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Challenging the Cosmocracy of Certainty and Engaging the AI Hyperpharmakon: Regulation, Ethics, and Resonance

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This paper critically explores the ontological underpinning of AI, situating it within the broader quest for certainty that characterizes the Western onto-political imaginary. We argue that AI is a technology of certainty, which is moored in the fragmentation and standardization of language that started with the invention of the Greek alphabet. We question conceptualizations of AI as a "thing" and reconceptualize it as a paradoxical hyperobject (Morton), a world-making apparatus (Barad), and a pharmakon (Plato, Derrida, Stengers). As a hyperpharmakon AI can work as a poison and as a cure with no spatial or temporal limits. Designed to achieve control, it produces the paradoxical effect of generating uncertainty. We challenge the assumption that AI paradoxical effects can be tamed through prescriptive regulatory practices and rely on the conceptual tools of quantum social science to argue for an ethics of practice attentive to resonance and responsibility for navigating the radical ambiguity of AI.

Cet article explore de façon critique les fondements ontologiques de l'IA, en les situant plus largement dans la quête de certitude qui caractérise l'imaginaire ontopolitique occidental. Nous affirmons que l'IA est une technologie de certitude, qui s'ancre dans la fragmentation et la standardisation de la langue qui ont débuté avec l'alphabet grec. Nous remettons en question les conceptualisations de l'IA en tant que ≪ chose ≫ et la reconceptualisons comme un hyperobjet paradoxal (Morton), un dispositif créateur de mondes (Barad) et un pharmakon (Platon, Derrida, Stengers). En tant qu'hyperpharmakon, l'IA peut empoisonner comme soigner, sans aucune limite spatiale ou temporelle. Alors qu'elle est conçue pour obtenir le contrôle, il est paradoxal qu'elle ait pour effet de produire de l'incertitude. Nous remettons en question l'hypothèse selon laquelle les effets paradoxaux de l'IA peuvent être domptés grâce à des pratiques de réglementation prescriptive et nous fondons sur les outils conceptuels de science sociale quantique afin de défendre une éthique de la pratique attentive à la résonance et la responsabilité quand il s'agit de naviguer l'ambiguïté radicale de l'IA.

Este artículo explora, de forma crítica, el fundamento ontológico de la IA y la sitúa dentro de la búsqueda más amplia de certeza, que caracteriza el imaginario ontopolítico occidental. Argumentamos que la IA es una tecnología de certeza que se encuentra anclada en la fragmentación y estandarización del lenguaje, que comenzó con la invención del alfabeto

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griego. Cuestionamos las conceptualizaciones de la IA como un ≪objeto≫ y la reconceptualizamos como un hiperobjeto paradójico (Morton), un aparato generador de mundos (Barad) y un phármakon (Platón, Derrida, Stengers). En esa calidad de hiperphármakon, la IA puede funcionar como un veneno y, también, como una cura sin límites espaciales ni temporales que, al estar diseñada para lograr control, produce el efecto paradójico de generar incertidumbre. Desafiamos la suposición de que los efectos paradójicos de la IA pueden ser controlados mediante prácticas regulatorias prescriptivas y nos basamos en las herramientas conceptuales de la ciencia social cuántica con el fin de argumentar a favor de una ética de la práctica que esté atenta a la trascendencia y a la responsabilidad de gestionar la ambigüedad radical de la IA.

Introduction

Appeals for regulation or "ethical AI frameworks" generally begin with the assumption that artificial intelligence (AI) is already a socially congealed technoscientific artifact. Yet without identifying specific actors or distinguishing among types of AI technologies, such discourse frames AI as a singular, autonomous force surpassing the publics' and policymakers' ability to fully understand it. This artifactual framing, even in critical contexts, reinforces the notion of AI as a fixed and unquestionable reality. How can AI be consistently framed within political and regulatory imaginaries as a governable technology? What allows a phenomenon that destabilizes epistemic certainty to be reabsorbed into frameworks of calculable risk and control? This article explores these questions by centering the ontological imaginary that informs the invention of AI, its ontological status, and ways to govern it.

As Einstein put it in his obituary for Ernst Mach: "Concepts that have proven useful in ordering things can easily attain an authority over us such that we forget their worldly origin and take them as immutably given" (Einstein 1997, 142). We argue that AI is moored in what we call the *Western cosmocracy of certainty*. We trace the origins of this epistemology to the invention of the Greek alphabet and the cultural transformation process that preceded it (Havelock 1986; Ong 2002; Drucker 2022; McMahon 2023) as a technique of fragmentation and standardization and to the concomitant ontological substantialism of Western science. AI, we argue, is moored on the Western ontological quest for certainty from alphabetization to industrialization. In turn, this ontology nurtured conceptualizations of AI as an "object" and rendered its governability imaginable through regulatory practices focused on taming "risk."

In challenging these ontological imaginaries, we reconceptualize AI as a *hyperobject* (Morton 2016) and as a *hyperpharmakon* (Derrida 1981; Stengers 2010). GenAI operates as a massively distributed, recursively infrastructural phenomenon whose scale, opacity, and temporal reach exceed localized perception and intentional design. Moored on the aspiration to control all unknowns and to tame uncertainty through algorithmic universal knowledge, AI paradoxically produces the radical human fear of losing control to the machine. As a hyperpharmakon, its effects as a poison or a cure are ambiguous, contingent, and reversible. Our argument unfolds by examining the relation between hyperobject, hyperpharmakon, and political imaginary: How GenAI's distributed materiality both depends upon and destabilizes the cosmocracy of certainty that has historically organized Western modes of knowing and governing. Furthermore, we explore how embracing radical ambiguity and nonsubstantialist ontological imaginaries may afford alternative ways for (ethically) engaging with AI. Instead of regulatory techniques that assume the fixity and immutability of what needs to be regulated, we advocate adopting an ethics of practice

attentive to resonance instead of fixity, which, on the one hand, embraces the radical ambiguity of the hyperpharmakon AI and, on the other hand, focuses on practices of engagement with this molten hyperobject.

Challenging Ontopolitical Imaginaries of Certainty

International political sociology (IPS) and science and technology studies (STS) scholars explored how political imaginaries become embedded in institutions, infrastructures, and technological systems, shaping what kind of world becomes thinkable and operational, and have extensively examined how facts are constructed through processes of naturalization and removal from context (Latour 1988) or how artifacts have their politics (Winner 1986). In her thoughtful commentary, Lucy Suchman (2023) examines how AI has come to be perceived as a tangible, unified entity, despite the numerous debates it incites. In International Studies, Aradau and Blanke (2022, 3) recognize that the predictive promise of algorithms "traverses social and political fields globally, ranging from the politics of security to that of humanitarian action" but question the assumed "thingness" of AI. They ask how this algorithmic configuration became pervasive in governmental practices, what the reconfiguration of such practices through algorithms means, and what new boundaries it generates. Instead of looking at algorithmic reasons as one unified political rationality of domination and dispossession (or a technological solution to human problems), in adopting what they call a "methodology of the scene" (Rancière), they bring to light the small variations in the practice of production and application of algorithms and the emergent effects these entail for governmental and societal processes. In a similar vein, building upon Simone de Beauvoir *Ethics of Ambiguity*, SJ Bennet (2025) explores how professionals who produce algorithms navigate the ethical ambiguity and uncertainty of practices of algorithmic production. In this article, we embrace STS and IPS positions and follow Madeleine Böhm's invitation to extend the existing IPS debate on algorithms, which mainly addresses themes related to "security, surveillance, migration and risk" (Böhm 2025, 3). The novelty of our intervention lies not in reiterating co-productionist STS insights that technologies and societies co-constitute one another, but in demonstrating how the hyperobjectic and hyperpharmakon condition of GenAI unsettles the very imaginaries that render it governable and invites to embrace alternative ontological starting points. We tend to the onto-epistemic underpinning of AI through interdisciplinary, transversal, and reflexive accounts and trace these underpinnings in the Western cosmocracy of certainty that originated with the invention of the Greek alphabet—an ontopolitical imaginary grounded in fragmentation, standardization, and the abstraction of agency. By conceptualizing GenAI as an alphabetized hyperobject, we show how it computationally intensifies this cosmocratic logic while simultaneously exposing its limits. Our use of imaginaries draws explicitly on Castoriadis (1998), who conceptualized the social-historical imaginary as the generative matrix through which collectivities continuously institute worlds—not as representations of a pregiven reality, but as the very conditions that make reality intelligible. In contrast to purely discursive or ideological frameworks, imaginaries are material-semiotic practices that organize sense, agency, and possibility. This approach complements Jasanoff and Kim's (2009, 2015) notion of sociotechnical imaginaries, which foregrounds how collective visions of desirable futures stabilize institutional and technological arrangements.

The article is structured as follows. We conceptualize GenAI as a phenomenon that exceeds containment and produces paradoxical effects as it folds back onto itself—a hyperobject (Morton 2016). We then trace the genealogy of alphabetic certainty to show how GenAI extends a long-standing project of pursuing universal knowledge, control, and stability, even as its hyperobjectic nature generates new forms of uncertainty. Next, we challenge the cosmocracy of certainty that underpins

dominant (regulatory) rationalities. Finally, we turn to ethical alternatives grounded in quantum social science and the concept of resonance, suggesting that the notion of entanglement (Barad 2007; Wendt 2015, 2017; Zanotti 2019; Voelkner and Zanotti 2022; Braun 2024) offers a way to engage GenAI through practices of contingent alertness and responsibility that must go beyond corporate experimentation to include citizens'involvement. Our argument draws on an interdisciplinary vocabulary that highlights different elements of the same ontopolitical dynamic. Cosmocracy names the broader formation in which certainty becomes a governing value. Alphabetic certainty marks the historical inscription of this value through the discretization of language. Imaginaries describe how this value becomes socially desirable and institutionally reproduced. Infrastructure captures the material arrangements that give these imaginaries everyday force. The hyperobject shows how this formation scales in the present, making GenAI appear ubiquitous yet difficult to grasp as a coherent entity, and hyperpharmakon underscores the reversibility of its effects. This onto-epistemology is enacted across the technical, economic, and political systems through which GenAI models are trained, deployed, and governed. This article does not aspire to develop a full infrastructural analysis. Instead, we center the ontological imaginary that informs AI, its paradoxical destabilizing effects, and the regulatory approaches that attempt to tame them. GenAI is not a rupture but an intensification of a long-standing cosmocratic project to secure certainty by organizing language and life through calculation.

For Toulmin (2013), the authoritarian stabilization of cosmology into a cosmocracy focused on the quest for certainty can be traced to Newtonian mechanism and Cartesian dualism, which had emerged after the perils of the Thirty Years' War. We suggest that the main pillars of the epistemic and ontological foundations of this cosmocracy, a tacit framework of assumptions about what the world is and how it fundamentally operates, were already instituted much earlier, namely in the invention of the Greek alphabet. (Havelock 1986). This onto-epistemology suggests a created, fixed, and universal one-world world (Law 2015) that is a constant of the Western way of being (cf. Heidegger 1962). It nurtures de-contextualized and universalistic ways of knowing and being that, related to the subject at hand, are reinforced by the ways GenAI constructs meaning through vectorization and by attending to patterns in the geometrical representation of the "in-between" of a mathematical feature space (Aradau and Blanke 2017, 380).

Alphabetic writing allowed the organization of spoken words into small, standardized units that can then be combined and recombined to represent and transmit language in a universalized and decontextualized manner (Ong 2002). This process of fragmentation and standardization is central to the arrangement of labor that, as Matteo Pasquinelli argues, has enabled the automation of human tasks since the Industrial Revolution. For Pasquinelli, "algorithmic thinking emerged as a *material abstraction,* through the interaction of mind with tools, in order to change the world and solve mostly economic and social problems" (Pasquinelli 2023, 16; emphasis in original). Thus, for Paquinelli, *labour is the first algorithm* (Pasquinelli 2023, emphasis in original).

The importance of these technical operations is not merely computational. Tokenization, embedding, and probabilistic next-sequence prediction are material instantiations of a particular imaginary of order. These operations are embedded in planetary-scale infrastructures—from semiconductor foundries and GPU supply chains to globally distributed data centers—that are actively reshaping geopolitical alignments and resource ecologies. GenAI does not simply stand as the newest technoscientific infrastructure of the world; it operates as a worlding apparatus that amplifies and rearticulates long-standing Western commitments to abstraction, standardization, and certainty (Balasescu 2025). The practice of division of labor that, for Pasquinelli, fostered surveillance, optimization, and capital accumulation is rooted in an onto-epistemology, the cosmocracy of certainty that started forming

with the invention of the alphabet, was intensified by Newtonian science's substantialism, and continues with GenAI.

Following STS and anthropological approaches to infrastructure (Bowker 1994; Hetherington 2014; Carse and Lewis 2017; Dalakoglou 2017), we treat infrastructure not as the invisible backdrop of social life but as a performative practice of world making. GenAI participates in this ongoing worlding by folding together the dispersed textual residues of human practice into algorithmic forms that recursively shape the conditions of sense-making. In this folding process, GenAI becomes both origin and outcome—the infrastructure of its own infrastructural effects (Hetherington 2019). Ironically, what appears as a drive toward epistemic certainty—clean representations, stabilized categories, optimized predictions—simultaneously generates ontological uncertainty. The more GenAI promises to render the world legible, the more it destabilizes the grounds on which legibility rests. This is not a contradiction to be resolved but a constitutive feature of the apparatus itself.

Our analysis centers on what is called "LLM-based generative AI": Large Language Models and transformers that are designed to create text or other forms of media, trained on vast amounts of data that learn the statistical properties of language projected on and connected in a multidimensional geometrical order to excel at predicting what comes next in a given sequence of letters or words or pixels, generating new text or visual images based on a prompt. We conceptualize GenAI as a "hyperobject" (Morton 2016) rather than a technological artifact. In this framework, the governance of AI through regulation cannot be treated as a matter of policy design alone but must be problematized as world-making and world-maintenance.

Building on this conceptual architecture, a brief analytic vignette of contemporary regulatory initiatives offers a clear illustration of how these cosmocratic dynamics materialize in practice. The European Union's AI Continent Action Plan (EC 2025), for example, presents the EU as a global leader in "trustworthy" and "human-centered" AI, backed by large investments in compute, data infrastructures, and sector-wide deployment. Yet terms like *trustworthy* and *human* appear as if their meanings were self-evident rather than historically and politically situated. In framing GenAI as a unified, governable technological object (Romele, 2025) EU policy stabilizes the very imaginaries of order, legibility, and certainty that the previous section has shown to be contingent and world-making. A similar pattern appears in the United Nations' *Governing AI for Humanity* report (UN 2024), which treats GenAI as a singular global challenge requiring alignment and coordination while largely obscuring the sociotechnical, economic, and geopolitical entanglements through which such systems are actually built and sustained. These initiatives thus enact what we call a cosmocracy of certainty —an attempt to fix the meaning of GenAI and secure governance through universal categories and institutional architectures. By foregrounding these brief examples, we suggest that regulatory debates do not simply respond to technological developments; they reproduce the deeper ontological and epistemic assumptions that make certain forms of governance appear natural, necessary, and attainable in the first place.

Alphabetized Hyperobjects

GenAI hyperobjectiveness is grounded in the "most momentous of all human technological inventions" (Ong 2002, 83): the sociopolitical evolution of writing (Drucker 2022; Gimirkin,2023), culminating in the Greek alphabet and the commencing alphabetic fixity inscribed into the world of Western man (McMahon 2023). Climaxing in the 8th century BCE with the Phoenician–Greek introduction of vowels into the consonantal Semitic syllabary, the "alphabetic revolution" marked a profound epistemological and ontological transformation (McLuhan and Logan 1977; Havelock 1986; Ong 2002; Drucker 2022; McMahon 2023). The alphabet enabled speech to be spatialized, rendering the ephemeral qualities of sound into fixed,

visible symbols. In doing so, it detached language from its oral, contextual, and communal moorings, facilitating the emergence of abstract thought, analytical reasoning, and a sense of objectivity.

Alphabetization introduced a new epistemic form in which language appears as a sequence of discrete, enumerable elements that can be organized, compared, and recombined. This is not simply a representational shift but a transformation in the medium of thought itself, making linguistic expression available to systematic manipulation. Contemporary GenAI systems take up this same formal possibility—that language can be treated as a manipulable sequence—but they operate through probabilistic vectorization, in which tokens are modeled as positions in a high-dimensional statistical space. The relation, therefore, is not one of technical descent but of onto-epistemic continuity: alphabetization opens the conceptual horizon in which sequence becomes a site of rational operation, while GenAI constitutes a novel computational intensification of that horizon through large-scale statistical inference.

As McLuhan and Logan (1977), Havelock (1986), and Ong (2002) argue, alphabetic literacy was not just a cognitive shift but a political one. By cultivating an autonomous, rational "self" oriented toward a world rendered as an object of knowledge, alphabetization helped establish a regime in which stability, clarity, and fixity became the foundations of authority. It produced an ontology in which the world appears as an ordered container of facts, and in which certainty functions as a prerequisite for action, judgment, and governance.

Presocratic thinkers, especially in the Pythagorean tradition, amplified this epistemic style into an early political rationality. While the *Akousmatikoi* maintained oral, relational, and experiential ways of knowing, the *Mathematikoi* embraced literate abstraction and pursued *asphaleia*—a form of ontological security grounded in numerical order (Kirk and Raven 1957; Huffman 1993). Philolaus' insistence that "the world is known through numbers" marked a decisive move toward grounding truth in timeless, disembodied structures rather than situated experience. This mathematization of the world began to naturalize the division between the eternal and the temporal, between the realm of reason and the realm of the senses (Russell 2015).

Euclid's subsequent systematization of geometry in the *Elements* turned this orientation into a durable political technology. His axiomatic method reshaped how space could be governed—enabling new forms of mapping, measurement, navigation, and territorial abstraction (Wardhaugh 2020). This helped install a mode of rule in which geometric ordering underwrites administrative, economic, and imperial projects.

Seen from this angle, contemporary GenAI does not emerge in a vacuum. It inherits and scales this long-standing political ontology of certainty, extending alphabetic and geometric logics to a planetary computational apparatus. GenAI promises order, prediction, and stabilization, and it does so through infrastructures that increasingly govern social life: from classification and surveillance to resource allocation and border management. Far from representing a neutral technological advance, GenAI intensifies a historically entrenched performative project of organizing the world—and its inhabitants—through calculative certainty.

In sum, the Greek alphabet introduced a decisive epistemic shift: it rendered language into discrete, stable, and recombinable units, restructuring the very medium of thought and enabling language to be externalized, inspected, and manipulated (Ong 2002). Contemporary autoregressive language models extend this same logic of sequential composition, though through statistical inference over token embeddings rather than phonetic segmentation. Where the alphabet created the conditions for manipulating language as a sequence, GenAI automates and vastly scales this operation by predicting each next unit from enormous corpora of prior usage. The underlying mathematics of probability, vector representations, and large-scale computation are thoroughly modern, yet they enact an older epistemic form. The

continuity lies in the discretization of language and the organization of thought as sequence; the discontinuity lies in the probabilistic rationality and computational scale through which this form now governs.

Artificial Intelligence as Worlding Infrastructure and Hyperobject of Certainty

As argued above, the assumption that GenAI is a neutral or purely technical artifact, we concur with Suchman (2023), is anchored in a specific cosmopolitical regime—a *cosmocracy*—in which the fluid contestations of cosmopolitics are stabilized into a fixed ontological imaginary. Stengers' (2010) concept of *cosmopolitics* is useful as a way of foregrounding world-making as an ongoing negotiation among heterogeneous beings and practices. Building on Bruno Latour (2004), Stengers suggests ontological pluralism and the concept of "ecology of practices," urging hesitation before claims to truth and inviting the inclusion of nonhuman agencies in political processes. Mario Blaser's (2009) discussion of political ontology similarly underscores how Indigenous and modern cosmologies do not merely differ in perspective but enact different worlds. Cosmocracy, by contrast, forecloses plurality. It functions as an extractive "ecology" that stabilizes one world—the one-world world of Western onto-epistemology—by a set of extralocal relations of ruling (Smith 1999; Law,2024) that tacitly coerce people's doings as if the world were singular, universal, and ontologically stabile. To paraphrase political scientist Johanna Oksala: The cosmocratic order of things is itself the outcome of a political struggle; cosmocracy is cosmopolitics that has forgotten itself (Oksala 2010, 464).

The cosmocracy described above informs the "uncontroversial thingness of GenAI" (Suchman 2023). Such substantialism erases the political and ontological labor that constitutes its agency. It also frames desirable futures in terms of managing interactions between "the thing" called AI and its human users, typically through abstract regulatory frameworks. These framings reproduce the mechanistic worldview that imagines society as a clockwork system populated by discrete subjects and objects whose behavior can be predicted, managed, and mitigated. This is the familiar desire for the comforting realism of ontological and epistemic certainty (Oksala 2010), which underwrites much of AI governance discourse.

As we have mentioned above, critics of oversimplified conceptualizations of GenAI explored the ambiguity inherent in the process of its production, that is, in translating practical realities into data, in the process of collecting data, and in the ways associations and relations among data are established (Suchman 2007; Bennet 2025). In this vein, Claudia Aradau and Tobias Blanke (2017, 379) examined *how* GenAI practitioners engineer their modes of prediction and "the shared assumptions and techniques that practitioners learn in order to be able to analyze digital data." Predictive analytics rely on the construction of multidimensional geometrical space (the "feature spaces") where the notion of distance is significant. Relations among data are created by calculating "in between-ness," which is based on the "understanding of similarity and difference based on geometrical distance" (Aradau 2017, 380). Calculations of relationality are based upon "the shortest path." This way of creating meaning constitutes an apparatus for the construction of certainty based on the excision of nonmathematized and embodied ways of knowing. Thus, GenAI models are designed to minimize indeterminacy through probabilistic patterning. Large Language Models (LLMs) construct high-dimensional feature spaces in which linguistic tokens are positioned according to statistical similarity and relational distance (Aradau and Blanke 2017). Meaning is generated through iterative optimization algorithms that aim to reduce uncertainty by predicting the most probable next token in a sequence. A simple political example helps make this process more concrete. If a user prompts a model with the phrase "The government introduced emergency border controls because. . .," the system does not recover or refer to an underlying political reality. It predicts a plausible continua-

tion of the text by calculating which tokens are most likely to follow from patterns learned across vast textual corpora. Words such as "security," "migration," "threat," or "public order" may then be generated because they are statistically associated with that sequence, not because the model has understood or reflected on the situation itself. What appears as a meaningful explanation is the effect of probabilistic patterning across prior textual traces. The model's outputs enact certainty as statistical coherence—as the appearance of fluency, continuity, and consistency. In this way, GenAI operationalizes a longstanding Western desire to stabilize ambiguity, transforming the open-endedness of work and the world into a domain of calculable and recombinable relations.

While GenAI operates as a world-making infrastructure built on the aspiration to stabilize knowledge, meaning, and prediction. However, its scale, complexity, and temporal reach exceed human cognitive and sensory capacities. As Morton (2016) and Morton and Boyer (2021) argue, *hyperobjects* generate uncertainty precisely because they cannot be grasped in full: their effects are dispersed, uneven, and often opaque. This opacity is not limited to users or regulators. It also characterizes the vantage point of those who design and maintain these systems. Contemporary GenAI models are so large, multilayered, and data-dependent that even their developers cannot fully retrace how internal representations evolve. Interpretability tools offer fragments rather than explanations, and small perturbations can produce unpredictable shifts in system behavior. The hyperobject thus generates internal uncertainty—a recognition within the technical community that GenAI's operations increasingly exceed intentional design. Hyperobjects challenge conventional modes of human perception, temporality, and substantialist ontologies. They are entities that are "massively distributed in time and space relative to humans" (Morton 2016, 1). These phenomena—such as global warming, radioactive waste, automobility, or the internet—are not simply large-scale objects; they destabilize social frameworks by defying localization and temporal containment. They are nonlocal; they cannot be experienced in their entirety at any given moment or place; their existence is inferred through scattered manifestations—rising sea levels, melting glaciers, traffic accidents, and erratic weather patterns—that never exhaust the totality of the phenomenon.

Morton further characterizes hyperobjects as *viscous*—they "stick" to beings and systems, resisting detachment, or avoidance. They are *molten*, in that they occupy and distort both space and time, making traditional boundaries and causalities difficult to discern. Their temporal vastness—often spanning geological or even cosmological timescales—undermines linear or event-based temporalities. For instance, the consequences of nuclear waste or anthropogenic climate change unfold across thousands of years, implicating deep time and challenging short-term political or ethical responses. Morton specifically highlights the world-making potential of (Gen)AI,[1] emphasizing its capacity to fundamentally reorganize social, temporal, and epistemic structures. He observes that (Gen)AI operates by "constantly reorganizing the present according to the future, which is beyond the reach of human anticipation" (2016, 198), thereby introducing a mode of temporality that disrupts linear understandings of causality and foresight. This anticipatory logic—embedded in GenAI's predictive and modeling capacities—renders it both a powerful instrument and a source of concern. On one hand, GenAI enables insights into complex systems; on the other hand, it risks displacing human agency, particularly through the automation of performance and decision-making.

AI is *intended* as a hyperobject: a deliberately engineered, infrastructurally interconnected, globally sourced and distributed apparatus that exceeds localized understanding. Its ontological viscosity, nonlocality, and epistemic opacity, positioning

[1]Morton (2016) wrote about AI before transformer models emerged after 2020. However, his analysis of AI as hyperobject is relevant in the context of GenAI. Therefore, we use (Gen)AI to acknowledge the temporalities of the analysis and its relevance to later developments in AI evolution.

it as a technological phenomenon that exceeds conventional frameworks of perception and control. GenAI defies localization and temporal containment by using (large) language models that incorporate all texts ever produced and publicly available, without temporal or spatial limitation, or linguistic or use specificity, as well as texts generated by the model itself (folding into itself). It is viscous as it is invisibly present in many human–nonhuman–inanimate object agential networks (such as navigation systems, mobile phones, social media platforms, meteorological predictive applications, automobility infrastructures, and translator devices, to name a few); it sticks to humans as it inserts itself into such networks. GenAI models have been referred to as "stochastic parrots" (Bender et al. 2021) or "social bullshitters" (Braun 2025), critically reflecting on the assumed depoliticized nature of GenAI-human interactions. GenAI seeps into human awareness, not only as an external phenomenon but also as internal experiences—manifesting as intellectual anxiety, hasty effectiveness, or subliminal unease: GenAI intertwines and continuously reshapes subjects, objects, and worlds. It operates through folding in the dispersed textual—cultural and epistemic—residues of human life into a latent computational substrate, and folding out coherent, seemingly universal outputs that instantiate a synchronized, anthropocentric one-world world. GenAI, as an infrastructure that folds in on itself, both produces and destabilizes certainty. Drawing on Agamben (2014) and Deleuze and Guattari (1987), we understand this fold as the process through which worlding occurs: External forces are absorbed, modulated, and re-emerge without clear boundaries between inside and outside. This continuous folding blurs the distinction between epistemic mastery and vulnerability. In this sense, GenAI functions as a paradoxical worlding hyperobject: a phenomenon in which certainty and uncertainty are inseparably entangled (Deleuze, 1991; DeLanda, 2004). In this light, GenAI is a transversal agent in the production of an alphanumeric computational ecology of the fold, reworking Guattari's (2000) three ecologies—a relational field spanning environmental processes, social assemblages, and the production of subjectivity—into a new ontopolitical configuration.

GenAI are paradoxical hyperobjects that challenge the very quest for certainty that is constituting their very onto-epistemical foundation. They embody the ambiguity of the "pharmakon," defined by Stengers as "a drug that may act as a poison or a remedy" (Stengers 2010, 29). The pharmakon, she argues, "can mutate into its opposite, depending on the dose, the circumstances, or the context, it is a drug whose action provides no guarantee, defines no fixed point of reference that would allow us to recognize and understand its effects with some reassurance" (Stengers 2010). In *Dissemination*, Derrida (1981, 65–171) reinterprets Plato's concept of the pharmakon, introduced in the *Phaedrus*, to name a fundamental instability at the heart of Western thinking. The pharmakon—both cure and toxin—is used originally by Plato to characterize alphabetization: an external supplement to memory that seems to aid knowledge, yet risks eroding the embodied, dialogic practice of anamnesis that for Plato defines true inquiry. Writing is thus not merely a neutral technology of preservation, but an ambiguous force that both enables and disrupts knowing and being. Derrida reads this undecidability not as a weakness of writing, but as a structural feature of meaning itself. The pharmakon designates a constitutive tension within every attempt to fix, preserve, or externalize knowledge. It both stabilizes and destabilizes, supplements and subverts, inscribing deferral and ambiguity into the very architecture of rationality.

Alphabetization established the historical logic of treating language as a manipulable sequence; GenAI is a radically scaled computational actualization of that logic. Unlike conventional objects that can be held at a distance and examined from a stable vantage point, GenAI—as a hyperobject—blurs the subject–object divide. Its molten quality signals not only material instability but also a conceptual refusal to stay within classical boundaries between human and nonhuman, perceiver and perceived. Molten, here, means that GenAI participates in shaping the very condi-

tions through which presence, agency, and relationality become intelligible. GenAI, therefore, produces a constant ontological and epistemic tension—enacting alphabetic certainty through sequential computation while generating uncertainty in the uncanny encounters it affords to alphabetized subjects.

Taken together, GenAI functions across three interlinked registers. As a *hyperobject* (Morton 2016), it exceeds perception and operates at scales that dwarf human vantage points. As a *textual apparatus of extralocal ruling* (Smith 1999), it coordinates and standardizes meaning across distance through alphabetic–algorithmic procedures. And as *infratexture*—textual self-folding infrastructure (Hetherington 2014; Braun and Randell 2025)—it inhabits the mundane surfaces, interfaces, and scripts through which world-making infrastructures acquire durability. These three dimensions are not separate phenomena but different modalities of the same cosmocratic project: the drive to stabilize the world through abstraction and certainty. GenAI crystallizes this project by absorbing the dispersed textual residues of human life (foreclosing nontextual resonances) into a latent computational substrate (the infratexture), projecting them outward as generic forms of intelligibility (extralocal relations of ruling), and doing so at scales that produce new forms of indeterminacy and experiential opacity (hyperobject).

As an alphabetized hyperobject and technopolitical pharmakon, GenAI intensifies the Western quest for certainty by operationalizing language, knowledge, and relation through statistical sequence and prediction. Yet in so doing, it exposes the fragility of the very ontology that sustains this quest: promises of clarity and control give way to ambiguity, opacity, and ontological drift. This is not a technical defect but a political condition. In this configuration, certainty and uncertainty are not opposites but mutually constitutive effects of the apparatus itself. If cosmocracy describes the onto-epistemic regime that seeks to stabilize the world into certainty, then GenAI's hyperobject functions as a technopolitical pharmakon that reveals the limits and contradictions of this regime. GenAI embodies the cosmocratic drive for certainty, but it also exceeds and destabilizes the very imaginary that produces it. GenAI actualizes both the enactment and the rupture of cosmocracy.

Governance frameworks that rely on universal categories, linear causality, or risk-based management simply reproduce the modern imaginary that GenAI's hyperobjectic nature renders untenable. The pursuit of epistemic certainty folds into its opposite not just at the level of experience but at the level of governance itself, producing a political condition in which claims to control rest on infrastructures that elude the very forms of mastery they promise. What is required instead is an approach that treats GenAI as a worlding force—one whose power lies in the inseparability of cure and poison, certainty and uncertainty—and that responds with situated, relational, and reflexive practices rather than renewed attempts at control.

Imagining Mastery, Regulating Hypeobjects

Regulatory imaginaries continue to frame GenAI as a governable, coherent object whose risks can be managed through oversight, transparency, and human control. Peter Katzenstein (2022) observes that in political practice, uncertainty is routinely conflated with risk. However, this conflation obfuscates the distinction between operational and radical uncertainty. Operational uncertainty refers to "known unknowns" that can, in principle, be translated into calculable risks through improved information. Radical uncertainty designates indeterminacies that exceed prediction and quantification. Yet, radical indeterminacy is displaced into managerial categories, rendered actionable through metrics, benchmarks, and thresholds.

As Andrew Pickering observes, modern Western science is marked by the aspiration that "islands of stability" become zones of mastery in which the world performs as a predictable machine (Pickering 2017, 141). This aspiration does not eliminate uncertainty; it converts it. This conversion rests upon an alphabetic, substantialist

ontology that presumes discrete agents acting within a single, stable world. Substantialism has exerted a strong influence on political science and international relations, shaping the policy imaginaries through which governance is conceived. From a genealogical perspective, it can be traced back to alphabetic discretization: the rendering of speech into enumerable units that can be ordered, recombined, and stabilized. Order, causality, and predictability become the default assumptions of analysis. Risk governance echoes this logic. Uncertainty is segmented into "risks," harms into categories, and capabilities into measurable thresholds. Like tokenization in large language models, governance transforms diffuse phenomena into countable units that can be ordered and managed. Risk governance thus functions as a political technology of discretization. This dynamic is visible in contemporary regulatory vocabularies that frame GenAI through terms such as "risk mitigation," "human oversight," "alignment," and "trustworthiness." Such language presupposes that uncertainty can be stabilized through improved oversight, clearer standards, and enhanced transparency. The hyperobjectic condition of GenAI—its distributed infrastructures, recursive data flows, and opaque model architectures—is translated into operational concerns: bias metrics, safety benchmarks, and capability assessments. Radical uncertainty is displaced into less visible domains, while governance reinstalls the fiction of a shared, knowable one-world world.

For example, EU AI governance classifies systems into enumerated tiers—"unacceptable," "high," "limited," and "minimal" risk—thereby translating the open-ended uncertainty of AI systems into discrete regulatory categories. The requirement that high-risk systems incorporate "human oversight" further illustrates how governance frameworks convert systemic indeterminacy into procedural safeguards premised on the possibility of supervisory control. Transparency obligations—such as documentation of model capabilities, limitations, and performance metrics—likewise render algorithmic opacity into standardized informational artifacts intended to stabilize interpretability. Taken together, these instruments segment uncertainty into categories, metrics, and procedural controls, translating complex sociotechnical dynamics into administrable units of governance and reinstating the assumption that AI systems can ultimately be rendered legible, predictable, and governable within a shared regulatory frame.

The very processes that enable such governance—discretization, abstraction, and the delegation of agency to technical systems premised on a substantialist ontological imaginary that reduces pluriversality to "one world" (Blaser 2009; Law 2015)—are also those that sediment historical exclusions and inequalities. As Valor (2024) argues, GenAI looks into the past of alphabetic and mathematical textuality and reflects the world back to us as if in a mirror. What appears as neutral optimization is in fact the folding of accumulated sensemaking from prior epochs into present certainties. Biases and inequalities are not accidental glitches; they are patterned inheritances encoded in the textual and computational infrastructures on which GenAI is trained. In this way, epistemic (Fricker 2010) and ontological violence (Wynter 2003) are reproduced under the guise of technical neutrality. Decisions about whose knowledge counts, which realities are rendered intelligible, and which worlds are dismissed as irrational or unreal are stabilized through computational procedures that appear objective. This cosmocratic logic extends beyond algorithmic systems into legal and political institutions structured by similar assumptions. Western judicial practice, for example, is grounded in adversarial verbal disputation and the reconstruction of past events through linear causal reasoning. As Peat (2002) notes, the belief that courts can reconstruct "a certain sequence of events in the past" through verbal argument rests upon assumptions about linear time, objective reality, and the capacity of language to capture the world (47). Such assumptions contrast with Indigenous justice traditions oriented toward restoring balance within relational networks of human and nonhuman beings (Peat (2002), 48). Here again, an ontology of

discreteness, linearity, and individual responsibility structures what counts as justice.

The "violence of the letter" (Derrida 2016; McMahon 2023) persists in computational form. Risk governance does not merely manage harm; it performs ontological closure. It treats uncertainty as a deficit to be corrected rather than as a constitutive feature of sociotechnical entanglement. By presuming a shared and stable world in which harms can be identified and mitigated, it suppresses deeper questions about how worlds are enacted and whose realities count. The cosmocracy of certainty survives the hyperobject not by overcoming indeterminacy, but by formatting it—translating ontological instability into administrative categories and calculable risk.

Embracing Uncertainty

An alternative to risk-based governance cannot be introduced simply by adding new principles to existing frameworks. It requires interrupting the cosmocratic impulse to secure certainty through ever more refined guidelines, benchmarks, and standards. Instead of enhanced normativity, the illusion of a stable vantage point from which reality is rendered intelligible must be questioned. One way to name this interruption is slow science. In Stengers' (2018) formulation, slow science is a demand for hesitation: a refusal of premature closure and an insistence that knowledge practices remain accountable to the worlds they help enact. In this sense, slow science aligns with traditions of radical reflexivity (Pollner 1991; Braun 2024) that make the securing of knowledge itself an object of inquiry, unsettling the fantasy of a stable vantage point from which the world can be rendered fully intelligible.

Slow science becomes especially salient once GenAI is understood as a hyperpharmakon. Bringing Derrida's pharmakon into conversation with Stengers' cosmopolitics and with Morton's hyperobject clarifies why the problem is not merely that GenAI is "risky," but that it folds certainty and uncertainty into one another at a planetary scale. Like the alphabet in Plato's account, GenAI offers reach, reproducibility, and apparent intelligibility, yet does so by flattening heterogeneous practices into machinic prediction and optimization. As pharmakon, it functions as both cure and poison: the same capacities that enable new forms of care, coordination, and creativity also intensify extraction, surveillance, and epistemic foreclosure. As hyperobject, it cannot be fully localized or contained: its infrastructures, training corpora, and recursive deployments exceed any single site of intervention. Hyperpharmakon names this compound condition—an assemblage that promises certainty while producing ontological and experiential uncertainty, and that does so in ways resistant to capture by conventional governance forms.

Quantum social theory (Barad 2007; Heelan 2013; Zanotti 2019, 2025; Fierke and Mackay 2020;) offers a different exit from this impasse—not as a technical fix, but as an ontological reorientation. In Barad's (2007) account, the fundamental problem with substantialist governance is not insufficient information but a misleading metaphysical picture: discrete entities interacting within a pregiven world. Barad's notion of intra-action displaces this premise. Phenomena, not independent objects, are primary; relations are not secondary ties between preexisting relata but constitutive of what comes to matter. Apparatuses are not neutral instruments but performative arrangements that produce "ontological cuts," configuring what becomes determinate, intelligible, and governable. Indeterminacy, on this account, is not an epistemic deficit awaiting resolution but an ontological condition. This matters for GenAI governance because regulation is itself an apparatus: it does not simply respond to GenAI from the outside but participates in the production of boundaries—between human and machine, and harm and benefit, legitimate and illegitimate knowledge—through which the phenomenon is enacted.

If quantum reorients ontology, resonance can be read as an operational ethic of that reorientation—an account of how to remain responsive within indeterminacy

without returning to the cosmocratic promise of control. Resonance, for Rosa (2019), is a mode of relating characterized by responsiveness and mutual transformation rather than mastery. It names encounters in which actors are "touched" and respond in turn, without full predictability or command—an orientation Rosa himself links to Baradian intra-action (Schiermer 2020, 6). Read through the hyperpharmakon; resonance does not mean celebrating uncertainty; it means cultivating practices that can register and respond to emergent effects without demanding that they be exhaustively known in advance. Sheldrake's (1981) notion of resonance, while developed in a different register, can be mobilized here as a provocation about temporality: Instead of treating the past as a stock of stable "data" to be mirrored and mined, resonance foregrounds how patterns of sense-making reverberate and reconfigure across time. This offers a way to think of GenAI's recursive folding—its re-ingestion of textual pasts into present outputs—not as neutral reproduction but as a field-like dynamic that calls for response-ability (Haraway 2008).

In this register, the alternative to cosmocratic governance is not the abandonment of regulation but its reconfiguration. Rather than conceiving regulation as centralized control over a bounded object, we can understand it as a performative and distributed practice emerging through heterogeneous relations among people, texts, and technologies (Law 1986; Latour 2005; Marres 2015). Contemporary experiments with regulatory sandboxing—such as the EU AI Office's planned regulatory sandbox under the EU AI Act, by which each Member State is responsible for running at least one sandbox, or the UK's earlier Financial Conduct Authority model, an inspiration for the decentralized regulatory ecosystem of the EU AI Act—gesture in this direction: by creating bounded environments for trial, monitoring, and iterative adjustment, they acknowledge that governance cannot fully precede technological development but must evolve alongside it.

A related dynamic can be observed in industry experiments such as Anthropic's Claude. Rather than relying only on external rules or post hoc moderation, the "constitutional AI" approach attempts to make normative guidance internal to the model's training process by using an explicit constitution that shapes how Claude evaluates, revises, and ranks possible responses (Bai et al. 2022). As both Claude's published Constitution [2] and recent analysis of it (Maynard and Claude 2026) emphasize, this is presented as an effort to cultivate judgment, reflexivity, and corrigibility through iterative testing, red-teaming, and revision, rather than through fixed commands alone. Yet precisely because these normative principles are largely selected and stabilized within a corporate process, the experiment remains constrained by limited inclusion and legitimacy, even as it gestures toward a more processual form of governance. Here, governance emerges through the continual refinement of the model's responses against textual "constitutions" that articulate acceptable behavior.

In sum, sandboxing and similar experiments often remain time-limited add-ons or removable inserts to otherwise stable regulatory architectures, or internal corporate practices that leave the broader cosmocratic imaginary intact. While such an experiment "from the inside" abandons the god's trick of external oversight from nowhere and acknowledges that regulation itself participates in the mattering it seeks to steer, a resonant approach would radicalize this gesture. It would treat sandboxing not as an exception but as the core modality of governance, institutionalizing experimentation as an ongoing condition rather than a temporary deviation. Resonant governance—understood as governance that remains genuinely open to being affected and altered by what it governs, rather than seeking unilateral mastery over it—would therefore treat standards, benchmarks, and taxonomies as revisable ontological cuts that matter rather than final definitions, building procedures for contestation, learning, and withdrawal into regulatory infrastructures themselves. Any

[2] https://www.anthropic.com/constitution

AI "constitution" should include ways by which it would be ratified by different constituencies, not solely delegated to corporate experimentation. As Jill Lepore notes, Anthropic's Constitutional AI project relies on the assumption that public involvement could be secured by "extensive, remote, scalable digital opinion-gathering, the kind of survey method that essentially turns humans into bots" (Lepore 2026, 22) in lieu of face to face collective deliberations. How participation is gathered matters. Resonant governance should rely on the dialogic practices of anamnesis that for Plato designated true inquiry in the face of the closure of the written text and include mechanisms for citizens' participation rather than delegating AI self-governance to algorithms that are supposed to align their behavior with human values. Regulatory engagement is not neutral observation and separation of harm from benefit by attending to risk, but a constitutive touch: an intraactive intervention that continuously shapes the very boundaries between harm and benefit, human and machine, subject and object. Such an approach does not promise final containment of the hyperobject, nor does it seek to purify the pharmakon into remedy alone. It insists instead on situated accountability: iterative adjustment of categories, openness to contestation, and an explicit willingness to revise governance as the phenomenon reconfigures the conditions under which harm, responsibility, and agency become determinate. In short, resonance articulates what slow science demands in the face of the hyperpharmakon: an ethics and politics of ongoing responsiveness in a world where certainty cannot be secured without violence, and where indeterminacy is not a failure but a condition of collective life with(in) GenAI.

Conclusion

In this paper, we have reconceptualized GenAI as an alphabetized technology of certainty rooted in a Western cosmocracy of control. By bringing IPS into dialogue with genealogies of knowledge, philosophy of science, STS, and quantum social theory, we have explored the ontological bedrock upon which Gen AI rests, and have shown that GenAI governance debates do not simply misrepresent a novel technology; they reproduce a much older cosmocratic imaginary of certainty, whose alphabetic and substantialist foundations GenAI both intensifies and destabilizes. Rather than advancing new technical fixes, our aim has been to open conceptual space for thinking GenAI otherwise—beyond certainty, beyond singular worlds, toward more plural and situated modes of coexistence.

Designed to tame uncertainty through fragmentation and standardization, GenAI functions as a molten, ambiguous hyperpharmakon: a force that promises control yet generates new anxieties about its loss. GenAI cannot be treated as a separable "object" with stable boundaries. It is increasingly woven into the infratextures, practices, and relations that constitute everyday life, while simultaneously extending into planetary-scale extractive networks that are reshaping geopolitical alignments, labor regimes, and resource ecologies. As GenAI becomes embedded across these interconnected layers, its effects grow ever more unstable, uneven, and context-specific. Its rapid evolution further undermines the idea that its effects can be understood or governed through linear reasoning or universal ethical principles. Newtonian ontologies, mechanistic causal models, and abstract regulatory frameworks are poorly equipped to navigate such complexity.

Rather than relying on substantialist assumptions, we argue for an ethics of practice—one that evaluates the situated effects of GenAI's entanglements within specific contexts. Following Simone de Beauvoir's *Ethics of Ambiguity*, and SJ Bennett's recent intervention, ambiguity should not be seen as a problem to be solved but as a "site of ethical responsibility." This means assessing how GenAI operates as ecologies of practice and performative apparatuses: who benefits, who is harmed, who owns and oversees these systems, how resources and labor are mobilized, how environmental and energy costs are distributed, and how its deployment shapes

rights, democracy, and inclusion. The focus is on the politicization of text-reader relations (Smith 1999): How the infratexture integrated into and generated by GenAI is enacted locally in and by people's doings.

Understanding GenAI as an apparatus—as a molten hyperpharmakon—foregrounds the material and relational nature of its world-making effects. Like all apparatuses, GenAI performs boundary-making: it shapes the conditions under which objects, subjects, and actions become intelligible. Its entanglements do not leave their participants untouched; they produce differentiated materializations depending on the networks in which they unfold.

A hyperpharmakon perspective demands that we abandon fantasies of mastery and instead cultivate modes of coexistence marked by humility, reflexivity, and ecological awareness. Resonance offers one such orientation. Where cosmocracy seeks to stabilize the world through abstraction, closure, and final definition, resonance keeps governance exposed to transformation, contestation, and the possibility of being altered by what it encounters. It entails a willingness to confront uncertainty, to question claims of universal applicability, and even to accept that GenAI may need to answer, at times, "I don't know." Translating resonance into regulatory practice requires shifting from static, top-down control to immanent, dialogical, and responsive forms of governance. Rather than treating GenAI as a ready-made object to be governed by predefined rules, we should approach it as a socio-technical assemblage whose governance emerges through ongoing, situated, and agonistic negotiation (Bates, Lin, and Goodale 2016). In this framework, ethics and politics are not abstract universals applied after the fact but are co-produced through processes of mutual articulation and feedback. The hyperpharmakon foregrounds the constitutive ambivalence of GenAI: its capacity to extend and disrupt cognition, language, and agency at the same time. Regulation, accordingly, cannot be merely corrective or preventative. Conceptually, it must engage the aporetic structure of GenAI—recognizing that the very features that make it powerful (scale, speed, opacity, recursive adaptation) are also those that render it ethically and politically fraught.

Institutionally, a hyperpharmakon-based regulatory approach emphasizes reflexivity, iterability, and undecidability. It resists closure and acknowledges that each regulatory intervention can function as both safeguard and limitation. Such an approach demands modalities of governance that are responsive and dialogical, attuned to the shifting entanglements of humans and machines, and foreground political responsibility in a world increasingly shaped by molten, nonlinear, and uncertain forms of intelligence, artificial or otherwise. Governance, on this account, is not the purification of poison from cure but the continuous negotiation of their inseparability.

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