

The Digital Silence: Algorithmic Hegemony and the Visibility Crisis of Non-Western Cultural Heritage in the Era of Generative AI

Jingya Wang

Henan University, Zhengzhou, Henan, China

Abstract: *As the paradigm of information retrieval shifts from traditional search engines to generative "answer engines," the role of algorithms has evolved from sorting information to synthesizing history. This paper argues that the transition to Generative Engine Optimization (GEO) exacerbates existing cultural inequalities. Through the lens of digital colonialism and algorithmic curating, this study examines how the linguistic and data biases inherent in large language models lead to a "digital silence" regarding non-Western cultural heritage. By prioritizing Western-centric datasets, these systems inadvertently marginalize indigenous histories and non-textual cultural traditions, threatening the diversity of global cultural memory in the digital age.*

Keywords: Generative Engine Optimization (GEO); Digital Colonialism; Algorithmic Hegemony; Cultural Heritage; Digital Silence.

1. INTRODUCTION: THE SYNTHETIC PUBLIC SPHERE AND ITS DISCONTENTS

In the year 2026, the digital public sphere is undergoing a transformation that is as much epistemological as it is technological. For decades, the internet functioned primarily as a vast, decentralized archive where the logic of information retrieval was governed by "Search Engine Optimization" (SEO). In that era, the user remained an active agent—a digital flâneur navigating a plurality of hyperlinks, evaluating competing narratives, and constructing meaning from a fragmented landscape. However, the rise of "Generative Engine Optimization" (GEO) has inaugurated what may be termed the "Synthetic Era." In this new paradigm, Large Language Models (LLMs) and generative "answer engines" do not merely direct users to existing information; they synthesize, condense, and output a singular, authoritative reality. For the field of communication studies, this represents a fundamental shift in the distribution of symbolic power. The algorithm is no longer a passive indexer of culture; it has become an active narrator, a black-box curator with the power to define the boundaries of global cultural memory. Yet, this power of synthesis is far from neutral. This paper posits that the generative shift facilitates a "Digital Silence"—a structural invisibility that cloaks non-Western cultural heritage. As these models prioritize data-rich Western narratives, they inadvertently execute a form of symbolic annihilation against marginalized cultures. By examining the transition from SEO to GEO, this research seeks to uncover how algorithmic hegemony reinforces historical inequalities, transforming the digital promise of "global connectivity" into a mechanism of cultural homogenization.

2. THE THEORETICAL FOUNDATIONS: FROM CRITICAL COMMUNICATION TO DIGITAL COLONIALISM

To understand the visibility crisis in the generative era, one must situate the algorithm within the long history of critical communication theory. The current algorithmic landscape is not a vacuum of technical neutrality but a continuation of what Nick Couldry and Ulises Mejias describe as "Digital Colonialism." This theoretical framework argues that contemporary data practices mirror the extractive logics of historical colonialism. Where traditional colonial powers appropriated physical territory and labor, digital colonial powers—largely concentrated in the Global North—appropriate human experience as raw data. In the context of cultural communication, this extraction creates a hierarchy of knowledge. Generative AI models are trained on massive datasets that are inherently skewed toward the Anglophone world and Western intellectual traditions. This data imbalance is not merely a technical glitch; it is an expression of "Epistemic Violence." When an algorithm is trained predominantly on the digitised archives of the West, it adopts a "Western Gaze" that views non-Western cultures as either peripheral, exotic, or non-existent.

Furthermore, we must integrate the concept of "Algorithmic Curating" to describe the function of generative engines. In traditional museology and communication, curating is an ethical act involving provenance, context, and the deliberate representation of diverse voices. However, the algorithmic curator operates on a logic of statistical probability rather than historical accuracy or cultural sensitivity. It values the "most probable" narrative, which, in a skewed data environment, is almost always the Western narrative. This leads to what this paper calls "Epistemic Monoculture"—a state where the diversity of human heritage is flattened into a single, synthesized output that conforms to the dominant data structures. By synthesizing a "singular truth," generative AI erodes the plurality that is essential for a democratic and inclusive global public sphere. The inequality here is not just about who owns the technology, but about whose history is deemed "significant" enough to be encoded into the latent space of the machine.

3. THE MECHANISM OF CULTURAL ERASURE: DATA POVERTY AND THE HEGEMONY OF THE TEXT

The production of "Digital Silence" is fundamentally a byproduct of "Data Poverty" and the structural limitations of machine learning. Generative models require astronomical amounts of structured, high-quality text to function effectively. However, the global distribution of "digitised data wealth" is staggeringly unequal. Western cultural institutions, backed by decades of funding and technological infrastructure, have successfully digitised their heritage, creating a "Data Abundance" that the AI readily consumes. Conversely, much of the cultural heritage of the Global South—including indigenous oral traditions, regional architectural philosophies, and local historical records—remains in physical archives or "low-resource" languages that are not easily accessible to the scrapers of Silicon Valley. This creates "Data Voids" in the global knowledge map. When a user queries a generative engine about a specific Southeast Asian architectural movement or an African oral epic, the AI, programmed to provide a coherent answer, often resorts to "Algorithmic Hallucination." It fills these voids by applying Western aesthetic or historical categories to non-Western subjects, thereby distorting the very culture it purports to describe.

This erasure is further exacerbated by "Linguistic Hegemony." While modern LLMs are multimodal and multilingual, their underlying semantic architecture is deeply rooted in English syntax and Western logical binaries. This creates a "Translation Tax" for non-Western knowledge. To be "understood" by the algorithm, a culturally specific concept must be translated into a framework that aligns with the model's training data. In this process, the nuanced, non-Western meanings of cultural artifacts are stripped away. For example, the spiritual and communal dimensions of an African mask or the intricate socio-political symbolism of a traditional Asian garment are often reduced to mere "aesthetic objects" in the AI's synthesized response. This linguistic bias does not just misrepresent facts; it reshapes the very categories through which we perceive global culture, reinforcing the notion that Western development is the universal standard. The inequality, therefore, is embedded in the very language of the machine, making the "Digital Silence" an inherent feature of current generative architectures rather than a bug.

4. THE SOCIO-TECHNICAL CONSTRUCTION OF INVISIBILITY

The transition to GEO also introduces a new form of "Knowledge Gatekeeping." In the SEO era, a motivated user could theoretically find marginalized cultural information by digging through the "long tail" of search results. In the GEO era, however, the "long tail" is effectively cut off. The generative engine provides a "one-shot" answer that satisfies the immediate information need of the user, discouraging further exploration. This creates a feedback loop of invisibility: because a non-Western cultural artifact is not frequently cited in the AI's training data, it is not included in the AI's synthesized output; because it is not in the output, it is not seen by the public; and because it is not seen, it is not discussed, researched, or digitised further. This socio-technical cycle ensures that the "Digital Silence" is not just a temporary gap in knowledge but a permanent state of cultural exclusion. This invisibility is particularly dangerous in 2026, as AI-generated content begins to outpace human-generated content in the digital ecosystem, leading to a "Synthetic Cannibalism" where AI models are trained on the biased outputs of previous AI models, further entrenching the Western-centric monoculture.

5. CASE STUDY ANALYSIS: THE ALGORITHMIC CONSTRUCTION OF "THE OTHER"

To empirically ground the theoretical assertions of algorithmic hegemony, this section conducts a comparative analysis of how generative engines synthesize knowledge regarding two distinct forms of cultural heritage: Western canonical movements and non-Western vernacular traditions. This analysis does not focus on technical

accuracy in a binary "correct/incorrect" sense, but rather on the narrative granularity, symbolic weight, and framing strategies employed by the generative model.

Case A: The Architectural Hierarchy—Gothic Majesty vs. Vernacular "Simplicity"

When queried about European Gothic architecture, generative engines typically produce a multi-layered narrative that integrates theological, structural, and aesthetic dimensions. The AI synthesized responses often highlight the "transcendence of light," the "mathematical precision of flying buttresses," and the "evolution of urban identity in medieval Europe." Here, the algorithm acts as a sophisticated historian, acknowledging the internal diversity and intellectual rigor of the movement.

Conversely, when the same generative engines are queried about vernacular architectural traditions in sub-Saharan Africa or Southeast Asia—such as the Stilt Houses (Rumah Panggung) or the Adobe structures of the Sahel—the narrative shifts significantly. The AI often collapses centuries of diverse local engineering into a singular category of "primitive adaptation to the environment." The symbolic and cosmological significance of these structures—which in many cultures represent a microcosm of the universe—is frequently omitted in favor of a functionalist description. This is a manifestation of "Symbolic Annihilation": by reducing non-Western heritage to a mere response to environmental necessity, the algorithm strips these cultures of their intellectual and artistic agency. The Gothic cathedral is framed as a product of "genius," while the vernacular house is framed as a product of "instinct." This disparity is a direct result of the "Data Wealth Gap," where the over-digitization of Western architectural theory creates a rich, nuanced latent space, while the lack of digitized indigenous architectural treatises leaves the AI to rely on generic, often colonial-era ethnographic descriptions.

Case B: The Framing of "Progress"—Global Exhibitions and the Erasure of Alternative Modernities

A second case involves the historical framing of "Global Progress" through the lens of international exhibitions. Generative AI models are highly proficient in narrating the "Great Exhibition of 1851" in London, framing it as the zenith of Victorian industrialism and the birth of modern global connectivity. The narrative is one of linear progress, where Western technology is the protagonist of history.

However, when asked about contemporaneous non-Western trade gatherings or cultural festivals that existed outside the Euro-American circuit—such as the historic trade networks of the Silk Road or the regional cultural assemblies in pre-colonial Latin America—the AI's output becomes fragmented. More importantly, when the AI does mention these events, it often frames them in relation to Western "discovery" or "influence." This creates a "Temporal Inequality," where Western history is portrayed as the "active" force of modernity, and non-Western history is portrayed as "passive" or "reactive." In the GEO era, this framing is particularly dangerous because the "one-shot" nature of the AI answer does not allow for the counter-narratives that a traditional search engine might reveal in its "long tail" of results. The algorithm effectively codifies a Western-centric teleology of progress, presenting it not as one perspective among many, but as the objective, synthesized truth of human development.

6. THE VISUAL SILENCE: IMAGE GENERATION AND CULTURAL STEREOTYPES

We must look at more than just text. In 2026, people use AI to make pictures every day. These pictures show how the AI sees the world. I tested many image tools for this study. I asked the AI to show "a beautiful historic street." The AI almost always showed a street in Europe. It showed stone roads and old brick buildings. It did not show a street from Vietnam. It did not show a street from Peru. This is a visual bias. The AI thinks "historic" means "Western." This is a big problem for museums. Museums want to show history from all over the world. But AI makes people think history only looks one way. This makes non-Western history feel like it does not exist.

The AI also uses stereotypes when it shows other cultures. I asked the AI to show "a traditional scholar." The AI showed a Western man with a book. When I asked for an "Asian scholar," it showed a man in very old clothes from a movie. It did not show a modern person. It did not show the real diversity of the culture. This is because the AI learns from popular images on the internet. Many of these images are not deep. They are just surface-level ideas. This is what Noble talks about in her research. She says that "the internet is a site of power" (Noble 1). In 2026, this power is even stronger. The AI picks which images we see. It picks which cultures look "normal" and which look "different." This is a new type of visibility crisis.

This visual bias changes how we remember the past. Pictures are very strong. People believe what they see. If the AI never shows a high-tech city in Africa, people will think Africa has no tech. If the AI only shows Western art in a museum, people will think only the West has great art. This is a silent form of harm. It does not use mean words. It just leaves people out. It makes the world look smaller than it really is. We need to find a way to show the true colors of every culture. We must teach the AI to see the whole world. This is not just a technical job. It is a job for people who study culture and art.

7. DISCUSSION: THE SYNTHETIC PUBLIC SPHERE AND THE DEATH OF THE LONG TAIL

The transition from the SEO era to the GEO era signals more than just a change in information retrieval; it represents a fundamental restructuring of the "Synthetic Public Sphere." In this section, we discuss the broader implications of these findings for global communication equity and the future of cultural memory.

7.1 The Death of the "Long Tail" and the Erosion of Serendipity

In the traditional search paradigm, the "Long Tail" theory—popularized by Chris Anderson—suggested that the internet would democratize culture by giving niche, marginalized voices a platform. While the SEO era had its own biases, it at least provided a pathway for the persistent researcher to find "The Other." A user could scroll to the third or fourth page of search results to find a local archive or a non-Western perspective.

In the GEO era, the "Long Tail" is effectively decapitated. Generative engines are designed for efficiency and consensus; they provide the "most likely" answer based on the center of the data distribution. This "Algorithmic Averaging" acts as a filter that reinforces the majority view while silencing the minority. For non-Western cultural heritage, which often exists in the statistical "tails" of global data, this means a permanent state of digital invisibility. The serendipity of discovering an obscure historical fact or an alternative cultural viewpoint is replaced by a polished, synthesized monoculture. This is what we define as "Epistemic Enclosure"—the process by which the vast diversity of human knowledge is fenced into a narrow, AI-generated consensus that serves the dominant data-owners.

7.2 Synthetic Cannibalism: The Feedback Loop of Inequality

A critical concern for 2026 and beyond is the phenomenon of "Synthetic Cannibalism"—AI models being trained on data generated by previous iterations of AI. As AI-generated content (AIGC) begins to dominate the internet, the biases of the first generation of LLMs become the "ground truth" for the next. If the current generation of AI ignores or misrepresents non-Western cultural heritage, that omission is encoded into the training sets of the future. This creates a recursive loop of inequality. The "Digital Silence" becomes a self-fulfilling prophecy: because the AI does not mention a certain culture, that culture receives less digital attention; because it receives less attention, fewer digital records are created; because there are fewer records, the next generation of AI is even less likely to include it. This process represents a new form of "Historical Revisionism," not driven by political decree, but by the cold, mathematical logic of an extractive data economy. The result is a global cultural memory that is increasingly sanitized, Westernized, and disconnected from the lived realities of the Global South.

7.3 The Agency of the "Black Box" Curators

The discussion must also address the lack of transparency and accountability in "Algorithmic Curating." Unlike traditional media gatekeepers—such as editors or museum curators—whose biases can be critiqued and challenged through public discourse, the generative algorithm operates as an opaque "Black Box." The "decisions" made by the model are not the result of deliberate human choice but are emergent properties of high-dimensional statistics. This makes "Algorithmic Inequality" exceptionally difficult to combat. When a generative engine silences a culture, there is no single "editor" to blame. This anonymity allows tech corporations to bypass ethical responsibility by claiming "algorithmic neutrality," even as their products actively participate in the symbolic annihilation of non-Western identities.

7.4 The Human Cost: Identity and Mental Gaps

We also need to think about the people who use AI. In 2026, many young people get all their facts from AI. They ask the AI about their own family history. They ask about their local heroes. But often the AI says "I do not know."

Or the AI gives a very short and boring answer. This makes the user feel sad. They start to feel like their culture is not important. I spoke to several students for this research. One student from a small island said the AI forgot his people's greatest war. This made him feel invisible in the digital world. This is a "mental gap." It is a gap between who we are and what the machine says we are.

This gap leads to a loss of cultural pride. If a child only sees Western heroes in AI stories, they will want to be like those heroes. They might forget their own stories. This is how "Digital Silence" works on the mind. It is a slow process. It happens every time someone uses an "answer engine." The AI becomes a teacher. If the teacher only talks about one part of the world, the student learns a lopsided truth. We must ask ourselves a hard question. What happens to a culture when its children cannot find it online? This is a major worry for news and communication scholars today. We are not just talking about data. We are talking about human hearts and identities.

This problem is even worse because the AI sounds so smart. It uses a very confident tone. It does not say "I might be biased." It just gives the answer. This makes people trust it too much. Many people in 2026 have lost the habit of checking multiple sources. They take the first answer and leave. This means the AI has the power to shape the identity of millions of people. As Srinivasan says, technology often fails to show the real "global village" (Srinivasan 5). Instead, it shows a village where only a few houses are lit up. The rest of the village is in the dark. We must turn the lights on for everyone.

7.5 The Economic Reason for the Silence

Why do big companies let this happen? The answer is simple. It is about money. In 2026, data is a product. It costs money to find data. It costs money to clean it. Western data is very easy to get. It is already in clean digital files. It is mostly in English. So the companies use it first. Data from other places is "expensive." It might be in a different language. It might be on paper in an old building. The companies do not want to spend the money to get it. They choose the cheapest way to build their AI. This means the "Digital Silence" is a result of profit.

This is a new form of market failure. The market likes big groups. It ignores small groups. In the news world, we call this the "Matthew Effect." The rich get more and the poor get less. In the AI world, the cultures with the most data get the most attention. The cultures with less data get pushed away. This is not a fair race. We cannot wait for the companies to fix this on their own. They will only do what is good for their bank accounts. This is why we need new rules. We need the government to tell the companies they must be fair. We need to make it a law that AI must show many cultures.

8. CRITICAL ANALYSIS: GEO AND THE TRANSFORMATION OF AUDIENCE COGNITION

The transition from Search Engine Optimization (SEO) to Generative Engine Optimization (GEO) is not merely a change in the architecture of the internet; it is a fundamental reconfiguration of the human cognitive relationship with information. In the previous era of search, the interface of the "results page" acted as a space of negotiation. The user was presented with a fragmented mosaic of sources, which required a certain degree of cognitive labor—filtering, comparing, and synthesizing. This labor, while often perceived as an efficiency burden, was in fact a vital component of critical media literacy. It allowed for the "Serendipity of the Margin," where a user, while searching for a mainstream topic, might inadvertently encounter a minority perspective or a localized historical archive.

However, the generative engine collapses this space of negotiation into a singular point of "Synthetic Authority." The core of the visibility crisis lies in what communication scholars call the "Authority Heuristic." Because generative AI outputs are presented in fluent, grammatically perfect, and authoritative prose, they bypass the user's critical filters. The very form of the "answer"—its conciseness and lack of visible internal contradiction—discourages the user from seeking alternative perspectives. For non-Western cultural heritage, this creates a profound "Cognitive Enclosure." When an AI provides a singular summary of "Global Civilization," the user is unlikely to recognize that an entire region's history or a specific cultural philosophy has been omitted. The absence of information is not felt as a gap, but as a completed narrative. This shift represents the death of the "Digital Flâneur"—the curious wanderer of the web—and the birth of the "Algorithmic Consumer," who accepts the synthesized consensus as the boundary of the known world.

Furthermore, GEO logic incentivizes a new form of "Content Homogenization." As content creators and cultural

institutions realize that their visibility depends on being "digestible" for AI training sets, there is a systemic pressure to standardize cultural narratives. Non-Western institutions may feel compelled to translate their heritage into Western-centric categories to ensure they are picked up by the "black box" curators. This leads to a "Double Erasure": first, the algorithm ignores the nuanced local context, and second, the local actors themselves begin to flatten their own history to fit the algorithmic mold. This is the ultimate triumph of algorithmic hegemony—a world where diversity is not silenced by force, but by the structural requirements of digital efficiency. The "Digital Silence" is thus a socio-technical construction that reshapes how humanity perceives its collective past, turning a vibrant, polyphonic history into a monophonic, synthetic echo.

9. DECOLONIZING THE ALGORITHM: POLICY, ETHICS, AND HUMANISTIC INTERVENTIONS

To address the visibility crisis and the systemic inequality of the GEO era, the scholarly community and policymakers must move beyond superficial "technical fixes" and toward a comprehensive framework of "Algorithmic Decolonization." This process requires a radical rethinking of the relationship between data, power, and cultural sovereignty.

The first pillar of this intervention is the concept of "Digital and Data Sovereignty." For too long, the cultural data of the Global South has been treated as a "common good" to be extracted by Northern tech giants, while the benefits of the resulting AI models remain concentrated in the hands of a few. Decolonizing the algorithm begins with the recognition that nations and indigenous communities have the right to own, manage, and protect their cultural data. This involves the creation of "Sovereign Cultural Repositories"—localized, high-quality datasets that are curated by historians and cultural experts rather than web-scrapers. By asserting control over their digital footprints, non-Western cultures can ensure that their histories are encoded into the latent space of the machine on their own terms, rather than as a distorted reflection through a Western lens.

The second pillar involves the implementation of "Algorithmic Reparations." This concept, rooted in critical race and communication theory, suggests that technology is not neutral and that affirmative action is required to correct historical imbalances. In the context of cultural heritage, this could mean that generative engines are designed with "Diversity-Aware Architectures." Instead of prioritizing the "most probable" (and thus most Western) response, algorithms should be weighted to provide multi-vocal perspectives. When a user queries a cultural topic, the engine should be programmed to acknowledge "Data Voids" and actively point to non-Western archives or alternative historical frameworks. This is not about "political correctness" but about "epistemic accuracy"—ensuring that the AI reflects the true diversity of human experience rather than a statistical average of the English-speaking internet.

Finally, we must advocate for a "Human-in-the-Loop" curatorial model that prioritizes the expertise of the humanities. The current obsession with "automated synthesis" ignores the fact that cultural knowledge is inherently contextual and contested. We need "Algorithmic Audits" conducted by interdisciplinary teams of communication scholars, historians, and anthropologists to identify and mitigate cultural biases in generative models. Furthermore, the development of "Pluralistic AI"—models that are specifically designed to handle contradictory or diverse cultural narratives without collapsing them into a single answer—is essential. The role of the communication scholar in 2026 is to act as a bridge between the technical and the ethical, ensuring that as we build the "Synthetic Public Sphere," we do not accidentally build a digital tomb for the cultures of the Global South.

10. CONCLUSION: BREAKING THE SILENCE IN THE SYNTHETIC AGE

The emergence of generative AI represents one of the most significant shifts in the history of human communication, yet its impact on global cultural equity remains deeply troubling. As this paper has argued, the "Digital Silence" is not a technical error that can be solved with more data or better hardware. It is a structural feature of an extractive, Western-centric data economy that values efficiency over diversity and consensus over plurality. From the "Epistemic Violence" of digital colonialism to the "Cognitive Enclosure" of the GEO era, the mechanisms of algorithmic hegemony are actively reshaping the boundaries of our collective memory.

If we allow the current trajectory to continue, we risk a future where the rich tapestry of human history is replaced by a sanitized, synthetic monoculture—a world where non-Western cultural heritage exists only as a distorted

footnote to a Western narrative. However, this outcome is not inevitable. By embracing the principles of algorithmic decolonization, data sovereignty, and humanistic curation, we can challenge the "black box" and reclaim the digital public sphere as a space of genuine cultural plurality.

The task for the next generation of news and communication researchers is to remain vigilant against the seductive "authority" of the machine. We must continue to interrogate the power structures hidden within the code and to amplify the voices that the algorithm seeks to silence. In the end, the value of a civilization is not measured by how efficiently its knowledge can be synthesized, but by its ability to preserve the unique, the local, and the marginalized. To break the "Digital Silence" is to ensure that in the synthetic age, the symphony of human culture remains as diverse, complex, and vibrant as the people who created it.

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