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Algorithmic enclaves

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Introduction

The advent of social media platforms has revolutionised how individuals connect, communicate, and form communities in the online realm. How do people come together and form political communities on social media platforms? What is the consequence of social media platforms for how we connect and collectivise with each other and form communities online? The influence of social media algorithms on connectivity, collectivity, and community formation has sparked extensive debate and analysis among scholars, researchers, and the public. Much scholarly work in this area focuses on how these algorithms affect user interactions and political discourse, identifying several issues such as including polarisation, the spread of misinformation and extremist voices, and the proliferation of hate speech. While these works acknowledge the role of individuals, their primary focus remains on the impact of technology. Central to this line of argument is the filter bubbles thesis, suggesting that personalised content algorithms create echo chambers that reinforce existing beliefs. However, some scholars argue this effect is overstated, highlighting the role of user information-seeking behaviour. The concept of algorithmic enclaves intervenes and contributes to these debates with an alternative framework highlighting the complex relationship between people and technology (Lim, 2020). Rather than solely examining the impact of algorithms, it emphasises the relationship between social media algorithms and human users, focusing on human agency. In summary, the concept of algorithmic enclaves illuminates the nuanced interaction between algorithms, human agency, and online community formation, providing a crucial perspective to enhance our understanding of the implications of social media algorithms on connectivity, collectivity, and polarisation effects in the dynamic landscape of digital interactions and community building.

Definition and origins

Coined by Merlyna Lim (2017), the term *algorithmic enclaves* refers to a "discursive arena where individuals, afforded by their constant interactions with algorithms, interact with each other and collectivise based on a perceived shared identity online for defending their beliefs and protecting their resources from both real and perceived threats, usually from a common enemy" (Lim, 2020, 194).

Etymologically, *algorithmic enclaves* is an open compound word rooted in two existing terms: *algorithmic* and *enclaves*. The term *algorithmic* refers to the dynamic nature of algorithms, which are sets of rules and instructions used to perform specific tasks and automate decision-making processes. In the context of *algorithmic enclaves*, the term *algorithmic* pertains to algorithms used in computing and digital technologies, notably social media algorithms. Hence, algorithms are used to optimise and automate various processes, such as content moderation, search ranking, and social media recommendations.

On the other hand, the term *enclaves* originates in urban studies and refers to spaces that are physically or socially isolated from the surrounding areas. Enclaves are typically concentrated areas within a city where people with shared cultural, ethnic, religious, or socioeconomic backgrounds voluntarily choose to reside, differentiating them from the involuntarily formed ones like ghettoes. Scholars of media studies utilise the term digital enclave to mark digital spaces—websites, digital networks, and social media platforms—purposely formed as self-segregated spaces used by racially and ideologically distinct individuals (Campbell & Golan, 2011; Graham, 2014; Rigato, 2023).

Human agency in algorithmic enclaves

Studies on social media and politics often privilege technology's roles, impacts, and effects, leading to a technological determinism perspective where technology is perceived as a more powerful entity than individuals and society (Lim, 2022a). The most extreme version of technological determinism sees platforms like social media as the dominant force and the primary actors responsible for shaping social relationships and instigating social change. While more moderate perspectives do not attribute social media as the sole cause,

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they still construct their frameworks based on the active roles of technology in society, rendering human agency as subordinate. By prioritising technological features and constructs over the agency of human users, these perspectives oversimplify the complex human interactions associated with media usage (Lim, 2022a). This approach fails to fully grasp the nuanced interplay between technology and human behaviour, overlooking the intricate ways in which individuals and communities actively shape and influence their own online experiences and interactions and media utilisation in their lives.

Algorithmic enclaves emerged from the need to acknowledge distributed agency, where humans and technologies have agency and create effects. Expanding on the concept of digital enclaves utilised in media studies, algorithmic enclaves recognise the co-agency and co-shaping relationship between algorithms and human users, challenging prevailing technocentrism and technodeterminism in discussions surrounding social media algorithms (Lim, 2020, 2022a). By examining the relationship between algorithms and human users, we can comprehend how users actively and voluntarily participate in the formation of algorithmic enclaves and how their agency interacts with algorithmic processes. This perspective broadens our understanding of the complex dynamics at play in the realm of social media algorithms.

Social media algorithms and connectivity, collectivity, and community formation

Social networking platforms have existed for years without automated content-filtering algorithms. However, in the past decade, social media has become increasingly algorithmic, driven by the rapid growth of users and the goal of revenue generation through targeted advertising. Considering various factors, social media platforms frequently modify their algorithms to suit their specific requirements. The fundamental principles underlying social media algorithms involve machine learning, enabling them to learn from users' past actions; and sorting typology, which arranges elements in a specific order, such as numerically or alphabetically. Sorting algorithms became a key component, prioritising content with superlative values and pushing it to the top of users' feeds. This sorting principle, combined with affective interactions—through likes, loves, comments, and shares—led to the dominance of simplified and sensationalised content, which is more likely to garner high levels of engagement (Lim, 2020). In other words, social media algorithms exhibit biases favouring superlative content that tends to provoke extreme reactions. Consequently, this phenomenon elucidates the prevalence of simplified and one-sided content, including conspiratorial messages (Grandinetti & Bruinsma, 2022; Lim, 2023), as well as contentious and extreme posts across social media platforms. This encompasses content from far-right, ultranationalist, extreme fundamentalist, and other radical groups (Lim, 2022b, 2023; Rigato, 2023).

Algorithmic recommendation and ranking systems hold a pivotal position in structuring online communities. However, they do not dictate users' choices (Lim, 2020; Grandinetti & Bruinsma, 2022). As is evident from observations, social media algorithms do not inevitably generate filter bubbles that confine everyone to echo chambers. However, this does not imply the absence of echo chambers within social media. Instead, it suggests that social media algorithms do not foster an environment where all users are uniformly inclined toward forming echo chambers. Put differently, the impact of social media algorithms on individuals is not uniform but rather diverse. The likelihood of echo chambers forming on social media varies depending on the nature of discussions and their sociopolitical contexts. In other words, the emergence of segregated and polarised communities on social media that typically reflect affective polarisation processes cannot be solely attributed to algorithms. Human users and the social contexts surrounding them also play significant roles in this phenomenon.

Algorithmic enclaves represent an analytical concept that recognises both the active shaping of social media algorithms and the active role of users. Unlike a ghetto, which is formed as the result of the involuntary segregation of subordinate individuals, the formation of an enclave is voluntary in nature; members of a certain enclave have agency and actively contribute to shaping their own enclave.

The concept of algorithmic enclaves, like connective action (Bennett & Segerberg, 2012), acknowledges the personalised nature

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of politics and collective actions on social media. It views social media algorithms as techno-social and cultural-ideological agents that shape and are influenced by human users. Beyond that, it emphasises the significance of collective identity alongside connectivity. While connective actions may precede online collective actions, connectivity often stems from a deeply ingrained collective identity constructed within society (Lim, 2020). In essence, an algorithmic enclave occupies a position between connective action and filter bubbles. While filter bubbles emphasise the instrumental role of algorithms and assume a relatively subordinate role for human users, the concept of algorithmic enclaves suggests that algorithms do not pre-program or dictate the formation of enclaves. Human users and algorithms mutually influence each other in sorting, classifying, and prioritising people, information, and political preferences, collectively shaping the formation of algorithmic enclaves and the discourse within them (Lim, 2017; Grandinetti & Bruinsma, 2022).

In politically polarising and socially divisive issues, social media algorithms likely lead to the creation of algorithmic enclaves. These enclaves emerge when discussions follow a binary discourse, where the main issue and related topics are expressed solely as X or anti-X, attracting supporters aligned with one of these positions (Lim, 2017; Leiliyanti & Irawaty, 2020; Ozduzen, 2020; Rigato, 2023). Such binary discourse often arises from a political system that offers limited choices, leading to two dominant coalitions or parties and their opposition. As previously discussed, social media algorithms and the prevalence of affective interactions favour content that evokes excitement and strong emotions, often stemming from oversimplified, sensationalised narratives. Consequently, social media becomes a fertile ground for the thriving binary political discourse, revolving around opposing views like "us versus them," "our opinion versus their opinion," and "pro versus anti" (Ozduzen, 2020; Lim, 2020, 2022b; Rigato, 2023).

Algorithmic enclaves are "imagined communities" (Anderson, 1983) that emerge through a "techno-social" construction (Lim, 2017: 422; Frömming & Wood, 2021). The partitioned nature of algorithmic enclaves is not static but dynamic, with clusters evolving in size and membership over time (Lim, 2020). Members engage in small-scale online deliberation within these enclaves, reinforcing shared sentiments, beliefs, and opinions to foster consensus. The amplification of information is driven not solely by the content itself but also by the sharing and discussion within the enclave, either positively or negatively, aligning with existing viewpoints. Algorithmic enclaves embody exclusive affective networks, where members generate and circulate positive emotions among themselves while projecting antagonistic or negative sentiments towards "the Others" (Lim, 2020; Ozduzen, 2020; Rigato, 2023). This process establishes and validates boundaries between their own imagined communities and those outside.

Case studies: algorithmic enclaves in practice

Several case studies exemplify the operation of algorithmic enclaves in diverse contexts. Leiliyanti and Irawaty's (2020) study of Twitter usage during the 2014 Indonesian presidential elections reveals how algorithmic enclaves emerged as supporters of opposing political camps, Joko Widodo and his rival Prabowo Subianto, interacted and coalesced online based on shared religious and political sentiments. In Indonesia, the prevalence of binary populist frameworks and algorithmic enclaves marked the rise of algorithmic politics, defined as "politics that centres its modus operandi around the algorithmic manoeuvring of issues with a core purpose of dominating media spheres to steer public opinion [that] arises as political actors see the possibility of manipulating algorithms to influence citizens' political choices, especially during elections" (Lim, 2023, 39). Similarly, practices of algorithmic politics are also implemented elsewhere in Southeast Asia. In the Philippines, "President Rodrigo Duterte adopted algorithmic politics by allegedly employing a cyber-army to storm social-media platforms to attack critics and post pro-Duterte sentiments" (Lim, 2023, 39). In Thailand, algorithmic politics continues to amplify on-the-ground polarisation as social media embed in "a prolonged political rivalry between pro-establishment, pro-monarchy Yellow Shirts (defenders of *lèse majesté*), and the Red Shirts, anti-establishment, pro-democracy, and against political and economic inequalities" (Lim, 2023, 40).

Meanwhile, researching the relationship between YouTube videos and discourse around Syrians in Turkey, Ozduzen (2020) reveals the emergence of algorithmic enclaves in the comment sections. The comments consolidate existing sentiments against Arabs, reinforcing Turkish nationalism while excluding Syrians and treating them as "the Others." In Kenya, the research of Gikandi et al. (2022) on the relationship between social media and electoral politics conforms to the formation of algorithmic enclaves that exacerbate the emergence of electoral violence.

The formation of algorithmic enclaves is notable in the social media usage among right-wing extremists and far-right individuals. In their analysis of the shared meme on social media related to the Kyle Rittenhouse shooting of protestors in Wisconsin, Stall, Foran, and Prasad (2022) found such enclaves formed along the meme networks of the armed American far-right movement. Similarly, Rigato (2023) reveals the emergence of such enclaves in his detailed empirical analysis of actual conversation among Canadian far-right extremists as they responded to events and issues of the day on Facebook. Employing the term *malicious enclaves*, "the façade of politically oriented groups that establish veils of legitimacy to facilitate hateful and violence-endorsing views online" (Rigato, 2023, 79), his research shows how extreme affect in the form of hate is central to the formation of such enclaves.

Concluding remark

The concept of algorithmic enclaves sheds light on the intricate interplay between algorithms, human agency, and the formation of online communities. By recognising the co-agency and co-shaping relationship between algorithms and human users, we can deepen our understanding of the implication of social media algorithms on connectivity, collectivity, and polarisation effects. Algorithmic enclaves represent a crucial area of study as we navigate the ever-evolving landscape of social media and strive to comprehend the complexities of online interactions and community building in the digital age.

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