What role do algorithms play in shaping what we know of the world?

Introduction

This essay explores the critical role algorithms play in shaping our knowledge of the world, particularly as social media platforms emerge as dominant epistemic networks (Cinelli et al., 2021). Through a focused examination of how these algorithms curate and influence public discourse, I argue that they do not merely reflect pre-existing dynamics but actively construct our understanding of the world by reinforcing certain narratives while suppressing others. By applying the principles of social epistemology, informed by feminism and critical race theory, this analysis seeks to underscore the profound effects algorithms have on not only perpetuating existing knowledge structures but also on dictating the boundaries of what is considered knowable.

Before delving into the specific roles algorithms play, I first outline my approach to understanding these complex systems. Following this is my development of a theoretical framework that identifies four specific ways in which algorithms impact our worldview: accelerated amplification, structural amplification, algorithmic omission, and algorithmic erasure. To illustrate these concepts, I consider a case study on Meta's handling of Pro-Palestine content, showcasing the practical implications of these theoretical frameworks in real-world settings.

Understanding Algorithms

This paper frames algorithms not merely as neutral tools but as active participants in the spread and suppression of information. These algorithms are central to content sorting, recommendation, and moderation processes and thus become pivotal in our epistemological engagement with digital content (Cinelli et al., 2021). I reject their neutrality as algorithms are deeply embedded within and influenced by the broader social and technical systems that shape their functionality and outcomes. This embeddedness means that algorithms are implicated in social structuring, where

they influence interactions and outcomes based on pre-established criteria that often reflect existing social biases (Beer, 2016). The perceived neutrality and trust in algorithms, driven by their conceptual power, mask their role in perpetuating these biases and structuring knowledge and experiences (Beer, 2016).

This paper therefore views algorithms as sociotechnical systems and aims to emphasise their dual role as both products of and contributors to the societal frameworks within which they operate. This perspective shifts the focus from developer bias, as such a focus can obscure our understanding of the structural injustices inherent in algorithms. As Miragoli (2024) has pointed out, such biases are not only interconnected with wider systems of oppression but are also integral to the foundational structure of AI systems themselves (Miragoli, 2024). Moreover, when evaluating the role of algorithms and assigning responsibility for potential epistemic harms, this paper prioritises the capitalist structures and the corporate leaders who set these profit-driven targets, placing them before the developers in the hierarchy of influence and accountability. This prioritisation is crucial because while developer actions contribute to the outcomes, it is the corporate directives that fundamentally shape the operational ethos and strategic goals of the algorithms used in commercial contexts (O'Connor and Weatherall, 2019). Through this lens, we examine algorithms as active constructors of epistemic realities, fundamentally shaping our understanding (and lack thereof) of the world.

Accelerated Amplification

In the realm of social epistemology echo chambers on social media platforms, where users are continually exposed to content that echoes their existing beliefs, have emerged as a significant concern in understanding how algorithms shape our understanding of the world. Algorithms, crucial in curating and personalising content based on users' past behaviours, preferences, and interactions, create feedback loops that amplify these biases, reinforcing users' pre-existing views (Cinelli et al., 2021).

Recall how we discussed that algorithms extend beyond mere tools of political or commercial biases; many are designed primarily with profit motives in mind. Social networking platforms, while theoretically capable of enhancing diversity and

promoting varied viewpoints, often fall short due to these algorithmic goals. The commercial imperatives lead to decisions that prioritise engagement over informational integrity or diversity, thus fueling the prevalence and intensification of echo chambers to keep users on platforms (O'Connor and Weatherall, 2019). This process of reinforcing echo chambers is exacerbated by the algorithms' tendency to limit exposure to diverse viewpoints and experiences by filtering content deemed irrelevant, creating 'filter bubbles' where we are confined to learning about the same things(Pariser, 2011).

Building on this, the significant question regarding the role of algorithms in echo chamber creation arises: Do algorithms merely reflect user behavior, or do they actively shape it? I argue that the role of algorithms is not merely reflective but distinctly amplificatory. This "accelerated amplification" occurs as algorithms not only match but magnify user preferences at a much faster rate than typical social exchanges would allow by not only recommending content users would not have come across otherwise but also placing creators and content users would want to see at the top of their feeds (Miragoli, 2024). Without sorting algorithms, users typically had to scroll for longer to replicate this effect when order was determined chronologically, for example.

Just as algorithms themselves are far from neutral, their amplificatory effect is significantly shaped by commercial tactics and profit-maximising goals of companies like Meta. Such goals lead to a focus on engagement metrics which causes platforms to promote unverified sensational, controversial, or emotionally charged content (O'Connor and Weatherall, 2019). As a result, these echo chambers do not merely reinforce existing beliefs but also frequently become chambers of misinformation, where sensational unverified information proliferates. Thus, the accelerated amplification by algorithms does more than sustain echo chambers; it expands and shapes them dynamically, making it a crucial factor in shaping public discourse and world views, suggesting that algorithms play a foundational role in amplifying the digital echo chambers that significantly influence what and how we know the world through online platforms. In the next sections, I consider other factors shaping algorithmic amplification and other roles algorithms play in structuring knowledge.

Structural Amplification

Echo chambers, while fundamentally a result of algorithmic personalisation, do not affect all equally. Algorithms function as dynamic shapers of content, not just passive filters, often bolstering dominant perspectives at the expense of marginalised voices. This effect, which I term "Structural Amplification," refers to the way algorithms enhance the visibility and spread of certain viewpoints based on their initial engagement metrics (Christin and Lu, 2023), thereby embedding these views more deeply within the digital social structure.

Cobbe (2021) highlights the significant role platforms' algorithms play in customising content feeds, which fundamentally shape user experiences and perceptions of the world around them. This customisation leads to a critical differentiation between echo chambers, which actively discredit opposing views, and epistemic bubbles, which merely limit exposure to differing viewpoints without outright discreditation (Nguyen, 2020). Algorithms lead to the formation of the former, by promoting controversial, or emotionally charged content, not only restricts the diversity of accessible information but also often discredits or diminishes opposing perspectives (Nyugen, 2020). One reason for this discreditation is the fact that, similar to the algorithms and the structures behind them, individuals often associate engagement metrics such as likes and comments with credibility, reflecting a 'credit economy' of social validation (O'Connor, 2023; Christin and Lu, 2023). The metrics of visibility are increasingly being governed by algorithms, creating a self-perpetuating cycle where algorithmic influence begets further engagement and visibility. This cycle may harm public discourse by reinforcing prevailing narratives and excluding critical counter-narratives. Knobloch-Westerwick et al. (2020) describe this epistemic convergence on unverified beliefs as "Epistemic Conformism", however as their view does not take wider societal issues and structural biases into account, I argue that this conformism around misinformation ought to be looked at as a form of ignorance rather than knowledge instead in the following section.

Here one might ask the question of whose voices are amplified? While this differs from context to context, past studies looking at the demographic makeup of Meta's most influential posts and creators found them to be majority white and American (O'Connor, 2023; Christin and Lu, 2023). This was attributed to both systemic biases

and algorithmic sorting and be explained by the reliance of machine learning and artificial intelligence on large data sets sourced from the likes of Reddit and Wikipedia, which are predominantly dominated by non-representative demographics (Bender et al., 2021). For example, 67% of Reddit users are white American men, while only 8.8–15% of Wikepedians are women or girls (Bender et al., 2021).In understanding the role of algorithms in shaping public discourse, it is crucial to consider how "Structural Amplification" not only reflects but actively constructs the digital landscape by selecting who dominates. In the following sections, we build on the above ideas and look at who is disadvantaged.

Algorithmic Omission

Both within and beyond the scope of echo chambers, in assessing how algorithms influence our knowledge, it is crucial to understand their role in curating both what we know and what we remain ignorant about. This selective curation is a core function of digital platforms, where algorithms act as gatekeepers of knowledge. This role, which I term "Algorithmic Omission," involves the unintentional exclusion of information, shaping our world understanding by dictating the boundaries of what we know about the world.

Charles Mills' concept of "white ignorance" illustrates how ignorance is often constructed to maintain social power structures. Mills (2007) argues that when systems are designed by dominant groups—often white designers—they use their own ignorance the baseline for 'neutral ideal systems'. This design choice inadvertently sets a boundary based on their own limited understanding, determining what is deemed relevant or irrelevant in these systems (Mills, 2007). What is typically seen as irrelevant is what comes from minority voices due to both biases and a lack of understanding (Younes, 2023; Christin and Lu, 2023). This mechanism is particularly evident in digital algorithms, where biases embedded in the code and skewed data sets which train them can perpetuate systematic ignorance regarding minority perspectives by not showing them as frequently. This skewed data input not only determines the content we are exposed to but also significantly shapes our collective ignorance by limiting our exposure to a broader spectrum of information- ‘ignorance in, ignorance out’ (Mills, 2007). While we could argue that users ought to

seek out diverse information to combat this ignorance, the structure of these algorithms—driven by engagement metrics and profit motives—makes it difficult for users to find content outside of what the algorithm deems relevant to them or popular in order to keep them on the platform (Bender et al., 2021). Moreover, since popular views often reflect the ‘majority’, users in the minority typically understand the prevailing testimonies. However, the inverse is not true, as majority views are often more prominently featured due to structural amplification (Christin and Lu, 2023).

"Algorithmic Omission", the flipside of Structural Amplification therefore highlights a crucial aspect of digital platforms: algorithms are not merely passive filters of information but active constructors of the epistemic landscape. They shape not only what is known but also outline the silhouette of what remains unknown. By supressing certain information, these algorithms craft an environment that recognises specific truths and omits others, thus perpetuating a cycle of ignorance that favours the perspectives of historically dominant groups. Recognising the role of algorithms in shaping our ignorance as well as our knowledge allows us to see the full spectrum of their impact on shaping worldviews.

Algorithmic Erasure

Algorithms function as key mediators in digital platforms, not only sorting and moderating the content we consume but also shaping the broader epistemic landscape in which we operate. Sorting involves the algorithmic prioritisation of certain content over others based on predefined criteria or perceived user preferences. Moderation, on the other hand, involves the removal or suppression of content that is deemed inappropriate or harmful according to specific platform policies and can sometimes be seen as a form of censorship (Cobbe, 2021). Moderation and censorship both contribute to a process I describe as "Algorithmic Erasure," where significant aspects of our cultural and social reality are selectively omitted from the digital discourse. This differs from omission in the sense that this suppression of information can be seen as its own separate and deliberate process whereas in the case of algorithmic omission, the suppression of knowledge can be seen as an unintended byproduct of the structural amplification of certain voices.

To understand how deeply entwined erasure is with what we know of the world, we must first grasp the concept of gaslighting. Traditionally, gaslighting refers to psychological manipulation that makes the victim doubt their own reality or memories. Extending this into the sociocultural domain, Cultural Gaslighting as introduced by Ruiz (2020), involves systemic power mechanisms that subtly undermine and discredit the identities and experiences of minority groups, contributing to social inequality and perpetuating forms of cultural genocide. This form of gaslighting uses manipulation of information, representation, and narrative to not only erase but sometimes rewrite the realities of oppressed groups, making them question their own experiences and history. In the context of digital platforms like Facebook and Instagram, algorithmic erasure manifests as biases in content moderation and algorithmic recommendations, which disproportionately impact minority voices (Bender et al., 2021). These platforms, driven by commercial incentives, tend to enforce content policies that align with the norms and values of dominant groups—predominantly white, privileged, male, and Western—thus perpetuating a colonial dynamic within the informational commons (Cobbe, 2021).

The impact of such algorithmic decision-making is profound, systematically sidelining alternative narratives and enforcing a homogenised cultural and epistemic norm. Studies have shown that algorithmic systems, especially those using machine learning trained on non-representative datasets, lack the capability to fully understand or contextualise content that deviates from the majority data norms (Cobbe, 2021; Younes, 2023). This often leads to discriminatory practices where content from minority groups is more likely to be flagged or removed even when expressing injustices or reporting hate crimes, further marginalising these voices and contributing to a digital environment that mirrors systemic racial and cultural biases (Cobbe, 2021: Bender et al., 2021).

Thus, "Algorithmic Erasure" not only spreads ignorance but actively constructs a digital reality that limits epistemic diversity and reinforces colonial and racial capitalist dynamics. This process deliberately erases certain truths from our digital dialogue, thereby shaping not only what we know, and what we do not know, but also what we are *allowed* to know. The next section utilises a case study based on a recent Human Rights Watch report on Palestine to illustrate these abstract concepts and bring together the ideas discussed here. Before proceeding it is worth emphasising

that the aim of this paper is not to analyse the Israel-Palestine conflict; rather, it proceeds on the premise that Palestinians represent a colonised group striving to convey their stories online and advocate for their self-determination in digital arenas (MacMohan, 2014; Younes, 2023). For the scope of this case study, the critical point is the acknowledgment of the suppression of a historically overlooked narrative (Said, 2000) , irrespective of the debate surrounding current events.

Case Study: The Colonial Dynamics of Algorithmic Censorship

In analysing the role of algorithms in shaping public knowledge, a particularly stark example emerges in the way content related to Palestine is managed on platforms like Facebook and Instagram, owned by Meta. A recent Human Rights Watch Report finds systemic patterns of suppression, such as shadow banning and post-removals of Palestine-related content (Younes, 2023). Shadow banning, a term describing when users' content is covertly made less visible or undiscoverable without their knowledge, is an algorithmic moderation technique that is particularly insidious (Younes, 2023). It represents a silent but effective means of control within the digital sphere, leaving individuals under the illusion that their voices are heard while muting them. These practices not only control the narrative but also quietly shape the collective understanding of geopolitical issues.

The systemic censorship of Palestinian content by Meta, as detailed in the findings of a recent Human Rights Watch report (Younes, 2023), underscores a digital paradigm that mirrors historic structural patterns of control and dominance. The automated moderation systems that Meta employs, responsible for preemptively filtering out over 90% of content flagged as policy violations, are a testament to the growing dependency on algorithmic governance (Younes, 2023). These with their tendency to misinterpret context, often result in the unwarranted censorship of content related to Palestinian issues—content that is removed by the broad net cast by Meta's Dangerous Organizations and Individuals (DOI) policy which essentially equates the word ‘Palestine’ with terrorism (Younes, 2023). Human Rights Watch and other watchdogs have highlighted that Meta's platforms systematically diminish or remove content supporting Palestinian perspectives under the guise of violating

community standards—a practice not equally applied to analogous content from other groups (Younes, 2023). This highlights not only a technological inadequacy when it comes to understanding but also an alignment with prevailing power structures, particularly those of the United States, echoing a colonial mindset where the digital territory is yet another frontier to be governed and controlled.

Here, it can be argued that the shadow of colonialism extends far beyond the geographical bounds of historic empires to the very algorithms that orchestrate our digital interactions. McMahon (2014) notes that colonial-settler states like the U.S. and Canada, along with organisations like the UN and EU, have been complicit in their inaction regarding the colonial practices of Israel, allowing corporate entities to profit from these regimes. Similarly, the digital practices of platforms such as Meta replicate these colonial dynamics, where U.S. dominance in technology and its geopolitical interests shape the narrative and determine which histories are told and which are obscured (Younes, 2023). Frantz Fanon's (1963) insights provide a stark parallel to this phenomenon, capturing the essence of settler-colonial societies where the coloniser is not only the maker of knowledge and history but also fully conscious of this role. In the digital sphere, Meta's algorithms embody this consciousness, actively participating in the historical discourse by deciding which content is preserved for public consumption and which is concealed. This selective process, influenced by the colonial legacies and interests of dominant groups, casts a long shadow over the representation of the Palestinian and many other Indigenous narratives, effectively erasing and rewriting the realities of a colonised people.It is here that Ruiz's concept of cultural gaslighting becomes particularly relevant, illustrating how systemic social mechanisms perpetuate social inequalities by maintaining dominant and often colonial narratives while suppressing alternative viewpoints (Ruiz, 2020). Thus Meta's practices not only restrict what can be known but also define the limits of what can be imagined about conflict and resistance, effectively gaslighting the global audience into a biased understanding.

Through this lens, algorithms are seen not just as tools of information sorting but as active constructors of a colonial epistemic landscape, profoundly determining what we know and what we remain ignorant about. They wield the power to erase and rewrite realities, contributing to a digital environment that reflects and reinforces the interests of dominant groups.

Conclusion

In addressing the question, "What role do algorithms play in shaping what we know of the world?" this essay has demonstrated that algorithms are integral to perpetuating specific narratives and controlling the flow of information. They are far from passive tools; instead, they actively shape our epistemic landscape. Through practices like accelerated and structural amplification, algorithms reinforce dominant narratives, while practices like algorithmic omission and erasure suppress alternative perspectives. This dual function not only deepens existing social divides but also reinforces systemic biases by prioritising content that aligns with the interests of dominant groups.

The case of Meta's censorship of Pro-Palestine content vividly illustrates the implications of such algorithmic control, highlighting the need for transparent governance of these digital mechanisms. This underscores the urgency to rethink how algorithms are designed and implemented, pushing for a shift from algorithms that dominate to those that democratize knowledge.

As we move forward, the challenge is to confront these ingrained biases and to reimagine the role of algorithms in our digital world as they grow increasingly influential. It is crucial to advocate for and establish a digital environment that genuinely represents a diverse array of voices and perspectives, thereby fostering global equity and justice. This is not merely a technical challenge but a profound societal imperative that calls for a reevaluation of the power dynamics embedded within our societal and digital infrastructures.

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