Original Article

AI and environmental impact: a thematic analysis of the discursive contradictions produced by ChatGPT and Gemini

IA e impacto ambiental: Uma análise temática das contradições discursivas produzidas por ChatGPT e Gemini

IA e impacto ambiental: Un análisis temático de las contradicciones discursivas producidas por ChatGPT y Gemini

ⓘ *Simone Evangelista*

ⓘ *Renato Guimarães Furtado*

Universidade do Estado do Rio de Janeiro (UERJ), Programa de Pós-Graduação em Comunicação, Rio de Janeiro (RJ) - Brasil.

Abstract

The study analyzes the discursive contradictions in the responses of the ChatGPT and Gemini language models on the environmental impact of artificial intelligence (AI). Based on a thematic analysis, responses generated in "interviews" with prompts about the relationship between AI and the global climate crisis were examined. Three themes were identified: corporatism, belief in the potential of technology, and shared responsibility. It is concluded that algorithmic textualities reinforce imaginaries that shift environmental responsibilities, contributing to the naturalization of the ecological impacts of AI. Finally, the urgency of the debate on eco-media literacy in the field of Communication is emphasized.

Keywords: Artificial intelligence; environmental impact; technosolutionism; thematic analysis; communication.

Resumo

O estudo analisa as contradições discursivas nas respostas dos modelos de linguagem ChatGPT e Gemini sobre o impacto ambiental da inteligência artificial (IA). A partir de uma análise temática, foram examinadas respostas geradas em "entrevistas" a partir de prompts sobre a relação entre IA e crise climática global. Identificamos três temas: corporativismo, crença no potencial da tecnologia e responsabilidade compartilhada. Conclui-se que as textualidades algorítmicas reforçam imaginários que deslocam responsabilidades ambientais, contribuindo para a naturalização dos impactos ecológicos da IA. Ressalta-se, por fim, a urgência do debate sobre letramento ecomidiático no campo da Comunicação.

Palavras-chave: Inteligência artificial; impacto ambiental; tecnossolucionismo; análise temática; comunicação.

Resumen

El estudio analiza las contradicciones discursivas en las respuestas de los modelos de lenguaje ChatGPT y Gemini sobre el impacto ambiental de la inteligencia artificial (IA). A partir de un análisis temático, se examinaron las respuestas generadas en «entrevistas» a partir de prompts sobre la relación entre la IA y la crisis climática global. Identificamos tres temas: corporativismo, creencia en el potencial de la tecnología y responsabilidad

CRediT

- Conflict of Interest: The authors certify that they have no commercial or associative interests that could represent a conflict of interest regarding this manuscript.
- Author Contributions: Conceptualization, Data Curation, Writing – original draft, Writing – review and editing: S. Evangelista and R. Furtado. Formal Analysis: S. Evangelista.
- Funding: This study received funding from the Rio de Janeiro State Research Support Foundation (FAPERJ) and the Prociência/UERJ program.

Use of Artificial Intelligence (AI):
During the preparation of this work, the authors used the ChatGPT and Gemini tools for data collection. After using these tools/services, the authors reviewed and edited the content as necessary and assume full responsibility for the publication's content.

Data Availability:
All data supporting this article are included in the body of the text.

INTERCOM encourages data sharing; however, in compliance with ethical guidelines, it does not require the disclosure of any means of identifying research participants, thereby preserving their privacy. The practice of open data aims to enable the reproducibility of results and ensure full transparency of published research outcomes, without requiring the identification of research subjects.

Inclusive Language:
The authors employ inclusive language that acknowledges diversity, demonstrates respect for all individuals, is sensitive to differences, and promotes equal opportunities.

Plagiarism Check:
Intercom Journal submits all documents approved for publication to plagiarism verification using a dedicated tool.

compartida. Se concluye que las textualidades algorítmicas refuerzan imaginarios que desplazan las responsabilidades ambientales, contribuyendo a la naturalización de los impactos ecológicos de la IA. Por último, se destaca la urgencia del debate sobre la alfabetización ecomediática en el campo de la Comunicación.

Palabras clave: Inteligencia artificial; impacto ambiental; tecnosolucionismo; análisis temático; comunicación.

Introduction

The widespread and rapid adoption of artificial intelligence (AI) tools has sparked a significant public debate on issues such as their impact on job displacement, plagiarism, the spread of misinformation, and discrimination (Hurst, 2023). In this paper, we explore an invisible but no less harmful facet of AI expansion: its environmental impact. Despite the ethereal imagery of the "cloud," AI requires a polluting infrastructure, from mining to data processing for training and using artificial intelligence models (Freitag et al., 2021). Considered a key player in contemporary geopolitical disputes, the developmental race for artificial intelligence predicts a significant increase in energy demands related to technology, often reinvigorating colonialist dynamics (Furtado and Evangelista, 2024).

We start from the following question: what meanings emerge in the responses presented by generative AI systems when faced with *prompts* related to their own environmental impact? We applied thematic analysis (Braun and Clarke, 2006) to the responses obtained in interactions with the ChatGPT and Gemini models, considering that image and text generation algorithms produce discursive effects capable of organizing meanings (Araújo, 2025). Before presenting the results of the analysis, we will discuss, in the next topic, the socio-technical imaginaries about AI and the environmental impact of such tools.

AI: Artificial intelligence, environmental impacts

Institutional discourses on technology mobilize archetypes and mythical images, sustaining the imaginary that, with machines, it will be possible to overcome human limits (Felinto, 2005). AI, despite occasional warnings about the risks of its indiscriminate adoption, is gaining increasing prominence in these discourses, often being pointed to as a solution to the great dilemmas of our time (Katzenbach, 2021).

This technocentric stance brings technological rationality to the forefront, as if technology were inevitable and therefore unquestionable (Feenberg, 2001). In this scenario, technological devices are mobilized to maintain relations of political and economic domination. In practice, however, while they are touted as panaceas, such tools serve only to amplify the power of their owners (Vieira Pinto, 2005). This is happening today in the AI landscape: even though we may encounter resistance to its implementation, the prevailing perspective is one of the supposed superiority of this technology (Sadin, 2019).

Therefore, artificial intelligence, especially in the case of systems capable of generating text and images, positions technology (and its holders) as protagonists of technodeterminism. For this reason, a critical reading of technology is essential to disrupt the technodeterminist rhetoric of technological determinism. In the case of AI models capable of generating text and images, according to Ribeiro (2025), technodeterminism obscures more than it clarifies, endorsing a view that ignores the fact that all technology is shaped by social values, economic interests, and sociopolitical disputes. Instead of assuming that generative AI therefore follows its own course and that this is inevitable, it is a matter of recognizing that its development depends on human decisions. These decisions, we emphasize, can either expand democracy or reinforce technological oligarchies, depending on the unfolding of events and the correlation of forces of the actors involved in the process.

But resisting the rhetorical power of technodeterminism is a task made difficult by the fact that this imaginary is an offshoot of another, older, and already consolidated socio-technical imaginary: the one that anchored the creation and development of the internet and was renewed from libertarian beliefs about Web 2.0 (Van Dijck, 2013; Marwick, 2018). In this set of discourses, corporations mobilize values such as democracy, neutrality (of systems), and capacity for achievement (mainly of human actors) to legitimize their own technological apparatuses. This strategy simultaneously naturalizes the omission of information about the functioning of the algorithms that underpin these devices, often classified as "strategic unknowns" (Bucher, 2018, p. 56) by the companies that developed them. By purposely cultivating ignorance about algorithms, spreading the idea that they operate autonomously, corporations treat them as a black box, which contributes to the omission of the multiple interests (and privileges) related to their functioning (Bucher, 2018). In the wake of this process, digital platforms have come to occupy a central place in social organization (Gillespie, 2010), producing a type of knowledge that will be understood as the best way to deal with a world in constant transformation and opacity (Rieder, 2018).

These ideals are reinforced in discourses on AI, including in the cases of text and image generation systems; these discourses solidify the notion that artificial intelligence is capable of simulating and will eventually be able to surpass the cognitive capabilities of the human brain. This technodeterminist belief is based on the argument that AI has a supposed capacity for intelligent interpretation, free from human biases and imperfections. For this reason, such systems would be capable of solving our most complex problems, since, according to technosolutionist rhetoric, they can intervene objectively in the world (Crawford, 2021).

For this reason, we adopt the perspective of Kate Crawford (2021), who argues that artificial intelligence is neither artificial nor intelligent. First, AI systems depend on energy and material resources, as well as extensive development and training processes that involve human labor. Second, artificial intelligence tools do not possess intelligence, as they are neither autonomous nor capable of rationally discerning between pieces of information. AI "thinks" by interpreting data patterns.

It is essential to emphasize this view precisely so that we can counter the techno-solutionist view, which argues that it is enough to use cutting-edge technical devices to solve any problem encountered by humans (Morozov, 2013). This is especially important because, in times of widespread adoption of LLMs (*Large Language Models*), the discourse on the supposedly inherent benefits of AI is advancing rapidly. The massive use of tools such as ChatGPT and Gemini contributes to this phenomenon, simultaneously hindering the public's ability to understand not only the limitations and biases of these systems (Timponi & Lobão Evangelista, 2025) but also their environmental impacts.

In fact, the popularization of AI already has and may have even more decisive implications for the worsening of the global environmental crisis. As demonstrated by Crawford (2021), the construction of artificial intelligence systems requires the use of fossil fuels for the extraction of mineral resources that undergo processing, smelting, transportation, device production, and disposal in electronic waste dumps—often located in underdeveloped countries.

Another sensitive issue concerns the data required to train and use AI-based services. It is estimated that the data processing required to train an LLM is equivalent to five times the total emissions of a car throughout its lifetime – that is, more than 284,000 kilograms of CO2 (Freitag et al., 2021). In this regard, although big tech companies such as Amazon, Meta, Microsoft, and Google publish sustainability reports through which they aim to reinforce their commitments to reducing greenhouse gas (GHG) emissions, the data indicate that the pollution rates of such corporations are on an upward trend (Vrikki, 2024).

Between 2020 and 2022, GHG emissions caused by big tech companies, mainly due to the use of data centers, would be 662%, or 7.6 times, higher than the results officially disclosed by the companies (O'Brien, 2024). This is why such corporations often use rhetorical tactics to conceal their harmful practices. This is *greenwashing*, which hides the harmful socio-environmental impacts caused by *big tech companies* while positioning them as saviors of the planet. Aimed at concealing the socio-environmental impacts caused by large technology corporations, green technosolutionism (Nobrega and Varon, 2020) hyper-visibilizes only the benefits of *big tech* products. These discourses, which cloud understanding of the environmental impact of technology corporations, reinforce the hegemony of *big tech companies*, publicly positioning them as entities that work towards solutions to mitigate and/or resolve issues related to the climate crisis—through technological solutions, such as AI systems, of course (D'Andréa, 2023).

In contrast to this scenario, in which technology would be the driving force behind sustainable development (Nobrega and Varon, 2020), the development of eco-media literacy operations becomes even more urgent (López, 2025). According to López, in order to understand the relationships between media, technology, and ecological systems, it is crucial to investigate "both the ecological consequences of systems and technologies (...) and the role of the media in shaping environmental awareness, beliefs, narratives, and actions" (2025, p.51). Returning to the proposal of algorithms as texts (Araújo, 2025), we add the need to discuss how the systems themselves articulate and construct discourses about themselves.

Methodology

Through *prompts*, we conducted an "interview" with two LLMs: ChatGPT (version GPT-4o), from OpenAI; and Gemini (version 1.0 Pro), from Google[1]. The intention was to work with the main functionality of LLMs: simulating dialogues with their users in language similar to human conversation. Unlike other types of machine chat systems, LLMs do not respond from a pre-set database, but rather by identifying patterns in user *prompts*, analyzing the probability with which certain words may or may not appear in an *output* that responds coherently to the user's *input*. AI systems of this type are trained to identify and classify words present in texts stored in massive databases (Fill et al., 2023). In other words, AI systems collect and recombine previously existing information to construct their outputs. Once again, it is worth emphasizing that AI is neither intelligent nor artificial.

Through searches in the CAPES Journal Portal databases and the Google Scholar platform, it appears that the methodological use of *prompts* for analyzing AI system *outputs* is already a reality. Due to its popularity,

---

[1] The script for the prompts used is available at: https://abrir.link/sEbkM

ChatGPT is the most widely used model, with research on aspects such as the accuracy and clarity of its responses (Tülübas et al., 2023; Santos, 2023). Comparative approaches have also been employed, both between responses from LLM models and humans (Barbosa et al., 2024) and between responses from models from different companies (Kaplunovich, 2023; Dengel et al., 2023). However, there is still no consolidated qualitative method.

Therefore, we chose the reflective thematic analysis (TA) method, as proposed by Braun and Clarke (2006). Our proposal was to identify predominant themes in *the outputs* of ChatGPT and Gemini regarding the role of AI and its owning corporations in the worsening of the global climate crisis. To minimize possible biases, we chose to conduct the "interviews" with the browser in anonymous mode and from new accounts in both models. We also avoided asking the models to work with specific languages, roles, or target audiences. This choice was intended to bring our approach closer to that used by people who are not familiar with specific techniques for constructing *prompts*. The "interviews" were conducted in September 2024.

The procedures described above were also undertaken in accordance with the methodological guidelines of Abdurahman et al. (2025), in order to ensure the transparency and reproducibility of the analysis. For this reason, it was essential to keep the settings and parameters of the LLMs in their default mode, as well as to access the systems in newly created accounts and in anonymous browsing mode. This reduces the possibility that previous histories influence the generation of outputs. This methodological option, also according to Abdurahman et al. (2025), ensures that the responses analyzed reflect the typical behavior of LLMs, aligning with recent recommendations for documenting model configurations in qualitative studies with generative systems.

The six stages of thematic analysis (Braun and Clarke, 2006) were performed, adapted according to the characteristics of our experiment: 1) Familiarization with data, conducting interviews based on prompts and noting initial ideas; 2) Generation of initial codes, systematically coding interesting aspects of the database and collecting relevant extracts for each code; 3) Search for themes, gathering codes into potential themes; 4) Review of themes; 5) Definition of themes, refining and detailing each theme, contextualizing the story told by the analysis; and 6) Scientific report of the analysis. After reading the responses, the following themes were identified: "corporatism," "belief in technology," and "shared responsibility."

Before proceeding, it is worth noting that we recognize the inherent limitations of research with LLMs. As explained by Abdurahman et al. (2025), language models such as ChatGPT and Gemini present specific challenges due to their non- r terminological nature: even with the same prompts and settings, outputs may vary. Furthermore, it is necessary to consider the fact that the systems are continuously refined by their owner companies, which may lead to discrepancies in future studies given the change in the algorithmic behavior of LLMs.

We also do not attempt to differentiate between true content and hallucinations in the outputs. Following Johan Fredrikzon (2025), we argue that it is unproductive to simply define the so-called hallucinations of generative AI—that is, partially or entirely invented responses, even if plausible at first glance—as accidental failures of the models. LLMs are epistemologically indifferent to the distinctions between facts and fiction because they operate through statistical patterns. We must resist the tendency to anthropomorphize generative AI models; hallucinations, in this view, are not errors, but indicative that such tools are not committed to the production of knowledge or what is understood as truth (Fredrikzon, 2025). For this reason, we do not focus on the topic of hallucinations in the present study.

Ambivalences and contradictions

The responses from ChatGPT and Gemini reveal controversies that are relevant for us to reflect on the imaginaries produced by their algorithmic textualities (Araújo, 2025). On different occasions, the systems seem to want to close the black box of technology, positioning themselves as mere intermediaries between the available knowledge and the user who asks the question. As would be the case with a more elusive flesh-and-blood interviewee, it was necessary to insist on the topic, refining *prompts* until obtaining responses that evidenced their mediation (Latour, 2012) in articulating specific meanings about the relationship between artificial intelligence and environmental impact.

Corporatism

The theme of "corporatism" refers to the predominantly favorable stance toward companies related to the AI systems interviewed, as well as the almost uninterrupted defense of their activities. In general, the systems claimed to have no specific knowledge about the contribution of their infrastructure to climate change. Such information would depend on details that, they argued, are related to confidential information. According to ChatGPT, confidentiality is

crucial "to maintain a competitive position" in the market. Revealing environmental impact data without effective mitigation strategies, the tool continued, could "damage the company's image before meaningful action is taken." Similarly, Gemini argued that Google "seeks a balance between transparency about its environmental impacts and protecting its commercial interests." Terms such as "proprietary information" and related terms appeared several times.

The corporatist narrative also transpires in the approaches and distances taken in relation to the companies that own the systems. When mentioning the negative impacts of AI on the environment, the models often used more evasive language, referring to "companies" or "the technology industry" in a broader sense. However, when mentioning the potential of the technology, the owner companies were cited more explicitly. This was the case, for example, when ChatGPT mentioned that OpenAI, due to its history of "prioritizing the **ethical and responsible** development of AI" [emphasis added by ChatGPT], does not disclose specific data on its environmental impact in order to maintain its **"long-term mission** of ensuring that AI is beneficial to humanity" [emphasis added by ChatGPT]. In line with its "colleague," Gemini stated that the development of technologies such as LLMs represents "a challenge and an opportunity for the company to continue moving toward a more sustainable future." Both Gemini and ChatGPT ostensibly mentioned similar data about Google and/or Microsoft's goals regarding the use of sustainable energy in AI-related processes.

However, crucial aspects of this defense were omitted or poorly explained by the systems. At no point, for example, was it mentioned that both Google and Microsoft, two of the leading corporations in the US AI market, have seen a significant increase in their GHG emissions due to the high energy demand required to sustain artificial intelligence processing capacity. The latest pollution indices released by both corporations indicate that, despite their pro-sustainability rhetoric, Google and Microsoft actively contribute to the worsening climate crisis (Bhuiyan, 2025; Brown, 2025).

ChatGPT stated, for example, that "its data centers have been powered by **100% renewable energy** since 2017" [emphasis added by ChatGPT]. However, this information is incomplete, as it refers to compensation measures. After further *prompts*, the system provided a more accurate explanation: "the energy consumed by the servers is offset by renewable sources, even though the energy mix of the grid where the data center is located still includes fossil fuels." Both models highlighted that their companies have "robust commitments" to sustainability based on widely questioned measures, such as the purchase of carbon credits.

By minimizing business interests and other conflicts related to its use, corporate language articulates an imaginary in which technology and companies related to its development appear as bastions of values such as efficiency and capacity for achievement (Marwick, 2018). In this way, AI appears as a fundamental part of the fight against climate change (Nobrega; Varon, 2020; D'Andréa, 2023) despite its significant environmental impact.

Furthermore, corporatism can also be identified in the evasiveness of certain responses that, in practice, undermine the factuality of the discussion by replacing the provision of data with structural issues; and/or directly refuse to disclose information, reinforcing opacity and informational control. This becomes clear when Gemini, for example, in its first output, states that it is not "possible to provide an exact carbon emission rate for Google's Gemini model." The reason for the difficulty would be the fact that the operation of LLMs depends on a distributed and complex infrastructure, whose energy consumption is variable, given the energy, logistical, and technological conditions. Another obstacle is the fact that, although "there is growing interest in quantifying the environmental impact of AI, most companies still do not disclose detailed data on the carbon emissions associated with their models." In this sense, the output closes the possibility of further investigation by replacing precision with generic explanations.

This black box closure on data related to their infrastructure and the performance of their holding companies refers to Bucher's (2018) argument about the omission of interests involved in the performance of algorithms. As we naturalize our lack of knowledge about how algorithms work, the lack of information about the impact of technologies such as AI on the environment does not seem surprising.

Belief in the potential of technology

The theme "belief in the potential of technology" was identified from narratives that reiterate the possibilities of using AI to combat climate change. Techno-optimistic discourse appeared mainly when ChatGPT and Gemini were confronted with prompts requesting information about the contribution of similar systems to the climate crisis.

In the first stage of this research, conducted in 2023 using only version 3.5 of ChatGPT (Evangelista and Furtado, 2024), it was noted that there was a kind of omnipresent "lightness" in the system's responses, which insisted that it had no responsibility for carbon emissions because it did not have a "body." The following year, there

were significant changes in the arguments of the systems "interviewed." Both recognized that their infrastructures represent high energy consumption, especially in the training phase. However, in addition to not providing accurate data, LLMs often emphasized that the potential benefits of using the technology outweigh the problems it generates.

The hopeful tone is supported by the ubiquitous notion of efficiency. Both systems presented themselves as an important advance for humanity and emphasized continuous improvements. "With the use of renewable energy and improvements in data center efficiency, this carbon footprint can be drastically reduced, approaching **net zero emissions**" [emphasis added by ChatGPT]. Even when the prompts did not mention the advantages of technology in the fight against climate change, the systems presented such information. ChatGPT, for example, said that in addition to mitigating its environmental impact through more efficient solutions, "AI can also play an important role in mitigating climate change by offering solutions for monitoring and *optimizing* the use of natural resources" [emphasis added].

In a similar vein, Gemini was even more literal. In addition to relativizing the individual impact of each interaction with the tool ("it is very small when compared to the energy consumption of other activities, such as industry or transportation"), it explained that there is a "Potential for Good" (Gemini's spelling) in artificial intelligence. This potential, it continued, lies in the ability to develop "innovative solutions to combat climate change, such as the *optimization* of industrial processes, the creation of sustainable materials, and the prediction of extreme weather events" [emphasis added].

Understanding that this potential has not yet been realized and that today the risks of an expansion in AI-related carbon emissions (already enormous) appear more concretely on the horizon, we applied a prompt to question whether a future without AI would be more beneficial or more harmful to the environment. As before, the responses closely dialogue with the notions of technological superiority (Sadin, 2019) and technological solutianism (Nobrega and Varon, 2020) that permeate Silicon Valley ideologies (Marwick, 2018). According to Gemini, technology can be used "for good or for evil." Thus, the system points out, it is important to act with "caution and responsibility to prevent it from becoming yet another problem to be solved," maximizing its benefits. The r inevitability of technology (Feenberg, 2001), however, is never questioned. For ChatGPT, a future without AI may mean fewer direct carbon emissions, but it would compromise "the ability to develop and implement **innovative solutions** to the climate crisis" [emphasis added by ChatGPT].

In practice, all we need to do is use an application or a computer service to make everything more efficient, so that any and all problems can be solved (Morozov, 2013). This ideology is central to the construction of an imaginary world where limiting the potential of artificial intelligence is not a possibility. Among the alternatives proposed by ChatGPT and Gemini to mitigate their environmental impacts, there is no option to simply stop using them.

Shared responsibility

The word responsibility appeared several times in ChatGPT's responses, which even created a topic called "shared responsibility" in which it detailed that, although OpenAI is responsible for reducing the environmental impact of its products, "responsibility for the worsening climate crisis is also shared with other actors: the technology industry as a whole and users and companies that use AI." At another point, ChatGPT stated that "users cannot be solely blamed for the climate crisis associated with these technologies" (as if they were primarily responsible), pointing out that "technology developers and companies" and "policies and regulations" share responsibility for such impacts. In a similar vein, Gemini stated that Google and other companies that develop related language models have "a role to play in the climate crisis," but that responsibility is shared with governments, civil society, and other companies to "find innovative and sustainable solutions to climate challenges."

Corroborating this false symmetry, consistent with the democratic imaginary related to the internet (Van Dijck, 2013; Marwick, 2018), ChatGPT and Gemini stated at various times that technology is not a problem, but rather its use. In other words, although they respond that the tools are not neutral in relation to environmental impacts, both reiterate notions of neutrality involving technology. When *prompted* about the role of users in this configuration, both suggested several attitudes that could minimize the individual impacts of AI use. Not coincidentally, ChatGPT took the opportunity to suggest that the most concerned users support companies "committed to sustainability, such as Microsoft," whose servers hosted the system.

The aforementioned evasiveness can therefore be seen again in this context, in which the models "interviewed," in addition to redistributing responsibility to the macroscopic realm of the infrastructures that support them, also adopt a pedagogical tone. The shift from the original focus of the prompts, responding to them with advice for humans, dilutes the responsibility attributable to LLMs. These are prescriptive instructions that demonstrate that the model replaces technical responses with discourses of individual user accountability. When asked to report its

carbon emissions rate, Gemini not only fails to provide data but also opens a topic entitled "What you can do" in its output, directly instructing the user to seek information, demand transparency, and prioritize services that have an environmental commitment. The model concludes that "the search for more sustainable solutions is a challenge that requires the collaboration of researchers, companies, and society as a whole."

This generic conclusion not only reinforces the opacity of the system, in its evasive nature, but also refers to a whole history of public discourse that values individual responsibility rather than framing the environmental crisis as a systemic problem, to which large technology corporations have made increasingly significant contributions, as proven above. Algorithmic textualities, in this way, operate counter to processes of eco-media literacy (López, 2025). On the one hand, they omit the ecological consequences of AI and all the infrastructure related to the technology. On the other hand, they articulate meanings that contribute to demobilizing society around the environmental impacts of AI, referring to López's (2025, p. 51) arguments about the role of the media in shaping environmental awareness.

Final considerations

When analyzing the meanings emerging in ChatGPT and Gemini's discourse on the environmental impact of tools and other similar applications, one notices a kind of continuity in relation to the ideology that helped shape public perception of the internet and, later, digital social media platforms. Values such as transparency, efficiency, and individual accountability for data use stand out even when systems admit the environmental damage caused by their material infrastructures.

More than a technical system in itself, as Crawford (2021) demonstrates, the network of associations and agencies that we understand as artificial intelligence—even though it remains deliberately hidden most of the time—is formed by a set of discourses and imaginaries, expectations, desires, and fears; by neoliberal and extractivist practices with colonialist roots; by an infrastructural and industrial organization; by forms of exercising power; and by a specific epistemological orientation that frames views and understandings of the world within demarcated boundaries in order to serve often opaque political, social, and economic interests.

In this work, we understand that unveiling the meanings produced by the algorithmic textualities (Araújo, 2025) of systems such as ChatGPT and Gemini is crucial to understanding the imaginaries in dispute about the environmental impacts of artificial intelligence. We hope, in this way, to contribute to a critique that understands the phenomenon from its material and symbolic dimensions—in the case of the latter, considering the role of the algorithms themselves in the production of meanings.

By discussing the ambiguities and contradictions of technosolutionism, we also seek to contribute to eco-media literacy operations (López, 2025). According to López, in order to understand the relationships between media, technology, and ecological systems, it is crucial to investigate "both the ecological consequences of systems and technologies […] and the role of the media in shaping environmental awareness, beliefs, narratives, and actions" (2025, p. 51). Returning to the proposal of algorithms as texts (Araújo, 2025), we add the need to discuss how the systems themselves articulate and construct discourses about themselves.

For there is no discourse on green and sustainable technology powerful enough to offset the end-to-end GHG emissions of artificial intelligence systems. While proposals for the regulation of artificial intelligence pay little attention to the issue, the analysis undertaken here highlights the need for ecomedia literacy policies (López, 2025) on the subject. After all, although the system claims to have no opinion of its own and to be susceptible to errors, public praise for its ability to (further) accelerate the capacity to obtain answers on various topics suggests that we will be increasingly vulnerable to the policies of companies that develop and manage similar tools.

References

ABDURAHMAN, S.; Ziabari, A. S.; MOORE, A. K.; BARTELS, D. M.; DEHGHANI, M. A Primer for Evaluating Large Language Models in Social-Science Research **Advances in Methods and Practices in Psychological Science**, Thousand Oaks, v. 8, n. 2, 2025.

ARAÚJO, J. O. O algoritmo é um texto. **Texto Livre**, v. 18, p. e58505, 2025.

BARBOSA, R. de O.; TAVEIRA, F. A. L.; PERALTA, D. A. Entre respostas digitais e saberes experienciais: o ChatGPT e a educação em perspectiva crítica. **Revista Pesquisa Qualitativa**, v. 12, n. 30, p. 1–18, 2024.

BHUIYAN, J. Google undercounts its carbon emissions, report finds. **The Guardian**, 2 de julho de 2025. Disponível em: https://www.theguardian.com/technology/2025/jul/02/google-carbon-emissions-report. Acesso em: 9 dez. 2025.

BRAUN, V.; CLARKE, V. Using thematic analysis in psychology. **Qualitative Research in Psychology**, v. 3, n. 2, 2006.

BROWN, C. Big Tech's Net-Zero Goals Are Looking Shaky. **The New York Times**, 5 de agosto de 2025. Disponível em: https://www.nytimes.com/2025/08/05/climate/tech-companies-climate-goals.html. Acesso em: 9 dez. 2025.

BUCHER, T. **If…then**: Algorithmic power and politics. Nova Iorque: Oxford University Press, 2018.

CRAWFORD, K. **Atlas of AI: power, politics, and the planetary costs of artificial intelligence**. New Haven; Londres: Yale University Press, 2021.

D'ANDRÉA, C. Infraestruturas, inteligência artificial e outras "tecnosoluções": Google e a plataformização da emergência climática. **Revista da UFMG**, v. 30, p. 1–19, 2023.

DENGEL, A. et al. Qualitative research methods for large language models: conducting semi-structured interviews with ChatGPT and BARD on computer science education. **Informatics**, v. 10, n. 4, p. 1–16, 2023.

EVANGELISTA, S.; FURTADO, R. G. "Eu sou um programa de computador": tensões entre imaginários, materialidades e impactos ambientais em uma entrevista com o ChatGPT. In: Anais do 33° Encontro Anual da Compós, 2024, Niterói. **Anais eletrônicos...** Rio de Janeiro: Galoá, 2024. Disponível em: https://proceedings.science/compos/compos-2024/trabalhos/eu-sou-um-programa-de-computador-tensoes-entre-imaginarios-materialidades-e-impa?lang=pt-br. Acesso em: 12 dez. 2025.

FEENBERG, A. **Questioning technology**. Londres; Nova Iorque: Routledge, 2001.

FELINTO, E. **A religião das máquinas: ensaios sobre o imaginário da cibercultura**. Porto Alegre: Sulina, 2005.

FILL, H.-G.; FETTKEB, P.; KÖPKEC, J. Conceptual Modeling and Large Language Models: Impressions From First Experiments With ChatGPT. **Enterprise Modelling and Information Systems Architectures**, Friburgo, v. 18, n. 3, p. 1-15, 2023.

FREDRIKZON, J. Rethinking Error: "Hallucinations" and Epistemological Indifference Free. **Critical AI**, Durham, v. 3, n. 1, 2025.

FREITAG, C. et al. Patterns. **Patterns**, v. 2, n. 9, p. 1–18, 2021.

FURTADO, R. G.; EVANGELISTA, S. Inteligência artificial, data centers e colonialismo digital: Impactos socioambientais e geopolíticos a partir do Sul Global**. Liinc em Revista**, v. 20, n. 2, 2024.

GILLESPIE, T. The politics of "platforms". **New Media & Society**, v. 12, n. 3, p. 347–364, 2010.

HURST, L. "Profound risk to humanity": tech leaders call for "pause" on advanced AI development. **Euronews**, 29 mar. 2023.

KAPLUNOVICH, A. Wealth of nations, wealth of data: how GDP shapes diverse large language models like ChatGPT. In: **IEEE International Conference on Big Data**, 2023. p. 4654–4663.

KATZENBACH, C. "AI will fix this" – the technical, discursive, and political turn to AI in governing communication. **Big Data & Society**, v. 8, n. 2, p. 1–8, 2021.

LATOUR, B. **Reagregando o social: uma introdução à Teoria do Ator-Rede**. Salvador: EdUFBA, 2012.

LÓPEZ, A. Letramento em ecomídia: uma introdução à intersecção entre mídia, tecnologia e sustentabilidade ambiental. **Revista Eco-Pós**, v. 28, n. 1, p. 49–64, 2025.

MARWICK, A. A cultural history of Web 2.0. In: URQUHART, P.; HEYER, P. (Eds.). **Communication in history: stone age symbols to social media**. Nova Iorque: Routledge, 2018. p. 311–315.

MOROZOV, E. **To save everything, click here: the folly of technological solutionism**. Nova Iorque: PublicAffairs, 2013.

NÓBREGA, C.; VARON, J. A maquiagem verde das Big Tech: um olhar feminista para desmascarar tecnosolucionismos ambientais. São Paulo: **Intervozes**, 2020.

O'BRIEN, I. Data center emissions probably 662% higher than big tech claims. Can it keep up the ruse? **The Guardian**, 15 de setembro de 2024. Disponível em: https://www.theguardian.com/technology/2024/sep/15/data-center-gas-emissions-tech. Acesso em: 09 dez. 2025.

RIBEIRO, M. V. Inteligência artificial, ética e tecnologia: A contribuição da filosofia da tecnologia para a discussão da ética em IA. **Pólemos**, Brasília, v. 13, n. 30, p. 260-277, 2025.

SADIN, É. La inteligencia artificial: el superyó del siglo XXI. **Nueva Sociedad**, n. 279, p. 141–148, 2019.

SANTOS, M. C. dos. Entrevistando um robô: notas sobre a aplicação experimental da metodologia EEAF usando a ferramenta ChatGPT de inteligência artificial. **Comunicação & Inovação**, v. 24, p. 1–17, 2023.

TIMPONI, R.; LOBÃO EVANGELISTA, R. Letramento midiático, algorítmico e inteligência artificial: o papel dos agentes inteligentes na curadoria da pesquisa acadêmica. **Revista Eco-Pós**, v. 28, n. 1, p. 110–132, 2025.

TÜLÜBAS, T. et al. An interview with ChatGPT on emergency remote teaching: a comparative analysis based on human-AI collaboration. **Educational Process**, v. 12, n. 2, p. 93–110, 2023.

VAN DIJCK, J. **The culture of connectivity: a critical history of social media**. Oxford: Oxford University Press, 2013.

VIEIRA PINTO, A. **O conceito de tecnologia**: Volume 1. Rio de Janeiro: Contraponto, 2005.

VRIKKI, P. Measuring Up? The Illusion of Sustainability and the Limits of Big Tech Self-Regulation. **Sustainability**, Basileia, v. 16, n. 23, 2024.