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[Note]

Farewell to Abundance?
A Feyerabendian Critique of AI Algorithmic Homogenization, and the Battle for Human Cognition

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Abstract:
This paper critically examines the growing influence of Artificial Intelligence (AI) through the lens of Feyerabend's philosophy, specifically his defense of pluralism and the conquest of abundance. This influence poses a challenge to us by flattening the diversity and richness of human world and cognition. Our paper explores how AI systems actively sculpt reality by curtailing human preferences and narrowing the scope of what is considered real or possible. This algorithmic compression of reality is shown to be a direct assault on the abundance Feyerabend sought to protect. The algorithmic flattening will be explored in an empirical study, from which the concept of cognitive debt emerges. This cognitive impairment, coupled with the impoverishment of our shared reality, underscores the urgency of Feyerabend's call to fight attempts to reduce abundance and devalue human existence. The paper concludes that Feyerabend's pluralistic view offers a philosophical resource for critically facing the AI-driven world.

Keywords: Brainwaves on AI; Cultural flattening; Ontological and epistemological homogeneity

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Introduction

The growing influence of AI technologies in various domains raises significant philosophical concerns about the nature of knowledge, reality, and human autonomy. Traditional views in the philosophy of science may not fully capture the complexities introduced by AI, including

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its potential to shape and create multiple realities through data-driven models and algorithmic decision-making. However, the problem of AI's omnipresence and rapid spread throughout the human world, which is flattening it, urges us to address it somehow. This urge has been a part of me for a couple of years, something that has worried me since the release of big AI generative models. To make up for the brevity of our work, we ensured it was focused and well considered. This focus guides the reader directly to the heart of our objective: to critically examine how the plurality of realities, beliefs, and knowledge systems can inform our views on debates surrounding artificial intelligence. More concretely, how AI systems cannot help but even out the abundance of the human world, turning it into an AI-driven, poorer, and deterministic world. Methodologically, we chose Feyerabend, a philosopher who, although not focused on AI, possesses a rare style of thinking against the *status quo*, flattening thinkers and approaches. His rejection of rigidity in rationality and his advocacy of diversity resonate with the need to critically assess the interplay between AI and human realities. In addition, Feyerabend goes beyond science and technology hypes, keeping his eyes always on the most important cause, i.e., "to support people" (1993, xii) and to fight attempts "to reduce abundance and devalue human existence" (1999, 16). Unfortunately, as we will argue, with many kinds of AI and Big Tech's growing powers, the need to support people and the attempts to reduce abundance have grown altogether, making Feyerabend's philosophy particularly valuable for this subject matter.

Ontological Pluralism Under Threat: The Algorithmic Flattening of Reality

Feyerabend is well-known for his defense of pluralism. In his unfinished book, *Conquest of Abundance* (1999), he develops his pluralism into an ontological stance, where he combines the arguments for a pluralistic stance (on theory, systems of beliefs, methodology, methods, and models) in his previous works, with a defense for the plurality of Being, i.e., world, and realities. According to him, in certain cases, "worldviews [that] interact with Being in a mutually creating fashion" affect and shape reality (1999, xi). Feyerabend argues in some opportunities, although here more clearly, that his take on reality could be framed in an ontological pluralistic fashion, to which

> there are many different kinds of objects and features, that they are related to each other in complex ways, that some of them, such as fashions in architecture, furniture, and dress, reflect human interests while others, though manufactured with the help of complex equipment, seem to be more independent, and that this hierarchy becomes the more obscure the more we try to remove ourselves from it. So far, a unitarian realism claiming to possess positive knowledge about Ultimate Reality has succeeded only by excluding large areas of phenomena or by declaring, without proof, that they could be reduced to basic theory, which, in this connection, means elementary particle physics. An ontological (epistemological) pluralism seems closer to the facts and to human nature. I just spoke of an "ontological pluralism"; like most people I, too, am liable to summarize complex stories by using simple, though learned-looking terms. (Feyerabend 1999, 215)

This ontological pluralism – or as we precisely dubbed in another case, cosmologically divergent pluralism as being his stripe of pluralism (Oliveira 2021) – is not only rich in alternatives of many kinds and dimensions, but also, rich in divergent natures, reflecting the ontological pluralism to which proliferation, tenacity and divergency are needed to approach the abundance of the Being (Feyerabend 1993).

It is this kind of pluralism and defense of conquest of abundance that is currently under threat with our current interaction with artificial intelligence or, to put it into Feyerabend's

terms, "I return to my original problem. How is it that views that reduce abundance and devalue human existence can become so powerful?" (Feyerabend 1999, 16).

The problem of abundance, as discussed by Feyerabend, can be critically examined through the lens of artificial intelligence and its impact on our world – specifically, how and why AI flattens our world. Various thinkers have explored this phenomenon, yet one notable contribution comes from Kyle Chayka's book *Filterworld: How Algorithms Flattened Culture* (2024).[2] In his book, Chayka explores how algorithms are designed to restrict and narrow our experiences, resulting in significant limitations on human life and interactions. These engineered systems create a landscape where diversity of thought and experience is diminished, ultimately impacting how we perceive and engage with the world around us. This curtailment shapes a reality that feels increasingly uniform and constricted, reducing the richness of our existence.

Feyerabend's pluralism aims to help us search for the abundance of the world, and since the "world we inhabit is abundant beyond our wildest imagination" (Feyerabend 1999, 3), all forces and means to eliminate abundance will need, eventually, to eliminate freedom of thought and pluralism which, ultimately, will impact "the development of our consciousness" (Feyerabend 1993, 21). The consequences of it, as Nowotny put it, are that the "space vital to imagining what could be otherwise begins to shrink. The motivation as well as the ability to stretch the boundaries of imagination is curtailed" (Nowotny 2021, 20). In other words, our very capacity to develop new worlds, hypothetical and *dreamworlds*, also declines drastically altogether to move within the boundaries of the dominant view (Chayka 2024; Feyerabend 1993). Appalling as it may be, these boundary redraws the limits of what is no longer considered human. For instance, using double dash "—" became a red flag for AI-produced texts. Even these smaller, ordinary things raised red flags, which, by the way, are not necessarily true, bringing upon all of us impoverishment of our freedom of expression and linguistic resources, controlled by fear of being wronged by AI technology and by its vigilant sectarians.[3]

That being said, the elimination of pluralism assaults not only our knowledge taken in a pluralistic fashion, but also our very reality and consciousness. So human world begins to not only be restricted by this AI-world but as we use it, we desperately become dependent of it, addicted to it, and prone to reject a non-AI-world (as its accessories), just like some people may think absurd not having social media accounts or not posting personal relationship status (if it is not online, it is not real).

This is also how a Filterworld is ultimately defined, i.e., a "homogeneous, marked by a pervasive sense of sameness even when its artifacts aren't literally the same. It perpetuates itself to the point of boredom" (Chayka 2024, 6). This homogeneous and monolithic world can indeed be constructed by various actors, including politics, ideologies, and philosophies, often in combination. However, in this discussion, we specifically focus on the role of artificial intelligence.[4] AI has the potential to shape our cultural landscape in ways that standardize experiences and thoughts, leading to a reality that may feel less diverse and dynamic. The influence of AI, driven by algorithms that prioritize certain types of content while sidelining

[2] Chayka explains that the metaphor "Filterworld" comes from the 80s Japanese novel *Somehow, Crystal* by Yasuo Tanaka, to which the culture of Filterworld is built on "presets, established patterns that get repeated again and again" (Chayka 2024, 9).

[3] I for one reject the restriction to use double dash, so I used it here. If we let that happens, the vigilance of our language will gradually expand until only the terms acknowledged in AI Databases as humanly possible, acceptable and true will exist. Like the boiling frog metaphor, we are failing to see the real threat just because we temporarily adapt to the slow changes of our surroundings/world (for more on these threats, see Oliveira 2025).

[4] It is important to highlight that Big Techs lies behind AI products, and although we may mention the role of the companies in our problem, we will not explore them further our needs.

others, raises critical questions about the nature of our interactions and the richness of our experiences in this increasingly uniform environment. This is why a world flattened by AI, controlled by presets and repetition, could lead us to an AI-driven world, a world with specific characteristics and challenges (Nowotny 2021), where its events are determined, formalistic, prescribed by algorithms, addictive, cancerously invasive, and, as such, *almost* inescapable. In this AI-driven world, "we end up with a deterministic worldview. [A place where] prediction obscures the need for understanding why and how" things are as they are (Nowotny 2021, 20). Let us explore how we might get ourselves into this AI world.

From Algorithmic Flattening to Cognitive Debt: Critical Analysis of "Your Brain on ChatGPT" by Kosmyna *et al.* (2025)

Generative artificial intelligence (henceforth Gen-AI, such as ChatGPT), is designed to generate/produce[5] new content across various formats, such as audio, code, images, text, simulations, and videos. In the process of generating this content, it also produces a wide range of outcomes, including epistemic, aesthetic, normative, and scientific. However, how do they do that? We all know that, among other things, they need our data, our training, and our work to write algorithmic lines. Notwithstanding, in many cases, Gen-AI or even predictive AI due to its own design, suffer from inescapable limitations concerning the dataset used, quality of the dataset, the training technique used, types of relationships between the variables (linear or non-linear), complexity of the algorithms (i.e. whether these can be explained by mathematical functions or use neural network architecture having hidden layers between the input variables and output response), and so on (Chowdhury, Joel-Edgar, Dey, Bhattacharya and Kharlamov 2023). In other words, as the output from existing AI or AI-based systems – such as Google Translator, social media platforms, and music streaming services – becomes increasingly opaque, our ability to understand, resist, and ultimately navigate a non-deterministic world diminishes (Nowotny 2021, 20).

Even more, as the algorithm takes root throughout the world, it shapes our individual and collective realities to fit the boxes of algorithmic categories that flattens and impoverish our world, maiming it by compression, "like a Chinese lady's foot, every part of human nature which stands out prominently, and tends to make a person markedly different in outline' from the ideals of rationality that happen to be" the case (Feyerabend 1993, 12).[6] Unfortunately, it happens that the ideal of rationality of the AI-world is determined by "the tiny American locus of Silicon Valley […] – the opposite of diversity" (Chayka 2024, 6). It is as if our world, which is rich, plural, divergent, and abundant, went through a filtering process to fit exclusively what the algorithm can process and categorize, a thing that, given time,

[5] I deliberately avoid to use the word creation concerning Gen-AI, since this term spring up many other problems. For more see: *The Creative Mind: Myths and Mechanisms* (Boden 2003) and the Lovelace debate in "Machinery and Intelligence" (Turing 1950).

[6] This view has gained terminological contours in many areas. For instance, in political science, the core idea we are philosophically approaching here became the term AI-tocracy, a term to which AI technology and autocratic regimes easily establish a mutually reinforcing relationship to create or maintain more efficiently control over the population (Beraja, Kao, Yang and Yuchtman 2023). Of course, as the authors suggest, this idea still lacks empirical evidence due to AI be in its infancy of development. In some cases, AI-tocracy is very similar to Algocracy, i.e., "a system in which algorithms are used to collect, collate and organise the data upon which decisions are typically made and to assist in how that data is processed and communicated through the relevant governance system. In doing so, the algorithms structure and constrain the ways in which humans within those systems interact one another, the relevant data and the broader community affected by those systems" (Danaher 2016, 3). Danaher warns us that algocracy does not have necessarily negative connotations, and it should be taken neutrally.

becomes *the only Real thing that matters*.

The problem is, how is it possible that all unconquerable human diversity, complexity, dynamics, and relations fit just a few trillion lines of code, terabytes of data, and processes? I cannot see how AI systems can do that (which does not prove I am correct). Clearly, the next question is: how is it that these AI systems drive us to think they can make all those precise predictions? Simply put, build only the paths that AI can handle. Stuart Russell (2019) gives us a better description of that. He says

> To get just an inkling of the fire we're playing with, consider how content-selection algorithms function on social media [...]. Typically, such algorithms are designed to *maximize click-through*, that is, [...] simply to present items that the user likes to click on, right? Wrong. The solution is to change the user's preferences so that they become more predictable. A more predictable user can be fed items that they are likely to click on, thereby generating more revenue. (Russell 2019, 8)

Predictive AI and Gen-AI are interconnected because creating an AI-driven world relies on accurate predictions. However, predicting human choices, dislikes, and actions can be challenging in an unrestricted environment, as there are too many variables at play. To enhance predictions and improve recommendations, AI must build a structured world in which human decisions align with the options AI can provide. This approach is what leads to more accurate AI predictions. These predictions can always be improved as AI gathers information we freely provide, or, more often, even pay for. The outcome is that humans supply the material for AI to shape the world we will inhabit. As Brian Christian noted, when given enough time to observe us, "the system begins to sculpt the very reality it is meant to predict" (Christian 2020, 77).

Nowotny (2021) referred to this sculpted reality as the AI-driven world, highlighting its specific characteristics and challenges: events are determined and formally prescribed by algorithms,[7] manufacturing a world that, as Chayka also cautioned, makes us nearly addicted to it.

Unfortunately, in order to embed this perspective in our individual and collective minds, we must be prepared. The ground (our minds) must be prepared so that the seeds of an algorithmic reality can grow freely and flourish, ultimately installing the impoverished world manufactured by Big Tech companies. One way to achieve this is by reducing our cognitive abilities, including our critical and creative thinking skills. If this approach is successful, we can finally enjoy the comforts of intellectual laziness, technocracy, and the freedom of being mere products. There will be nothing to worry about – happiness at last.

To better visualize this, let us take a concrete example. In a prominent paper, Nataliya Kosmyna et al. (2025) proposed that cognitive debt arises from the use of generative AIs.[8] They found that relying on large language models (LLMs) for complex cognitive tasks, such as writing a SAT essay, can lead to decreased brain engagement over time. This conclusion is supported by measurements of neural connectivity in LLM users, obtained through

[7] Naturally, we must not confuse AI determinism with a plain and simple automation of traditional computer programs. According to Glikson and Woolley, "Automation refers to the situation where computers follow pre-programmed rules to perform repetitive and monotonic tasks" while AI, which makes its own rules, can also "make the rules that the automated process follows [...] carrying out the actions determined by an intelligent system" (Glikson and Woolley 2020, 629).

[8] It is important to highlight that the paper has not yet being reviewed (although even commented in the Journal *Nature*) but doctor Kosmyna considered that it was urgent to release the findings due to the speed that AI, and legislators, advance decisions and technical achievements without giving much thought about human costs. This is the same reason we decided to publish this short paper.

electroencephalography (EEG). According to the authors, the measure of certain brainwaves (such as alpha, beta, delta and theta bands) across users of LLM group scaled down as users resort to external support, resulting in "likely decrease in learning skills based on the results of our study" (Kosmyna et al. 2025, 2).

Using LLMs does not necessarily make people dumber. What the study reveals, which is relevant to our discussion, is that LLMs diminish various aspects of human cognitive capacities, as evidenced by brainwave patterns. This reduction affects our ability to articulate and generate ideas, process semantics, engage in active cognitive processing, maintain focused attention, support memory-related tasks, manage memory load, and immerse ourselves in internally-driven thought. To better detail what is going on, let us summarize some results from the study, focusing only on the two out of three groups in the experiment whose task was to write essays. The first group, the so-called Brain-only Group (18 participants), and the second group, the so-called LLM Group (18 participants).

More concretely, the EEG results for each brainwave have shown greater neural connectivity in the Brain-only Group. According to Nataliya Kosmyna et al (2025), concerning *Alpha* band connectivity data (which, during creative ideation, is associated with internal attention, semantic processing, generation, and combination of ideas from memory), shows that the Brain-only group had a total connectivity of 79 versus 42 of the LLM group (2025, 78, 161). The next brainwave, the *Beta* band (linked to active cognitive processing, focused attention, and sensorimotor integration), shows controversial results across high and low waves (2025, 80). For instance, although the Brain-only group had total connectivity of 49 versus 58 in the LLM group (2025, 162), the data shows that the low-beta Brain-only group had 67 versus 60 in the LLM group (2025, 167). The next brainwave, *Delta* band data ("reflect broad, large-scale cortical integration and may relate to high-level attention and monitoring processes [...] can increase when moving from an exploratory stage to an intense generation stage" (Kosmyna et al 2025, 82)) shows that the Brain-only group had a total connectivity of 78 over 31 of the LLM group (2025, 163). Lastly, *Theta* wave data ("linked to working memory load and executive control. In fact, frontal theta power and connectivity increase linearly with the demands on working memory and cognitive control" (2025, 84)) shows that the Brain-only group had a total connectivity of 65 over 29 of the LLM group (2025, 168).

All the data suggest, though not definitively yet, that LLM users would be drastically affected by their use of Gen-AIs. As the researchers pointed out, participants of the Brain-only group reported higher satisfaction and significance of their essays compared to the LLM group, who even "mostly failed to provide a quote from their essays" (Kosmyna et al. 2025, 143). Unfortunately, not only that. Concerning the flattening world, the results also reinforced theoretical exploration in this topic. As the LLM and the Brain-only groups delivered their essays, the researchers asked human teachers to evaluate them. So, without knowing which group wrote the evaluated essays, they noticed that essays later revealed to belong to the LLM group "produced statistically homogeneous essays within each topic, showing significantly less deviation compared to the other groups" (2025, 133). Being homogeneous and exhibiting less deviation can also be interpreted as uniformism and deterministic predictability, or, as the authors we quoted told us, these essays are repetitive, preset, distant to plurality, and have a pervasive sense of sameness, blindness, and colorlessness. To sum up, let us use the word of two English teachers who evaluated the essays: "soulless" (2025, 62). Nowotny once stated that reliance on AI "obscures the need for understanding why and how" (2021, 20) things work, and increasingly, we find reasons to agree with this perspective.

Conclusion

The central issue this paper addresses is the philosophical and cognitive threat posed by AI's widespread influence. Specifically, this threat arises from AI's tendency to homogenize,

impose determinism, and exert control, which undermines the essential abundance, pluralism, and cognitive freedom that are vital to human existence. Feyerabend champions these concepts in his book, *Conquest of Abundance* (1999).

We aimed to critically examine this pervasive influence of AI, which Chayka, inspired by Tanaka, called Filterworld. Our exploration involved a theoretical and critical analysis of an experimental paper by Kosmyna et al. (2025), which measured the impact of reliance on Generative AI. Specifically, we focused on the emergence of cognitive debt as evidence of the epistemic and ontological impoverishment that Feyerabend warned against in dominant worldviews.

Through our exploration, we established a philosophical connection between Feyerabend's pluralism and the contemporary critique of algorithmic control over our world. By linking Feyerabend's defense of abundance with modern concepts such as the Filterworld and the AI-driven environment, we created a robust framework that demonstrates how the algorithmic reduction of reality impairs human cognitive capacity, thereby substantiating Feyerabend's philosophical warnings.

Finally, our research indicates that the pursuit of abundance is not just a theoretical discussion; it is a crucial and ongoing struggle for the essence of human consciousness and reality. The idea of an AI-driven world is not an unavoidable future but rather a reality we must actively resist and rebel against. As we discussed regarding Feyerabend's views, it is essential to remain vigilant in safeguarding our abundance from algorithmic control. If we do not actively resist the gradual changes brought about by AI, we risk falling under Big Tech's control (or worse, rogue Super-AI). This control could redefine what it means to be human and reshape our perception of reality, ultimately sacrificing the richness of our world for a limited and predetermined virtual existence.

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