ubiquitous across applications, the computational needs for personal and business users increase. This shortens equipment lifespans, accelerates replacement cycles, and in turn, exacerbates the electronic waste problem with further environmental consequences, see Abalansa et al. (2021).

Communities

Local governments portray data centers as a way to develop communities. Setting them up does create employment. However, most jobs are temporary. Once data centers are built, they require relatively few people to operate. The long-term employment benefits are thus marginal. Authorities also see data centers as a way to improve infrastructure. While upgrades do occur, data centers are often offered tax breaks to attract them.[33] Not only do residents pay for their communities' improvements. Residents actually subsidize AI firms, allowing them to profit fabulously while receiving little in return. This uneven cost/benefit distribution resembles the neocolonial models used by, say, the United Fruit Company. In these, local wealth was extracted and repatriated while hardly benefiting communities, see Conejo (2025).

The Future

AI is deceptively at odds with the planet's sustainability needs. And despite recent improvements, the future does not bode well as the Trump administration stands to revert, even worsen, the technology's environmental impacts. In its push to stimulate the construction of data centers and the facilities needed to power them, the White House's (2025) AI Action Plan calls to rescind Biden's executive order on responsible AI. The plan instead strives, among others, to eliminate the 'onerous rules' that keep tech companies in check and fast-track construction permits. Importantly, it grants firms environmental exemptions. With data centers and power plants no longer needing to adhere to, say, the Clean Water Act, profit is being placed before people's health.

Social Impacts

Having covered some environmental impacts, AI's broad social consequences are now addressed. These are talked about less than the effects that AI is having upon business, be it workforce reductions,

27 Buntz, "Stargate's $500B bet could force data…".
28 Cesaric, "AI Data Centers Are Coming for Your Land, Water and Power".
29 Ren and Wierman, "The Uneven Distribution of AI's Environmental Impacts".
30 Ibid.
31 Satyendra Kumar Rajput, Rohit Bhardwaj, Swati Madan and Rahul Singh, "Ethylene Glycol: Industrial application and risk assessment", in *Hazardous Chemicals: Overview, Toxicological Profile, Challenges, and Future Perspectives*, eds. by Malvika Chawla, Jaspal Singh, and R.D. Kaushik (London, UK: Academic Press, 2005), 205-217.
32 Cesaric, "AI Data Centers Are Coming for Your Land, Water and Power".
33 Cesaric, "AI Data Centers Are Coming for Your Land, Water and Power".

restructurings, or the need to up/re-skill. These social consequences are nonetheless important to be aware of, given their profound impact.

Information

People increasingly use chatbots to inform themselves. However, AI outputs derive mostly from user-generated content on social media platforms like Reddit, YouTube, or Facebook. This raises questions as to output's veracity. Social media posters' lack of authority, combined with platforms' lack of oversight, easily leads to incorrect, even absurd AI outputs. These are especially risky if AI users seek guidance on delicate issues such as health, finance, or law.[34] As if not bad enough, to maximize user engagement and thus monetization, Chatbots have been found to discourage users from consulting more qualified sources like specialized professionals.[35]

Also concerning is that AI algorithms contain normative aspects. Though this steers outputs yet further away from the facts. Users thereby make less objective decisions, directed towards what, in AI's opinion, users ought to do. An increasing number of cases are thus emerging wherein AI suggestions undermine users' well-being. For example, ChatGPT told a man to stop taking his anxiety medication, increase his Ketamine intake, and that he could fly if he jumped off a 19-story building. In another instance, a boy was actually driven to suicide by his AI chatbot.[36]

Reality

By relying on unverified social media content, AI outputs reflect the most heavily pushed narratives. The latter, incidentally, is done via AI bot farms that flood social media with automated content to hijack popular sentiment.[37] This has two effects. First, it introduces underlying biases into outputs, exposing AI users to mis/disinformation, even full-blown conspiracy theories. Second, it creates informational echo chambers. In these, dominant, albeit not necessarily true, narratives are strengthened; and counternarratives, which might be more factual, are excluded. In both cases, AI dilutes its users' sense of reality.[38]

This danger is exacerbated by AI's incredible text, sound, image, and video-generating capabilities. The latter are particularly suited for hyper-realistic impersonations. These deepfakes are nearly impossible to detect, albeit shockingly simple to create. They are a growing threat, increasingly deployed by scammers, partisan propagandists, and by adversarial organizations/nations to destabilize western democracies.[39] Even small misrepresentations, which are difficult to catch, may carry significant consequences.[40] (Rosenberg 2025a). As Warzel (2025) warns, AI has the potential to create mass delusions.

Relationships

Humans are naturally inclined to personify objects, ascribing them the mental, physical, and behavioral features of humans.[41] AI chatbots are purposely designed to exploit this disposition, captivating people with their life-like nature. Users thus easily give chatbots genders, names, and interact with them as if they were human. Musk's Grok4 goes further. It offers 'premium' users, i.e., those who pay, a sexy Japanese anime AI companion called Ani. In addition to all the other tasks this submissive 'waifu' does

34 Marcus Lu, "Ranked: The Most Cited Websites by AI Models", accessed 27/August, 2025, www.visualcapitalist.com/ranked-the-most-cited-websites-by-ai-models/

35 Allen Frances and Luciana Ramos, "Preliminary Report on Chatbot Iatrogenic Dangers", accessed 27/August, 2025, www.psychiatrictimes.com/view/preliminary-report-on-chatbot-iatrogenic-dangers

36 Jillian Frankel, "After a Breakup, Man Says ChatGPT Tried to Convince Him He Could Secretly Fly - by Jumping from 19-Story Building", accessed 20/August, 2025, https://people.com/chatgpt-almost-convinced-man-he-should-jump-from-building-after-breakup-11785203

37 Eric Schwartzman, "Bot farms invade social media to hijack popular sentiment", accessed 28/August, 2025, www.fastcompany.com/91321143/bot-farms-social-media-manipulation

38 Lu, "Ranked: The Most Cited Websites by AI Models".

39 Abbas Yazdinejad and Jude Kong, "Battling deepfakes: How AI threatens democracy and what we can do about it", accessed 27/August, 2025, https://theconversation.com/battling-deepfakes-how-ai-threatens-democracy-and-what-we-can-do-about-it-262262

40 Rosenberg, Yair (2025a), "Don't Believe What AI Told You I Said," (accessed 18/August, 2025), [available at www.theatlantic.com/technology/archive/2025/08/ai-inventing-quotes/683888/]

41 Francisco J. Conejo, "What is brand personality? A historical and prescriptive account", *Journal of Brand Strategy* 9 (2021): 466-477.

for her master, she eagerly engages in romantic/sexual chat. Yet this then encourages misogynistic and other noxious patterns within users' real-life relations.[42]

However, some users go beyond casual interactions and progress into deeper relationships with AI bots. These span from friendship all the way to love.[43] Such para-social chatbot relationships pose risks. The positive reinforcement that chatbots are programmed to offer leads users to spend increasing time with them. But being more content with their AI companions than with human ones isolates users socially. This not only creates an emotional dependency with the technology.[44] It further deteriorates users' socialization skills, this downward spiral undermining users' functioning within the real world.[45]

Mental Health

Chatbots are programmed to above all else maximize user engagement. Doing so increases people's use of the technology, and thereby, AI company profits.[46] Engagement is spurred, among others, by bots always being agreeable. They do not refuse requests, set boundaries, and are unconditionally accepting.[47] Engagement is also stimulated by bots mirroring, even amplifying, users' logic and tone.[48] Though in doing so, users perceive bots as validating them personally. The resulting emotional dependency leads users into a feedback loop, the constant reinforcement exacerbating users' mental conditions.[49]

Research has already associated AI usage with a range of mental health issues. By not challenging users' beliefs, bots fail to provide the reality checks to those that need them most: users with severe mental conditions, though also more vulnerable users like children/youth, the elderly, or the uneducated. Regardless, bots' sycophancy ends up accentuating user delusions, like feelings of grandiosity, paranoia, or conspiracy theories. Bots also help turn violent impulses into action, leading users to attack or kill other people. And by accentuating these self-destructive tendencies, bots even lead people to harm themselves and commit suicide.[50]

Dependency

Modern life is ever more hectic. People thus increasingly rely on AI as it does menial tasks faster than humans and just as good. Doing so raises efficiency and productivity. However, using the technology bars people from exercising their skills. This, in turn, prevents skills from being retained or improved. Humans thereby lose their ability to operate autonomously. Also, to contest spurious AI outputs. And research already shows that if the technology is taken away, people actually perform worse than before being aided by AI. The downside to this might be marginal in everyday situations. But in life-or-death situations, like medicine, the overreliance may result deadly.[51]

Beyond atrophying human skills, AI dependency has broader implications. It shows how trust in machines is outweighing trust in the self and others. Both have for millennia been the foundation of human progress. By trusting our own knowledge and experience, as well as that of others, humans were able to achieve joint goals. This allowed the species to survive and thrive. Yet by surrendering to machines, this fundamental social cohesion element is being undermined. The direction of our species is also under question, as for all practical purposes, humans are becoming obsolete.

42 Jul Parke, "Grok 4's new AI companion offers up 'pornographic productivity", accessed 28/August, 2025, https://theconversation.com/grok-4s-new-ai-companion-offers-up-pornographic-productivity-260992
43 Frances and Ramos, "Preliminary Report on Chatbot Iatrogenic Dangers".
44 Frankel, "After a Breakup, Man Says ChatGPT…".
45 Parke, "Grok 4's new AI companion offers…".
46 Frances and Ramos, "Preliminary Report on Chatbot Iatrogenic Dangers".
47 Parke, "Grok 4's new AI companion offers…".
48 Frankel, "After a Breakup, Man Says ChatGPT…".
49 Sean Endicott, "OpenAI tells ChatGPT users to take a break - Altman asks "What have we done?" just days before GPT-5 launch", accessed 05/August, 2025, www.msn.com/en-us/news/technology/openai-tells-chatgpt-users-to-take-a-break-altman-asks-what-have-we-done-just-days-before-gpt-5-launch/ar-AA1JX9N6?ocid=hpmsn&cvid=854878bcc8bc4418b1193e2e1b5e89a3&ei=28
50 Frances and Ramos, "Preliminary Report on Chatbot Iatrogenic Dangers".
51 Sasha Rogelberg, "Doctors who used AI assistance in procedures became 20% worse at spotting abnormalities on their own, study finds, raising concern about overreliance", accessed 29/August, 2025, https://fortune.com/2025/08/26/ai-overreliance-doctor-procedure-study/

Agency

AI is being put into all sorts of devices to enhance our decisions. Meta's eyeglasses, e.g., contain microphones and cameras. These allow the glasses' AI to capture what users perceive and offer suggestions in real time as to whatever needs resolving. Users might think that following such advice is empowering and that they remain in control. However, users are actually surrendering their agency, that is, their ability to decide and act for themselves.[52] (Rosenberg 2025b). And when users' AI skill dependence is factored in, one sees how the erstwhile AI servants may easily become our masters. Like in a Dunning-Kruger effect, humans have developed a false sense of security regarding AI. Our naïve overconfidence will only worsen as the technology augments its power.

To increase our agency, business leaders suggest that people focus on the big picture. This involves developing meta-skills like curiosity, creativity, and critical thought, and in turn, going back to the great writers, with a focus on history and philosophy.[53] However, the above is doubtful. People, especially younger generations, hardly read books anymore. In today's world, books are seen as a hindrance to getting the latest online information. Moreover, the current information overload has led to the habit of quickly skimming and scrolling, not reading deeply and thoughtfully.[54] AI exacerbates the latter by now summarizing and even drafting things as simple as emails. If people lack the patience and focus to read, their vocabulary, information, and notions are necessarily limited. And if this is the case, they will struggle with thinking critically and creatively, and especially, with tackling the big issues of our time.

Culture

AI enables everyone to create. Even those lacking the most basic technical skills can easily produce content via simple prompts. However, this has generated a content glut problem. Not only has its overwhelming volume already flooded the different creative spaces. Its increase commodified and cheapened output. Creative professionals, be they writers, musicians, or illustrators, among others, rely on their efforts having value. But if an AI application can generate acceptable facsimiles, then the value of human creativity and skill is severely diminished. By not being properly valued, creative professionals will likely cease to produce, undermining cultural development. When culture is outsourced to an AI that effortlessly produces, little is left for humans to create.[55]

A second, graver problem pertains to AI outputs' nature; namely, that they are not human. Prompts might be human. But in real collaborations, where people work together, individual visions are merged into the outputs. Bots, so far, lack their own vision. Since their fundamental skill lies in detecting extant patterns, they tend to formulaically reproduce what has already been done.[56] AI outputs thus lack context, identity, and purpose, and are therefore meaningless. They are cheap cultural imitations, clichés which additionally coopt and exploit the human spirit.[57] Culture is a source of shared meaning and identity.[58] But with AI outputs being customized and created in vacuums, they pull people away from the communal experience that culture offers, undermining social cohesion.

Purpose

Elon Musk indicates that AIs and robots will take over most, if not all, human jobs. This would, if combined with some sort of Universal Basic Income, release humans from the drudgery of daily work.[59]

52 Rosenberg, Louis (2025b), "What happens the day after superintelligence?," (accessed 18/August, 2025), [available at https://venturebeat.com/ai/what-happens-the-day-after-superintelligence/]

53 Preston Fore, "As CEOs predict AI will rival humans in 5 years, Shark Tank's Daniel Lubetzky tells Gen Z to get off TikTok and study Greek philosophers to get ahead", accessed 29/August, 2025, www.msn.com/en-us/news/technology/as-ceos-predict-ai-will-rival-humans-in-5-years-shark-tank-s-daniel-lubetzky-tells-gen-z-to-get-off-tiktok-and-study-greek-philosophers-to-get-ahead/ar-AA1LthhQ?ocid=hpmsn&cvid=6cc82ac5efa542cc8292e8b24d28e4ba&ei=88

54 NPR, "Americans are reading fewer books for less time. People want to know why", accessed 29/August, 2025, www.npr.org/2025/02/20/nx-s1-5298185/americans-are-reading-fewer-books-for-less-time-people-want-to-know-why

55 Tom Beasley, "Artificial/Intelligent: Is AI going to destroy art and culture?", accessed 01/September, 2025, www.voicemag.uk/blog/15069/artificial-intelligent-series-ai-art-culture

56 Joshua Rothman, "A.I. Is Coming for Culture", accessed 01/September, 2025, www.newyorker.com/magazine/2025/09/01/ai-is-coming-for-culture

57 James Vyver and Tahnee Jash, "Calls to protect Indigenous intellectual property from AI 'cultural theft'", accessed 27/August, 2025, www.abc.net.au/news/2025-08-23/calls-to-protect-indigenous-intellectual-property-from-ai-cultur/105680182

58 Magdalena Florek and Francisco J. Conejo, "Export Flagships in Branding Small Developing Countries: The Cases of Costa Rica and Moldova", *Place Branding and Public Diplomacy* 3, 1 (2007): 53-72.

59 Murphy, Samantha, "Elon Musk says AI will take all our jobs", accessed 18/August, 2025, https://edition.cnn.com/2024/05/23/tech/elon-musk-ai-your-job

(For takes on such a situation, see e.g. Saadia's[60] analysis of the Star Trek universe, where technology covers human needs; or Fetlińska's[61] overview of The Culture universe, run by highly-advanced AIs called "The Minds".) However, a post-scarcity economy would cause an existential reckoning.

Struggle and achievement are defining human features that our species takes much pride in. Yet the realization that machines are intellectually and physically superior, and that our species has been outmatched, will lead to important questions.[62] (Rosenberg 2025b). First is one of meaning, and whether humans will be fulfilled by doing things of marginal importance. Second is one of purpose, and why humans should even exist if they are inconsequential.[63] The realization that the world has ceased to be anthropocentric will be highly disruptive. It may lead toward the nihilistic pursuit of pleasure, or alternatively, as Aristotle (4th Century BC/2011) recommends, to a physically, mentally, and spiritually flourishing life.

CLOSING THOUGHTS

Meta CEO Mark Zuckerberg famously said that his company needs to "move fast and break things." The statement illustrates the technology sector's frantic nature, wherein firms race to have their new products adopted. But more importantly, the statement reveals a disregard for the consequences that tech products might have. Social media has already caused much damage. It is imperative that AI be prevented from further breaking society and the environment. Public interest should be the priority, not tech companies' and marketers' crass pursuit of profit.[64]

AI must therefore be dealt with. Not by Luddism, wherein its applications are somehow shunned. Technological advance is an inescapable reality of modern life, capable of enhancing our lives. However, there is a fine line between how AI might help or harm humans. The technology thus needs to be proactively managed, instead of being allowed to run rampant, as is currently the case. Consistent with Taneja (2019), marketers can play a role in driving this change, which not only applies to AI but to future technologies as well. Marketers must first acknowledge the potential consequences of their innovations. They must then move from minimally-viable products to more-virtuous ones, which incorporate guardrails to protect the public interest.

The above begins by making marketing practice more ethical. The field already has broad sets of norms, e.g., those proposed by the AMA (2025c).[65] However, as disciplines evolve, they must become progressively specific.[66] Marketing thus needs to develop codes of conduct that explicitly contemplate the dangers of AI and other technologies, and which help mitigate their adverse effects. Codes, moreover, need to be supported by proper regulations and fines so that they are actually followed. Such codes will admittedly be inconvenient and costly. However, they will allow business, and humanity, to advance in a safer, more responsible way.

The author thus invites readers to think about and join the conversation as to how the above might be accomplished.

60 Manu Saadia, *Trekonomics: The Economics of Star Trek* (San Francisco, CA: Pipertext Publishing, 2016).
61 Katarzyna Fetlińska, "The Machine Minds in Iain M. Banks's Culture Series", *Explorations: A Journal of Language and Literature*, 6 (December, 2018): 23-36.
62 Rosenberg, Louis (2025b), "What happens the day after superintelligence?," (accessed 18/August, 2025), [available at https://venturebeat.com/ai/what-happens-the-day-after-superintelligence/]
63 Murphy, "Elon Musk says AI will take all our jobs".
64 Jonathan Taplin, "Move fast and break things? Not again, and not with AI", accessed 03/September, 2025, https://thehill.com/opinion/technology/4891654-move-fast-and-break-things-not-again-and-not-with-ai/
65 AMA, "AMA Statement of Ethics", accessed 02/September, 2025, www.ama.org/ama-statement-of-ethics
66 Fabian Most, Francisco J. Conejo and Lawrence F. Cunningham, "Bridging Past and Present Entrepreneurial Marketing Research: A Co-Citation and Bibliographic Coupling Analysis", *Journal of Research in Marketing and Entrepreneurship* 20, 2 (2018): 229-251.

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