

Different Platforms, Shared Imaginaries: A Comparative Analysis of Cross-Platform User Experiences

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ABSTRACT

Algorithmic imaginary—a term postulated by Bucher (2017)—conceptualizes how social media users perceive platforms' algorithms and the corresponding effects on their feelings and interactions with the platforms. The concept has evolved to adapt to the increasing intricacies of research on platforms' algorithms and their effects on users' emotions. This study synthesizes and analyzes research on user perceptions of algorithms (algorithmic imaginaries) across three major social media platforms: Facebook, Instagram, and TikTok. Employing a comprehensive literature review methodology, the study examines how these imaginaries shape user emotions and behaviors. Findings reveal common themes across platforms: algorithms are perceived as opaque, manipulative, and potentially restrictive, leading to negative emotional responses. Users adopt various strategies to regain control and seek transparency. The paper underscores the need for a more inclusive approach to algorithmic literacy, involving both users and platform designers, to foster a more positive and empowering social media experience.

Keywords: algorithmic imaginary, algorithmic literacy, emotions, social media, user experience

INTRODUCTION

Earlier social media platforms such as MySpace and Friendster used to feature their users' posts in a chronological order (Hamin 2023). This changed in 2009 when Facebook pioneered the use of algorithms to personalize content feeds, prioritizing relevance over recency. Facebook claimed this enhanced the visibility of meaningful data for users, a trend quickly adopted by platforms like Twitter and Instagram (Hutchinson 2016). As algorithms learned user behavior, they became integral to shaping the user experience. The omnipresence of algorithms demonstrates their growing social power (Olhede & Wolfe 2018), and simultaneously, raises the need to research the affective grip that they seem to have on users; especially users' emotions and feelings drive their behaviors on the sites. Bucher (2017) coined the term "algorithmic imaginaries" to describe how users perceive and are affected by platform algorithms, sparking research into this phenomenon across various digital platforms, including social media, OTT services, and news bots (Schulz 2023).

To delve deeper into the question of algorithmic influence on user experience, this study synthesizes findings on algorithmic imaginaries across three prominent social media platforms: Facebook, Instagram, and TikTok. The study examines how these imaginaries affect users' moods, sensations, and ultimately, their platform usage. These platforms were chosen due to their popularity, large user bases, and the abundance of relevant research available. To provide a solid foundation for this analysis, the theoretical underpinnings that inform the understanding of algorithmic imaginaries are first explored. The paper begins with *Theoretical Foundations for the Review*, discussing key frameworks from communication and social media studies that offer valuable perspectives on the interplay between users, platforms, and algorithms. These frameworks provide a conceptual lens through which one can examine the historical evolution of the term "algorithmic imaginaries" and the empirical findings across different platforms. The paper presents the synthesized findings, highlighting common themes and divergences, and conclude by discussing the implications for algorithmic literacy and user empowerment in the digital age.

THE THEORETICAL FOUNDATIONS FOR THE REVIEW

The exploration of algorithmic imaginaries and their impact on user experiences necessitates a robust theoretical foundation that can illuminate the complex interplay between users, platforms, and algorithms. The theory of Technological Determinism serves as an initial perspective, positing that technology shapes society and human behavior (McLuhan 1964). In the context of social media, this theory suggests that the design and functionalities of algorithms significantly influence user experiences and their subsequent actions. The black box nature of algorithms, where their inner workings remain largely hidden from users, can create a sense of technological determinism, where users feel their online experiences are controlled by forces beyond their comprehension (Bucher 2019). The constant updates and modifications to these algorithms further reinforce this perception, as users are perpetually adapting to technological changes they have little control over. In contrast, the uses and gratifications theory emphasizes the agency of users in selecting and interacting with media platforms to satisfy their needs and desires (Katz, Blumler, & Gurevitch 1973). It highlights the active role users play in navigating the algorithmic environment, employing

strategies to control their experiences, curate content, or manipulate interactions to fulfill specific needs and gratifications.

Critical theory and political economy of communication offers a critical lens to analyze the power dynamics between platform designers and users (Mosco 2009). The lack of transparency surrounding algorithmic operations can be seen as a manifestation of power imbalance, where users are subjected to algorithmic decisions without full understanding or control. This perspective also raises concerns about the potential for algorithmic bias and the marginalization of certain communities (Noble 2019).

The concepts of participatory culture and produsage further emphasize the active role of users in shaping their online experiences (Jenkins 2007; Bruns 2008). They challenge traditional notions of passive media consumption, framing user strategies as forms of participation and resistance within the platform's constraints. These actions demonstrate users' attempts to reclaim agency and negotiate their position within the algorithmic environment.

Finally, media literacy and digital literacy theories underscore the importance of critical understanding and skills to navigate the complex media landscape (Livingstone 2004). The concept of algorithmic literacy emerges as a crucial component of digital literacy, emphasizing the need for users to develop skills to understand, critically analyze, and effectively engage with algorithms (Shin, Rasul, & Fotiadis 2022). Algorithmic literacy empowers users to make informed choices about their online interactions and navigate the potential challenges and opportunities presented by algorithmic systems.

These theoretical frameworks, while distinct in their focus, collectively offer a comprehensive understanding of the complex relationship between users, platforms, and algorithms. They provide a foundation for analyzing the emergence and impact of algorithmic imaginaries, as well as the diverse strategies users employ to navigate their algorithmic experiences. Through these frameworks, we can gain deeper insights into the dynamics of user agency, power relations and the evolving nature of digital literacy in the age of algorithms.

ALGORITHMIC IMAGINARIES

The concept of "algorithmic imaginaries" emerged from early studies examining user perceptions and assumptions about Facebook's algorithms. Grimmelmann (2009) discussed how early Facebook algorithms analyzed connections and shared information within user networks, laying the groundwork for personalized content feeds. Bucher (2012) explored the notion of users making assumptions about how Facebook's algorithms structured visibility by ranking, sorting, and classifying users' interaction activities on the platform (1177), highlighting the potential disconnect between actual algorithmic functions and user perceptions. The term algorithmic imaginary itself was formally introduced by Bucher (2017), emphasizing the role of emotions and feelings in shaping users' perceptions of and interactions with algorithms. This marked a shift towards recognizing the subjective and affective dimensions of the user-algorithm relationship.

Subsequent research expanded the concept beyond individual perceptions to encompass the collective and social aspects of algorithmic imaginaries. The notion of "algorithmic gossip" (Bishop 2019, 2589) captures how users share and circulate strategies for manipulating algorithms,

contributing to a shared understanding of their perceived power and influence. This social dimension of algorithmic imaginaries highlights the role of communication and collective sense-making in shaping user experiences.

More recent scholarship has drawn upon broader theoretical frameworks to deepen our understanding of algorithmic imaginaries. The concept has been connected to Castoriadis' theory of the social imaginary, which emphasizes the dynamic and evolving nature of user perceptions in relation to algorithms (Schulz 2023). This perspective underscores the reciprocal relationship between users and algorithms, highlighting that both users' perceptions of algorithms and designers' assumptions about user behavior shape the online experience. Developing knowledge of this process has long been a challenge since platforms' algorithms are often opaque and not readily accessible to the public (Brevini & Pasquale 2020; Swart 2021; Zeng & Kaye 2022).

RATIONALE AND REVIEW METHOD

In the following sections, this paper undertakes a comprehensive review of the literature on platform users' emotions, provoked by their interactions with platform algorithms and their perceptions of algorithmic functions. This review employs the Comprehensive Literature Review (CLR) model outlined by Frels (2016). The following research questions guide the review: 1. How do users perceive algorithms on different social media platforms—Facebook, Instagram, and TikTok? 2. What emotional responses do users experience in relation to algorithmic imaginaries? 3. How do users adapt their behaviors in response to these emotions and perceptions?

The review process began with a Google Scholar search using the key term "algorithmic imaginary," focusing on publications since Bucher's (2017) work. Titles, abstracts, and keywords (e.g., platforms, emotions, behaviors, strategies) were scrutinized for relevance. The "cited by" function on Google Scholar was utilized, particularly for Bucher's paper, to identify subsequent research that examined the concept of algorithmic imaginary across various contexts, such as social media platforms and their users.

In addition to exploring these contexts, the search was broadened to track the evolution of algorithmic imaginary research since 2017. This involved examining key publications, shifts in theoretical frameworks, and emerging methodological approaches in the field. The aim was to ensure a more accurate and comprehensive understanding in the fast-changing era of social media, acknowledging how both platform algorithms and user perceptions have evolved over time. The collected data was analyzed manually to identify key themes and patterns.

The selected papers were then meticulously examined and categorized based on their relevance to the target platforms, namely Facebook, Instagram, and TikTok. These platforms were chosen due to their widespread popularity, diverse user demographics, and distinct algorithmic features, providing a representative sample of social media experiences. The review then analyzed reported imaginaries and their associated emotional responses across these platforms. The focus on emotions is justified as they have substantial influence on human cognitive processes and behaviors (Dolan 2002; Cherry 2019).

In the context of social media research, platform users' emotions, triggered by interactions with platform algorithms, have been shown to shape their behaviors on these platforms, including

actions such as hiding content, following or unfollowing friends or pages, discontinuing usage, or even sharing their peculiar experience with the algorithms of one platform and the entailed emotions on another platform (Bucher 2017). Accordingly, this review examines the prevalence and intensity of users' positive and negative emotions, aiming to identify platform-specific trends and potential cross-platform similarities or differences in user assumptions, emotional responses, and adaptive behaviors.

USER IMAGINARIES, EMOTIONS AND RESPONDING BEHAVIORS ACROSS PLATFORMS

Facebook

As an early pioneer of Web 2.0's participatory ethos, allowing user-generated content and interactive usability, Facebook quickly became a subject of academic interest regarding its algorithmic influence on end-users. People first came to this platform for their needs of belonging and self-representing (Nadkarni & Hofmann 2012) which are satisfied through meaningful interactions with the contents, namely posts, shares, comments, and 'likes' from their connections and themselves on the platform. In this context, most of the reviewed Facebook-specific literature on algorithmic imaginary focused on investigating how ordinary users make sense of the Facebook algorithms' involvement in their socializing interactions. These studies explored how users' negative emotions were provoked when they encountered the algorithmic involvement in the curation of their news feed that they found 'creepy' and 'weird' (Eslami et al. 2016; Bucher 2017).

How Facebook's news feed algorithms make users feel had been well-studied prior to Bucher's (2017) seminal work. Users had expressed annoyance upon realizing that the News Feed prioritized posts from friends they interacted with most (Eslami et al. 2015). They believed that the news feed was generated based on their likes and comments, fueling worries about data privacy (Schwartz & Mahnke 2021). Bucher's (2017) research revealed a range of negative emotions among Facebook users regarding the platform's algorithms. Confusion was evident in expressions like "feel wrong" (Bucher 2017, 34), "at odd" (Bucher 2017, 38), "super frustrating" (Bucher 2017, 36), "generalized anxiety" (Bucher 2017, 37), and "the oddness of the machines intercepting emotions" (Bucher 2017, 38). Disappointment was reflected in phrases like "did a poor job" (Bucher 2017, 36), "the connections that Facebook makes are simply wrong" (Bucher 2017, 34), and "incorrectly assessing social network desires" (Bucher 2017, 35). Annoyance and anger surfaced through terms like "annoyed" (Bucher 2017, 35), "agitated" (Bucher 2017, 36), "Facebook ads are slightly offensive, making assumptions about users" (Bucher 2017, 34), and "making decisions on my behalf" (Bucher 2017, 39).

Since Bucher (2017), research on algorithmic imaginaries continues to highlight Facebook users' emotional responses. Swart (2021) reported users' feelings of oddness when the platform failed to display posts from friends and family. Surprise has been noted when Facebook ads don't align with user preferences, and even shock when recommendations appear to be based on private conversations (Büchi et al. 2023). Jacobsen (2022) documented an extreme case of poignancy, where a user's 'Year in Review' included a montage of his deceased daughter, highlighting the emotional impact of algorithmic curation.

Facebook users have also expressed mixed feelings when encountering algorithmically curated content on their news feeds. While enjoying it as a relief from information overload, they simultaneously felt a loss of control by letting algorithms decide for them (Bucher 2017). This highlights a tension between convenience and autonomy. In addition to sharing emotions on social media or being influenced by emotionally contagious content—which is often algorithmically amplified—Facebook users also experience emotions shaped by their perceptions of how algorithms work (Yeo et al. 2020; Chawla & Mehrotra 2021), adding another layer of complexity to the emotional landscape of social media. There were instances of Facebook users reporting adjustment of the news feed settings or interactions with their connections on the platform to manipulate the display of content in their news feed (Bucher 2017).

Instagram

Instagram users frequently report a variety of negative emotions in response to their experiences with the platform's algorithms. These emotions encompass confusion, frustration, uncertainty, disappointment, and dissatisfaction (Cotter 2019; O'Meara 2019; Arriagada & Ibáñez 2020). Content creators, in particular, express distress when their efforts to conform to perceived algorithmic rules do not yield the expected visibility, using language that evokes feelings of anxiety and powerlessness (O'Meara 2019; Cotter 2021; Duffy & Hund 2021). The 2016-shift from a chronological to an algorithmically curated feed amplified these negative emotions. Users reported feeling frustrated and uncertain due to the inexplicable relationship between content quality and engagement metrics (O'Meara 2019). The perception of constant, unpredictable algorithm changes fostered feelings of being manipulated and a lack of control (Cotter 2019; O'Meara 2019).

Cotter (2021) introduced the concept of "black box gaslighting" (1227) to describe the power imbalance between users and the platform. This phenomenon, exemplified by shadow banning practices, creates confusion, anxiety, and self-doubt among users, particularly among content creators who feel subject to algorithmic control. The resulting lack of transparency and perceived loss of control over their "labor process" exacerbates these negative emotions and fosters a sense of pressure to constantly adapt to the platform's demands (Cotter 2019; O'Meara 2019, 4).

These negative emotions drive content creators to adapt their strategies in response to the perceived algorithmic control. Research on algorithmic imaginaries among Instagram users has focused on how Key Opinion Leaders (KOLs) and influencers try to make sense of and manipulate the platform's algorithm to maintain visibility (Cotter 2019; Arriagada & Ibáñez 2020; Duffy & Hund 2021). They invest significant effort in creating content and experimenting with engagement tactics, often forming "engagement pods" or utilizing bots to boost visibility (O'Meara 2019, 6). However, these efforts can backfire, as the platform may penalize perceived manipulation through shadow banning (Cotter 2019; Cotter 2021). This constant struggle to appease the algorithm can lead to burnout and frustration among content creators, highlighting the emotional toll of navigating the platform's opaque and ever-changing rules.

TikTok

TikTok, while sharing similarities with other platforms, distinguishes itself through its algorithm-centric design, prioritizing human-platform interaction over traditional social networking (Herrman 2019). This unique approach, exemplified by the For You algorithm's highly personalized content curation, has contributed to the app's rapid rise in popularity (Statista Research Department 2023).

However, this emphasis on algorithmic curation also shapes user experiences and concerns in distinct ways. Research reveals a dichotomy in user experiences on TikTok (Bellan 2021) due to the platform's algorithmic personalization, which yields a certain level of ambivalence amongst users' feelings as they interact with the app, with positive sentiments (enjoyment, a sense of comfort, pleasure, interest, awe) rooted mainly in the algorithms' ability to suggest relevant content and cluster users in a way that encourage the formation of communities, and negative emotions (dissatisfaction, annoyance, a sense of unease) often revolving around privacy issues and the algorithms' formation of user identities, based on which it suggests relevant content (Schellewald 2022).

TikTok users also felt ignorant about how exactly TikTok could process their preferences and deliver matching content with such pinpoint accuracy, especially when "there are no hashtags or anything" (Schellewald 2022, 5). They also confessed feeling uncertain regarding how the algorithms work, and thus, find it difficult to "get out of" the suggested stream of content (Bhandari & Bimo 2022, 6; Schellewald 2022). This uncertainty, however, is more pronounced among ordinary users than content creators, who often feel more comfortable with the algorithm due to their increased understanding of its mechanics (Eslami et al. 2018; Simpson & Semaan 2021).

Furthermore, TikTok users, particularly those from marginalized communities, experience a unique mix of feelings. While the algorithm can foster a sense of community and validation by connecting users with similar interests and identities, it can also lead to feelings of being boxed in by limiting exposure to diverse content and perspectives (Devito 2022). This highlights the potential for algorithmic personalization to both empower and restrict users simultaneously, depending on their individual experiences and needs.

While ordinary users often struggle to understand the intricacies of the algorithm, expressing concerns about surveillance and feeling overwhelmed by its accuracy (Bhandari & Bimo 2022; Schellewald 2022), content creators demonstrate a greater sense of agency. They actively engage with the algorithm, leveraging their understanding of its mechanics to enhance visibility and cultivate communities (Eslami et al. 2018; Simpson & Semaan 2021). However, even content creators express frustration with the algorithm's tendency to prioritize singular identities, potentially limiting the reach and impact of diverse voices and activism movements (Simpson & Semaan 2021; Devito 2022).

Interestingly, this heightened algorithmic awareness has led some TikTok users to develop a form of "algorithmic literacy" (Shin, Rasul & Fotiadis 2022, 1215). They create and share content that reflects their understanding of the algorithm's workings, demonstrating a level of agency and engagement that goes beyond passive consumption. This phenomenon highlights the dynamic and evolving relationship between users and algorithms on TikTok, where both sides are constantly adapting and responding to each other.

COMMONALITIES ACROSS PLATFORMS

The review highlights that users of Facebook, Instagram, and TikTok perceived the platforms' algorithms as an opaque and unpredictable system (Bucher 2017; Bhandari & Bimo 2022; Schellewald 2022) due to their limited understanding of how the algorithms curate and display what contents are available on their newsfeeds. They also perceived the algorithms as a manipulative and controlling system (Cotter 2019; O'Meara 2019; Cotter 2021) since they felt the algorithms' oppression of their online presence. More seriously, they thought that platform algorithms are a personalized but potentially restrictive system (Devito 2022) because users recognized the algorithms' attempt to provide them with a few similar content categories recurrently, probably based on their previous engagement, instead of the totality of available contents. As a result of these common imaginaries, users on the three social media platforms similarly experienced negative emotions such as confusion and uncertainty about how algorithms work, frustration and annoyance with content visibility and perceived manipulation, anxiety and powerlessness from lack of transparency and control, and privacy concerns regarding data collection and usage.

The emergence of these common imaginaries has prompted users across platforms to adopt various strategies to navigate their algorithmic experiences. They try to adjust settings, curate content strategically, and even participate in "engagement pods" to influence algorithmic visibility (Cotter 2019; Arriagada & Ibáñez 2020, O'Meara 2019, 6). Some users also made attempts to confront algorithmic control and privacy issues via online discussions and by adjusting their interactions with the platforms (Bucher 2017; Swart 2021). Through these user behaviors, folk theories about how algorithms work were developed and discussed not only within the platform where user imaginaries come to life but also across multiple platforms where these stories can be further nourished by the digital communities (Bishop 2019; Schellewald 2022). These commonalities across the three platforms underscore the need for a more user-centric approach to algorithmic design that prioritizes transparency, control, and privacy protection, ultimately leading to a more positive and empowering social media experience. This shall be further discussed in the next section.

DISCUSSION

The literature reviewed reveals a consistent pattern of negative emotional responses among Facebook, Instagram, and TikTok users when encountering and attempting to understand platform algorithms. This aligns with previous research documenting the contagious nature of negative feelings on social media and the potential for social media browsing to induce negative moods (Fardouly & Vartanian 2015; Yeo et al. 2020; Chawla & Mehrotra 2021; Steinert & Dennis 2022). The opacity of algorithmic mechanisms can create a double-negative experience of feeling, where users grapple not only with the emotional impact of content but also with anxieties stemming from the hidden processes behind its curation and delivery. The intensity and specific types of emotions, however, can vary among individuals, influenced by personal factors and experiences (Schellewald 2022; Valkenburg 2022). For instance, content creators, whose livelihoods depend heavily on algorithmic visibility may experience heightened anxiety and frustration compared to casual users.

This aligns with the uses and gratifications theory, which posits that users' emotional responses and behaviors are driven by their individual needs and goals within the platform's context.

The commonalities in user strategies across platforms, despite variations in specific algorithms, highlight the interplay between algorithmic imaginaries and algorithmic literacy (Shin, Rasul, & Fotiadis 2022). The adaptation of user behaviors in response to negative emotions can be seen as an attempt to regain a sense of control and agency within a technologically determined environment. The opaque nature of algorithms can foster a sense of powerlessness, as users perceive their experiences as being shaped by forces beyond their comprehension, aligning with the notion of technological determinism (McLuhan 1964). Users' efforts to adjust settings, curate content strategically, or participate in engagement pods can be interpreted as attempts to fulfill their needs and desires within the constraints of the algorithmic system, reflecting the principles of uses and gratifications theory.

The dynamic nature of platform algorithms further complicates the issue of algorithmic literacy. Even as users strive to become more informed, platforms continuously update and refine their algorithms, often without transparent communication. This constant evolution can lead to frustration and a perceived loss of control, reinforcing the power imbalance between platform designers and users, a key concern within critical theory and the political economy of communication (Mosco 2009). The black box nature of algorithms can perpetuate this power asymmetry, potentially leading to algorithmic bias and the marginalization of certain communities (Noble 2019).

Despite these challenges, users demonstrate agency by actively engaging with algorithms through various strategies. Sharing folk theories, adjusting interactions, and participating in online discussions can be seen as forms of participation and resistance within the platform's ecosystem, echoing the principles of participatory culture and produsage (Jenkins 2007; Bruns 2008). These actions highlight users' efforts to reclaim agency and shape their online experiences, even within the constraints of algorithmic systems.

The collective efforts to promote algorithmic literacy among the public underscore the importance of critical understanding and skills to navigate the digital landscape, aligning with media literacy and digital literacy theories (Livingstone 2004). However, as Schulz (2023) argues, algorithmic literacy for users alone may not be sufficient as there exists a reciprocal learning process between the algorithms and the users. In this process, while the designers can easily develop, test, and modify their algorithms from the data inputs from users' interactions on the platforms, the users' theorization of the algorithmic processes are never confirmed by any of the social platforms. Therefore, true empowerment requires not only user education but also greater transparency and control over the algorithms that shape their experiences. This calls for a shift in the power dynamics between platforms and users, advocating for more open and participatory algorithmic design processes. In the likelihood that the influence of an algorithm might not soon be made explicitly visible to users, they will inevitably continue adapting their behaviors to correspond with their algorithmic imaginaries, to accomplish their goals for using the system.

CONCLUSION

The study of algorithmic imaginaries on Facebook, Instagram, and TikTok reveals a shared perception among users of these systems as being opaque and unpredictable, manipulative and controlling, and personalized but potentially restrictive. Such algorithmic imaginaries often lead to negative emotional responses and prompts users to adopt various strategies in an attempt to reclaim agency over their digital interactions. The emphasis on negative feelings, while crucial, leaves a notable gap in understanding the potential positive effects of these imaginaries. As Bucher (2018) notes, algorithms can evoke a range of emotions, and neglecting the positive aspects limits our comprehension of their full impact. Positive emotions like joy, excitement, and contentment may play a pivotal role in user engagement and well-being on social media platforms. Research into how algorithms foster these positive emotions can offer valuable insights for platform developers and researchers alike. For instance, Kearns and Roth (2021) accentuate that understanding the impact of algorithmic design on user emotions could inform the development of more user-centric and enjoyable experiences. This points to future research directions that should place more emphasis on users' positive emotional responses, consider a wider range of users, and examine the intersectionality of user identities—including race, gender, and socioeconomic status—to understand how these aspects influence users' experiences and interpretations of algorithms.

Furthermore, understanding positive algorithmic imaginaries has broader social implications such as elucidating discussions on the ethical and responsible use of algorithms in shaping online experiences, and leading to innovative applications in fields like mental health and education (Head, Fister, & MacMillan 2020). Therefore, future research could explore the following questions: 1. How do positive emotional responses to algorithmic imaginaries influence user engagement and well-being on social media platforms? 2. To what extent do algorithmic literacy interventions empower users to navigate and manage their algorithmic experiences effectively? 3. How do the intersections of race, gender, and class shape users' algorithmic imaginaries and experiences on social media?

Besides the prevalent trend of negative emotions experienced by users, this study also identifies a distinct focus amongst the reviewed literature on different user types specific to each target platform: ordinary users on Facebook, content creators on Instagram, and activists on TikTok. This discrepancy may be attributed to platform-specific features and research biases. However, before drawing definitive conclusions, it is crucial to conduct further research that examines a wider range of users across all platforms in order to provide a more comprehensive understanding of how algorithmic imaginaries are shaped by diverse user experiences and motivations, rather than solely by platform characteristics or researcher interests.

Overall, the findings underscore the need for a more nuanced approach to fostering algorithmic literacy, one that extends beyond user education to include the designers and other parties involved in the backend. This means not only educating users but also advocating for greater transparency and user control in the design and operation of these algorithms. It is apparent that for users to truly navigate their online environments effectively, a collaborative effort is needed to demystify the algorithms at play.

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