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Algorithmic Hegemony: AI-Mediated Communication Systems and the Cognitive Architecture of Digital Governance

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This article examines the transformative role of AI-mediated communication systems (AIMCS) in shaping public discourse and political outcomes, with a specific focus on the 2025 German electoral campaign. By integrating insights from sociocybernetics, psychological anthropology, and neurobiology, this study offers a multidisciplinary analysis of how AIMCS have evolved from passive conduits of information into active agents of governance. The article investigates how advanced generative models and engagement-driven algorithms restructure political communication by embedding hegemonic power structures into digital ecosystems—thereby producing new social inequalities in terms of visibility, access, and symbolic legitimacy. Through empirical analysis—including the case of Elon Musk's platform "X" and its algorithmic amplification of far-right narratives—the study demonstrates how elite interference strategically manipulates AIMCS to reinforce binary, emotionally charged narratives, often deploying dog-whistling as a tactic to maintain surface-level ambiguity while transmitting ideologically coded messages. The findings reveal that AIMCS capitalize on fundamental cognitive predispositions such as heuristic processing and negativity bias to generate recursive feedback loops, which not only stabilize existing ideological biases but also reshape the conditions under which political agency is exercised. This study calls for

a critical reassessment of digital governance and the structural design of AIMCS, advocating for mechanisms that promote narrative diversity, epistemic complexity, and reflective dialogue to mitigate the systemic risks posed by algorithmic hegemony.

Key Words: *Algorithmic Hegemony; AI-Mediated Communication Systems (AIMCS); Predictive Governance; New Social Inequalities; Electoral Manipulation; Cognitive Entrenchment*

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1. Introduction

Recent controversies surrounding the social media platform "X"—notably its amplification of far-right narratives during Germany's early 2025 electoral campaign—indicate the emergent capacity of AI-mediated communication systems (AIMCS) to intervene directly in democratic processes. Once envisioned as neutral conduits for information exchange, these digital platforms have evolved into de facto sociopolitical agents, wielding algorithmic power to prioritize, suppress, and reshape content according to engagement-driven imperatives. By amplifying emotional responses, engineering ideological alignment, and segmenting audiences based on behavioral prediction, AIMCS expose fundamental vulnerabilities within digital governance and cast doubt on the resilience of democratic institutions. This paper explores how AIMCS reconfigure the epistemic foundations of public discourse. It argues that these systems stabilize ideological attractor states through recursive engagement optimization, act as transversal infrastructures aligned with dominant political and economic actors, and exploit neurocognitive predispositions—such as heuristic bias, affective priming, and binary classification—to embed emotionally charged narratives into the architecture of digital communication. By examining these processes in the context of Germany's 2025 election, the article argues that AIMCS have transcended their role as mere vehicles of political communication to become crucial regulatory mechanisms in the algorithmic reconfiguration of democratic practice. While the case of Germany's 2025 election provides a stark illustration of potential manipulation, analogous patterns of AIMCS-driven political

interference are discernible in other global contexts. That said, systematic empirical evidence remains limited, owing to the relative novelty of the phenomenon and the evolving nature of the underlying technologies. Platforms such as "X" do not merely reflect social divisions; they reshape them by strategically exploiting engagement-driven content optimization and by embedding themselves within existing media and political structures. By harnessing algorithmic governance and data-driven personalization, AIMCS can effectively co-create social and political realities, stabilizing new forms of authority and challenging traditional checks and balances. At the core of this transformation lies a structural contradiction: although AIMCS ostensibly expand access to information and streamline connectivity, they simultaneously narrow the epistemic terrain upon which democratic deliberation depends. The German case illustrates how far-right narratives can gain traction when dissenting perspectives are deprioritized, revealing a governance vacuum that conventional regulatory bodies—be they electoral commissions, data protection agencies, or media councils—struggle to fill. By exploiting binary-coded thinking and emotional triggers, "X" not only fosters ideological entrenchment but also reshapes interpretive frameworks, inducing systemic shifts that cannot be easily contained by outdated regulatory frameworks.

Against this backdrop, the paper addresses two interrelated research questions:

1. *How do AI-mediated communication systems (AIMCS)—as exemplified by the platform "X" during the 2025 German federal election—systematically amplify emotionally charged and polarizing narratives, and what roles do algorithmic infrastructures, elite interventions, and engagement-driven architectures play in shaping political visibility and legitimacy?*
2. *Through which sociocybernetic and cognitive-anthropological mechanisms do AIMCS exploit neurocognitive predispositions—such as heuristic reasoning, affective salience, and binary-coded thinking—to generate self-reinforcing feedback loops, and how do these loops recalibrate the conditions of collective meaning-making, discourse, and political agency?*

The central hypothesis of this paper posits that AIMCS constitute a hybrid socio-technical formation embedded within the evolving digital architecture of technologically advanced societies. Rather than forming a fully differentiated function system in the strict Luhmannian

sense, AIMCS operate as a transversal subsystem—functioning across and through existing institutional domains such as media, politics, and the economy. Their operative logic is not governed by a singular binary code but emerges from the recursive interplay of algorithmic optimization, emotional salience, and anticipatory control. Through self-reinforcing feedback loops, AIMCS selectively amplify certain forms of communication—particularly those marked by affective intensity and ideological simplicity—thereby prestructuring what is rendered visible, legitimate, and actionable in the public sphere. By assigning users narrative roles—such as victims, heroes, or adversaries—AIMCS do not merely mirror existing social cleavages but actively co-produce and stabilize them, embedding polarizing framings into the epistemic infrastructure of public discourse. This dynamic extends beyond electoral manipulation, influencing the symbolic order of broader sociopolitical arenas including hegemonic governance, geopolitical conflict, and climate communication, thereby transforming the conditions under which political meaning, legitimacy, and agency are produced. By embedding these imperatives into the architecture of public communication, AIMCS extend their influence well beyond electoral contexts, modulating ideological visibility across broader domains of governance, geopolitical contestation, and environmental discourse. This signals a paradigmatic shift in the conditions under which democratic participation and public meaning-making unfold—one in which algorithmic infrastructures increasingly preconfigure the terrain of political thought before deliberation even begins. This inquiry integrates the concepts of algorithmic hegemony and cognitive-anthropological insight within a sociocybernetic framework that emphasizes non-linearity, self-referential feedback loops, and the emergent dynamics of digital communication systems. It investigates how recursive interactions between AI-mediated communication systems (AIMCS), human cognition, and institutional power structures not only reinforce existing hierarchies but also recalibrate the parameters of public discourse—constituting a new mode of governance situated at the nexus of technological infrastructure, political strategy, and cognitive vulnerability.

To ground the analysis, the paper begins in Section 2 with an empirical investigation of the 2025 German federal election as a paradigmatic case of AIMCS-driven electoral

manipulation. Focusing on the platform "X," the section illustrates how algorithmic amplification, elite intervention, and predictive targeting converged to reinforce nationalist narratives, manipulate voter sentiment, and restructure the political landscape. Drawing on recent empirical studies, the analysis shows how AIMCS curate emotionally charged, fear-based, and conspiratorial content with high engagement potential while systematically suppressing dissenting perspectives. In doing so, they do not simply mediate political communication but actively preconfigure electoral outcomes, reshaping discourse in ways that transcend traditional media influence and erode deliberative democratic processes. Section 3 introduces the theoretical framework by tracing the transformation of news consumption in the digital age. AIMCS are conceptualized as a self-referential, semi-autonomous subsystem that integrates hegemonic, economic, and technological imperatives. From a sociocybernetic perspective, they do not merely facilitate communication but constitute infrastructural agents that generate, stabilize, and constrain the epistemic conditions of visibility, legitimacy, and political intelligibility. Section 4 extends this framework by incorporating cognitive-anthropological and neurobiological insights. It explores how AIMCS align with innate predispositions toward binary-coded thinking, heuristic processing, and emotional salience to optimize engagement and reinforce ideological polarization. Through recursive content curation that exploits these cognitive structures, AIMCS shape not only what is seen and believed but also how political agency is cognitively and affectively exercised. The article ultimately synthesizes insights from systems theory, neurobiology, and political sociology to argue that AIMCS—despite their framing as neutral or democratizing technologies—function as instruments of algorithmic hegemony. They do not merely transmit information but predefine the structural parameters through which consensus, legitimacy, and collective decision-making are generated—fostering new forms of social inequality within algorithmically structured public spheres. This anticipatory, algorithmically modulated mode of governance raises urgent questions about the future of democratic resilience in the age of predictive control.

2. Algorithmic Hegemony and Electoral Manipulation in the 2025 German Election

The 2025 German election serves as a compelling case study of algorithmic hegemony, illustrating how AI-mediated communication systems (AIMCS) have evolved from passive conduits of information into active agents of political reality construction. Rather than manipulating electoral outcomes through direct interference, AIMCS precondition the political landscape by shaping the visibility and legitimacy of narratives long before votes are cast. This transformation operates through a triad of mechanisms: algorithmic automation, architectural design, and anticipatory modeling. Empirical evidence demonstrates that Elon Musk's platform "X" played a disproportionate role in shaping public discourse during the 2025 campaign. Despite its comparatively small German user base, "X" significantly influenced political perception by systematically amplifying far-right narratives while marginalizing centrist and left-wing content (Lefebvre 2025; Tabia et al. 2025). A defining moment occurred when Musk engaged in a live discussion with the leader of the far-right AfD party, during which he endorsed revisionist positions including the erasure of Germany's historical guilt (ZDF 2025). This statement, algorithmically prioritized on the platform, not only dominated online discourse but also penetrated legacy media channels, shifting the boundaries of mainstream debate. Subsequent algorithmic amplification of misinformation, such as the false claim that "Hitler was a communist" (tagesschau 2025; BBC 2025), further embedded revisionist content into public consciousness. Studies revealed that posts from AfD politicians constituted 37.9% of the platform's default "For You" feed, despite comprising only 15.2% of the political tweets during the same period (Tabia et al. 2025). In contrast, posts from major parties like the Social Democratic Party (SPD), Christian Democratic Union (CDU), and the Greens appeared less frequently than their actual share of tweets (Netzpolitik 2025; Tabia et al. 2025). Empirical evidence suggests that this imbalance may be influenced by the platform's algorithm prioritizing posts with higher engagement metrics, such as likes and retweets, which AfD content tended to receive more of during the study period. Additionally, the researchers noted that factors beyond user engagement, potentially related to party affiliation, contributed to the overrepresentation of certain political content in users' feeds (Tabia et al. 2025). This phenomenon serves as a central focal point in understanding

how algorithmic hegemony, cognitive dynamics, and political practice intersect in Germany, offering a concrete case study of AIMCS-driven ideological reinforcement. This algorithmic skew was further reinforced by coordinated bot activity. (Lefebvre 2025; Tabia et al. 2025). This orchestrated activity significantly amplified the AfD's digital presence, manipulating public perception and discourse. Further compounding the issue, Russian-linked disinformation networks actively disseminated fabricated warnings of impending terror attacks to sow fear, decrease voter turnout, and destabilize the electoral process (Lefebvre 2025). These phenomena exemplify how AIMCS function as ideological infrastructures that selectively amplify reactionary content. The architecture of platforms such as “X”—optimized for emotional salience and engagement—systematically privileges polarizing narratives. Empirical studies confirm that far-right content tends to outperform moderate material within such environments due to its heightened affective intensity, simplified binary framings, and higher shareability. Recent algorithmic audits further demonstrate that, in the run-up to the 2025 German federal election, 64% of political content on X and 78% on TikTok promoted the far-right AfD, despite its comparatively lower share of overall political output (Netzpolitik 2025). This disproportional amplification illustrates how engagement-driven algorithms not only reflect but actively shape political visibility. The resulting feedback loops between user behavior and platform logic normalize extremist discourse over time, subtly reconfiguring the boundaries of mainstream debate.

AIMCS do not merely mediate discourse but recursively shape it through engagement loops. Their predictive and adaptive capacities allow them to function as anticipatory governance systems, restructuring political visibility and actionability. During the 2025 election, this dynamic was not incidental but instrumental: algorithmically curated fear-based narratives on migration and identity were adaptively refined through user interaction, systematically predisposing undecided voters toward nationalist sentiment. The result was both measurable and consequential. The AfD, widely regarded as a neo-fascist party, emerged as the second strongest political force, securing 20.8% of the national vote. This outcome not only defied historical precedent but also illuminated the emergent role of AIMCS in the normalization of extremist ideologies. Rather than being passive reflectors of societal bias, AIMCS actively

reconstruct ideological boundaries, embedding them into the symbolic architecture of public discourse through emotionally resonant, engagement-maximizing content. The 2025 German election exemplifies algorithmic hegemony, enacted not through overt censorship or propaganda, but through the subtle, recursive manipulation of narrative visibility and salience. The entanglement of AIMCS with elite actors and disinformation networks reveals their dual function as both technological infrastructure and political agent. This convergence not only amplifies their systemic influence but also destabilizes foundational principles of democratic accountability and legitimacy. The following sections introduce a sociocybernetic framework—augmented by cognitive-anthropological and neurobiological perspectives—and apply it to the empirical case of the 2025 German federal election. Through this interdisciplinary lens, the paper examines how AIMCS reshape public discourse via recursive feedback loops, cognitive modulation, and anticipatory control, ultimately transforming the structural conditions of democratic governance.

3. Sociocybernetics, AI-Mediated Communication Systems (AIMCS) and Hegemony

This paper adopts a sociocybernetic framework, grounded in second-order systems theory and the study of social complexity, to interrogate these dynamics. Sociocybernetics, as an extension of classical systems theory into the domain of social complexity, examines how self-organizing and recursive systems maintain coherence and adaptability through dynamic feedback loops (La Porte 2015; Carmichael 2019; Donnelly 2023). Central to this perspective is the concept of autopoiesis, which describes systems that reproduce their own elements and structures through internal operations, rather than relying on external inputs. In sociocybernetic terms, autopoietic social systems generate meaning and maintain order by recursively selecting communications that align with their own systemic logic. This recursive selection enables both operational closure—the internal consistency of system operations—and structural coupling with other systems through shared interfaces. Within this framework, *meaning* operates as a selective and orienting mechanism: it filters the overwhelming complexity of the environment into manageable horizons of interpretation and action. As such, meaning is always a process of complexity reduction. Communication, in turn, is the central medium through which meaning is produced, stabilized, and transmitted (Willke

1987, 66). Through the exchange of symbols, language, and cultural codes, individuals co-construct and circulate meanings, which recursively shape collective realities and the evolving architecture of social order.

Traditional news media have long served as gatekeepers of information, structuring public discourse by reducing informational complexity (Luhmann 2017). However, AIMCS—driven by advanced generative models—have not merely assumed this role but fundamentally reshaped it. Unlike conventional platforms that primarily curate content, AIMCS actively generate narratives and orchestrate emotional and ideological responses by dynamically adapting to user behavior. From a sociocybernetic perspective, AIMCS are not passive intermediaries but semi-autonomous agents embedded within emergent governance architectures (Behnam Shad 2025). Key concepts such as recursive feedback, non-linear causality, emergence, structural coupling, and anticipatory governance function not only as analytical tools but also as constitutive dynamics of how AI-mediated communication systems reinforce polarization, encode ideologies, and actively participate in the restructuring of political agency and the establishment of hegemonic social order (ibid.). These systems operate within the realm of advanced AI technologies, where algorithmically encoded imperatives—centered on engagement, predictability, and affective modulation—dynamically reshape the coupling between cognition, power, and communication. Through recursive feedback loops, AIMCS continuously recalibrate societal meaning production, contributing to the autopoietic stabilization of digital political ecologies in which legitimacy, visibility, and influence are no longer institutionally negotiated but algorithmically prefigured (Behnam Shad 2025). At the core of this transformation is the fusion of AIMCS with hegemonic principles and neoliberal market imperatives, whereby algorithmic infrastructures serve not only informational but also economic and political objectives. Rather than distributing content equitably, these systems target hyper-individualized audience segments with precision-tailored, emotionally charged material, optimized for engagement and profit maximization. The alignment of AIMCS with dominant economic and political interests—particularly US-based tech conglomerates—centralizes control over data storage, content curation, and narrative construction within a limited set of global actors.

Although recent research indicates that prioritizing accuracy over engagement could reduce misinformation (Bagchi et al. 2024), existing structural incentives make such shifts improbable. AIMCS systematically privilege emotionally resonant content—particularly material invoking fear, resentment, or outrage— creating self-reinforcing feedback loops that elevate polarizing and misleading narratives over nuanced, corrective perspectives (Hosseini and Staab 2023; Chen, Evans, and Zeng 2024). Rather than merely reflecting societal biases, AIMCS structurally embed ideological imperatives into digital architectures, shaping the parameters of public discourse. As a result, informational control shifts from democratic deliberation to algorithmic design—an inherently asymmetrical process determined by who commands extensive data infrastructures (Tomassi, Falegnami, and Romano 2024). This fusion of algorithmic functions with hegemonic power and data-driven control converts AIMCS into instruments of governance (Behnam Shad 2025). Rather than merely distributing political content, AIMCS preconfigure the epistemic conditions under which political reality is perceived, contested, and legitimized. By embedding hegemonic priorities within their operational logic, these systems dictate the visibility, salience, and legitimacy of competing narratives, thereby aligning public discourse with established economic and political hierarchies. Through this subtle yet powerful process, algorithmic infrastructures not only reproduce hegemonic structures but actively reinforce their dominance, embedding ideological control directly into the dynamics of information dissemination and reception.

Within a sociocybernetic framework, society is seen as a network of self-organizing communication systems governed by recursive feedback. AIMCS, with their autopoietic tendencies, continuously generate and reproduce communicative sequences—recommendations, rankings, narrative framings—based on internally derived parameters such as engagement metrics. In these cybernetic loops, user behavior simultaneously acts as input and reinforcement, enabling the continuous recalibration of the informational environment toward predictive control and systemic coherence. Rather than reflecting existing ideological divides, AIMCS actively stabilize them by amplifying content that aligns with emotionally charged, high-engagement patterns. This process creates closed epistemic circuits, diminishing ambiguity, marginalizing alternatives, and reducing informational

complexity to a binary schema—friend versus enemy, good versus evil. Furthermore, AIMCS preconfigure the epistemic conditions under which political meaning is produced and sustained. By filtering out complexity and nuance, they simplify and shift political agency away from democratic institutions toward algorithmic infrastructures. Their predictive targeting capabilities identify and preemptively influence specific ideological constituencies, as illustrated by the 2025 German election, where AIMCS primed voters susceptible to nationalist narratives by delivering emotionally charged content before any public debate began. Once a narrative gains traction, the system's recursive optimization ensures it becomes self-reinforcing through continuous engagement loops, bypassing journalistic mediation. In effect, AIMCS reconfigure public discourse by embedding hegemonic imperatives into the very architecture of digital communication. Their operational logic—shaped by engagement-driven optimization and economic imperatives—dictates which narratives are visible, how political legitimacy is constructed, and what constitutes acceptable public debate. By classifying users based on behavioral data, these systems reinforce and normalize exclusion via algorithmic risk profiling. As AIMCS evolve into a transversal subsystem of governance, they fundamentally redefine the conditions for political agency, legitimacy, and dissent. This process exemplifies the stabilizing logic of algorithmic hegemony in contemporary society, where political reality is no longer the product of democratic deliberation but increasingly prefigured by recursive, algorithmically mediated processes.

One of the most subtle yet consequential mechanisms through which AIMCS reinforce algorithmic hegemony is *dog whistling*—a sophisticated process of semantic codification that enables ideologically aligned actors to convey exclusionary messages via encoded signals. Viewed through a sociocybernetic lens, dog whistling functions as a recursive selection mechanism that operates across dual semantic layers: it preserves surface-level ambiguity for broader audiences while transmitting a latent, ethnically (primordially) coded message to a socially primed in-group. This dual-channel structure simultaneously fosters symbolic cohesion within ideologically convergent networks and preserves plausible deniability in wider public discourse. Functionally, dog whistling achieves multiple interrelated objectives.

It reproduces collective identity by embedding shared symbolic codes that reinforce the communicative closure of radicalized online milieus. Additionally, by sustaining semantic ambiguity in heterogeneous digital environments, it minimizes systemic friction—such as legal repercussions or deplatforming—thereby ensuring the viability of contentious content (Rogers 2020). Moreover, this mechanism facilitates a gradual semantic drift, allowing radical positions to subtly permeate mainstream discourse without being overtly labeled as extremist (Saul 2018). Within AIMCS, the effect of dog whistling is further amplified algorithmically; content that carries these coded messages is selectively boosted due to its high emotional salience and provocative ambiguity. Over time, the iterative amplification of such content embeds exclusionary framings deeply into the informational landscape, extending their reach even to audiences initially outside the core ideological network (BfV 2022). These codified signals frequently invoke populist schemas that intertwine glorification of a positively framed in-group (Hewstone, Rubin, and Willis 2002), antagonism toward perceived illegitimate elite actors, and horizontal hostility directed at marginalized out-groups (Jagers and Walgrave 2007). When repeatedly integrated into algorithmically curated content flows, these mechanisms reinforce binary, reductionist worldviews and contribute significantly to the polarization and oversimplification of political discourse. In this light, dog whistling transcends its role as a mere rhetorical device to emerge as a cybernetically stabilized communication strategy. It integrates processes of symbolic closure, systemic risk management, and semantic drift into the operational logic of digital infrastructures, exemplifying how AIMCS structure public meaning through recursive, affect-laden, and semantically stratified processes that privilege ideological coherence over discursive openness.

Beyond the coded semantics of dog whistling, AIMCS reinforce ideological entrenchment through a complex interplay of emotional priming, populist framing, and neurocognitive reinforcement. From a sociocybernetic standpoint, these dynamics reflect a system settling into low-energy attractor states, where immediate emotional responses and predictable patterns dominate over adaptive, complex interpretations (Tufekci 2015; Botte, Ryckebusch, and Rocha 2022; Wang et al. 2023; Gao, Liu, and Gao 2023; Van Dalen 2023). Over time, this

recursive oversimplification erodes the capacity for nuanced empathy and critical thought, confining users within polarized echo chambers that diminish cognitive flexibility and truncate deliberative discourse (Arce-García, Díaz-Campo, and Cambronero-Saiz 2023; Amendola et al. 2024; Macdonald, Russell, and Hua 2023). In the 2025 German election, narratives initially amplified on "X"—including historical revisionism and anti-immigrant fear appeals—were swiftly echoed by legacy media outlets, not merely due to editorial alignment, *but because of the virality and agenda-setting momentum produced by AIMCS-driven amplification*. This recursive (re)production of semantic codes—where algorithmically favored content becomes too visible to ignore—compels mainstream media to respond, thereby reinforcing and legitimizing narratives that originated in fringe or ideologically motivated contexts. What begins as an algorithmically curated trend on "X" is thus integrated into the broader public discourse, facilitating its normalization and further diluting the boundaries between provocation, misinformation, and legitimate debate. In sum, AIMCS—through the convergence of dog whistling, populist framing, and neurocognitive reinforcement—reshape public discourse by embedding polarization and emotional resonance into the very architecture of visibility. This recursive logic undermines the cognitive and affective prerequisites for democratic deliberation, entrenching ideological rigidity while marginalizing complexity and dissent.

4. Cognitive Foundations of the Facilitation of Simplistic Narratives

To address the second research question—how sociocybernetic dynamics enable AIMCS to integrate binary-coded narratives into public discourse—this section extends the theoretical framework by incorporating cognitive-anthropological and neurobiological insights. It focuses on how human cognition and emotion, as mutually reinforcing dimensions of experience, interface with the operational logic of AIMCS. Cognition and emotion are deeply rooted in evolutionary and neurobiological structures. While not strictly deterministic, these structures predispose individuals to process information through heuristic pathways, relying on pattern recognition, binary categorization, and negativity bias to navigate complex and uncertain environments. AIMCS strategically exploit these cognitive predispositions by algorithmically curating content that aligns with preexisting affective and interpretive

schemas. In doing so, they reinforce emotionally charged, simplified framings that appeal to intuitive, rapid-response modes of thinking, rather than encouraging reflective or deliberative engagement. Against this backdrop, the following analysis focuses on three interrelated principles of human cognition that are central to understanding how AIMCS interface with neurocognitive structures. First, the dual-process model—distinguishing between fast, intuitive (System 1) and slow, analytical (System 2) thinking—offers insight into how emotionally charged, low-effort narratives gain traction under cognitive strain. Second, the concept of the narrative brain sheds light to the human predisposition to process reality through coherent, emotionally resonant story structures that simplify complexity and assign moral roles. Third, the neurochemical basis of reward and punishment—particularly the role of dopamine in reinforcing affective responses and social conformity—explains how engagement-maximizing systems exploit these biological mechanisms to deepen ideological alignment and behavioral predictability.

The human brain, optimized primarily for cognitive efficiency rather than analytical precision, predominantly relies on rapid, intuitive System 1 processes that prioritize emotionally charged stimuli over reflective deliberation (Kahneman 2013; Kannengiesser and Gero 2019; Faghihi et al. 2015). These rapid, heuristic-based responses are reinforced by neurochemical mechanisms—such as dopamine-mediated reward pathways—that enhance immediate affect-laden reactions, favoring cognitive shortcuts over reflective analysis (Kahneman 2013, 24). In contrast, the slower, deliberative System 2, which underpins analytical reasoning, is engaged less frequently, particularly under conditions of cognitive overload or time constraints (De Houwer 2019; Alter et al. 2013). Within AIMCS, this neurological architecture is systematically leveraged through algorithmic optimization, which amplifies emotionally potent content to sustain user engagement.

Another crucial element for understanding AIMCS in the digital era is the concept of the *narrative brain* (Breithaupt 2023). Emerging from decades of neurobiological research, this approach demonstrates that human cognition is inherently organized around narrative frameworks characterized by emotional resonance, causal coherence, and pattern

recognition. Central to our analysis is the insight that humans are predisposed to interpret complex social realities through simplified narrative schemas—favoring clear causal sequences, identifiable roles (heroes, victims, villains), and emotionally charged events (Breithaupt 2023, 64). AIMCS strategically exploit these cognitive predispositions by algorithmically curating content that resonates with the brain's affinity for coherent and affectively compelling narratives, thereby systematically reinforcing simplified, polarized perspectives. In other words, while humans are inherently inclined to process information in binary, Manichaean terms, the methods of exploiting these predispositions have evolved significantly in the digital context, paralleling advances in the scientific understanding of cognitive and emotional mechanisms underpinning narrative engagement.

Finally, the *neurochemical reward and punishment system*—deeply embedded within human cognition and emotional regulation (Panksepp 1998, 42)—plays a central role in the effectiveness of AIMCS. At its core lies the dopaminergic system, which mediates learning, motivation, and reinforcement by encoding discrepancies between expected and actual outcomes (Watt and Panksepp 2016, 4). The *mesolimbic pathway*, often referred to as the brain's reward system, is indispensable for processing signals related to rewards (Numan 2015, 19; Achterberg and Vanderschuren 2023). This is particularly the case with regard to those derived from positive social interactions, such as successful cooperation or peer recognition (Massaccesi et al. 2024). The mesolimbic dopamine pathway is a principal component of this system, as it plays a pivotal role in regulating experiences of pleasure and motivation through the modulation of dopamine levels. In social contexts, dopamine release is closely tied to approval, recognition, and group belonging: behaviors that are positively sanctioned by one's reference group elicit dopaminergic surges, reinforcing conformity and emotional alignment with shared norms (Wei, Zhao, and Zheng 2013; Wu, Luo, and Feng 2016). This biological mechanism underpins what neuroscientists describe as socially modulated reward prediction. When individuals receive validation—such as likes, retweets, or agreement—the brain registers this as a form of social reward, increasing dopamine availability in structures like the nucleus accumbens and ventral striatum. Given that dopamine functions similarly to an intoxicating and addictive substance (Young, Gobrogge,

and Wang 2011), non-conforming behavior can be seen as a withdrawal of reward, thereby rendering the process of conditioning to social norms a profoundly significant phenomenon (Chow et al. 2024; Rincon-Cortes and Grace 2023; Cloutier et al. 2008). Conversely, exposure to dissonant or disapproved content may reduce dopaminergic activity, eliciting mild stress responses and incentivizing withdrawal or self-censorship.

This represents not merely content targeting but neurocognitive regulation, wherein affective synchronization is achieved through predictive, data-driven modulation of the brain's reward architecture. AIMCS function as self-reinforcing, quasi-autopoietic systems that leverage neurocognitive asymmetries to shape communication environments. They dynamically co-opt cognitive shortcuts—prioritizing emotionally resonant stimuli while systematically filtering out complexity, ambiguity, and nuance. AIMCS align their feedback loops with the neural predisposition toward rapid, emotionally charged System 1 processing, ensuring that content optimized for immediate affective engagement overrides reflective System 2 interactions. This fosters an environment in which emotional salience supersedes epistemic rigor. The recursive interplay between neurobiological biases and algorithmically curated content embeds polarization within digital communication frameworks. Rather than reflecting societal divisions, AIMCS reinforce them through refinement driven by predictive modeling, engagement metrics, and behavioral feedback. Consequently, political narratives gravitate toward simplistic binary frameworks—insider versus outsider or good versus evil—generating stable attractor states that reduce informational complexity at the expense of adaptability, reflexivity, and perspective mobility (see discussion of dog whistling in Section 3). Operating within a proto-differentiated digital field, these systems iteratively reshape the symbolic environment of political cognition, conditioning attention, emotional resonance, and meaning.

Seemingly spontaneous user interactions are, in fact, the orchestrated outcomes of a recursive affective governance system wherein engagement-driven algorithms and cognitive heuristics coalesce into politically potent feedback loops. Moreover, emotional priming—especially through the activation of fear and loss aversion—serves as a central mechanism

in AIMCS-mediated discourse. Evolutionary psychology demonstrates that humans are inherently more responsive to perceived threats than to neutral or positive stimuli (Heyes, Moore, and Tomasello 2023). This responsiveness, shaped by ancestral environments where vigilance conferred survival advantages, varies across individuals—sometimes manifesting in tribal affiliation, at other times in avoidance or withdrawal (MacGowan, Karasewich, and Kuhlmeier 2023), which today often takes the form of political disaffection or resignation. AIMCS exploit this predisposition by prioritizing content that elicits intense emotional reactions, sustaining user engagement. This phenomenon was evident during the 2025 German election, where nationalist, anti-immigrant, and conspiratorial content dominated digital platforms due to its high affective salience. Through this mechanism, cognition, emotion, and digital environments interlink via recursive feedback loops that mediate individual meaning-making and collective adaptation. Although such loops can foster identity formation and shared understanding, AIMCS disrupt this balance by privileging emotionally charged, binary-coded narratives that flatten complexity and undermine cognitive self-regulation and narrative adaptability. Over time, these algorithmically reinforced narratives crystallize into dominant cognitive scripts embedded in the symbolic fabric of public discourse. Far from constituting organic expressions of popular sentiment, these scripts are recursive outputs of engagement-optimized systems that structurally favor emotionally charged, binary framings. By exploiting neurocognitive predispositions such as heuristic processing, affective priming, and negativity bias, AIMCS systematically narrow the interpretive horizon, diminishing the capacity for self-reflection, perspective shifting, and transformative engagement. This epistemic constriction extends beyond individual cognition to reshape collective political processes. AIMCS not only filter information but actively construct bounded echo chambers where dissent and ambiguity are systematically deprioritized (Cinelli et al. 2021; Terren and Borge-Bravo 2021; Alatawi et al. 2021; Schiff 2024).

Within these silos, emotionally resonant narratives are refined through predictive feedback loops, progressively marginalizing complexity and stifling the dialogic tensions essential for adaptive public discourse. From a sociocybernetic standpoint, these dynamics suggest that

digital communication environments are stabilizing into low-energy attractor states—rigid yet affectively rewarding configurations that prioritize emotional immediacy over spontaneity and deliberative pluralism. Nonetheless, AIMCS remain in an evolving and formative phase. Their rapid diffusion has significantly outpaced empirical research into their long-term cognitive, emotional, and sociopolitical effects. While case studies—such as analyses of the 2025 German election—offer critical insights, comprehensive longitudinal research is required to grasp how these architectures, particularly when coupled with elite interests, recalibrate the production of social meaning, legitimacy, and governance. By systematically sidelining ambiguity and complexity, AIMCS diminish the adaptive capacities of democratic societies, reducing their resilience to systemic crises such as climate change, political fragmentation, and structural inequality. In technologically advanced contexts, these systems increasingly displace public reasoning with an operational logic that privileges engagement metrics and predictive control over complexity, reflexivity, and pluralism. This structural shift transfers agency from human actors to algorithmic infrastructures, which not only mirror but inscribe sociopolitical biases into the normative architectures of public discourse. The recursive entanglement between AIMCS and neurocognitive predispositions reinforces political preferences through emotionally charged, low-complexity content, gradually displacing deliberative agency with reactive, affect-driven participation. More broadly, the convergence of narrative engineering, neurochemical feedback, and advanced AI architectures forms a triadic system interlinking cognition, emotion, and behavior. These AI infrastructures act as active agents shaping emergent social dynamics, mutually entangled with narrative framing, user engagement, and dopamine-driven reinforcement cycles. This recursive loop stabilizes dominant ideologies and behavioral patterns, often at the expense of systemic diversity, cognitive reflexivity, and social adaptability.

Conclusion

This article has analyzed AI-mediated communication systems (AIMCS) as hybrid, semi-autonomous agents operating at the intersection of technological infrastructure and political power. Far from being neutral conduits of information, AIMCS act as recursive and autopoietic components within broader systems of hegemonic governance. Drawing on the

case of the 2025 German federal election, the study has demonstrated how these systems significantly shaped public discourse and electoral outcomes by algorithmically amplifying polarizing narratives and suppressing dissenting voices. In doing so, the analysis has addressed how AIMCS systematically amplify emotionally charged, polarizing narratives through engagement-driven architectures and elite interventions, and how their recursive entanglement with neurocognitive predispositions—such as heuristic reasoning and affective priming—recalibrates collective meaning-making, discourse structures, and political agency (see research questions outlined in the Introduction). The findings show that AIMCS no longer merely mediate public communication but actively restructure the symbolic architectures within which political legitimacy and dissent are constituted. As such, they challenge conventional assumptions about the neutrality of digital infrastructures and indicate the urgent need for regulatory frameworks capable of addressing the deep-seated algorithmic dynamics shaping contemporary democratic life. These dynamics not only distort deliberative processes but also generate new forms of social inequality by differentially distributing visibility, legitimacy, and political voice. In summary, the convergence of automation, platform architecture, and anticipatory conditioning shows that algorithmic hegemony no longer operates through overt coercion but through the subtle preconfiguration of political discourse. Rather than directly manipulating elections, AIMCS restructure the terrain of visibility, legitimacy, and affective resonance across the public sphere—long before voters reach the ballot box. Addressing the first research question, the 2025 German federal election illustrates how AIMCS systematically amplify polarizing narratives and intervene in political discourse. The disproportionate amplification of far-right narratives demonstrates how public debate can be algorithmically recalibrated to favor reactionary agendas. This shift is not merely a reflection of political sentiment but the product of structurally embedded cognitive and emotional engineering. AIMCS optimize for engagement by privileging emotionally charged, binary-coded content, thereby marginalizing complexity and disincentivizing deliberation. Elections, under these conditions, become less expressions of democratic volition than algorithmically shaped outcomes of recursive feedback loops. The AfD's electoral surge exemplifies a new modality of democratic distortion: an ostensibly democratic result produced through the iterative

reinforcement of ideologically aligned content. AIMCS do not function as neutral intermediaries but as autonomous agents that determine what is seen, heard, and rendered politically conceivable. Once a narrative gains algorithmic momentum, it becomes self-sustaining—bypassing editorial scrutiny and democratic oversight. The danger lies not only in latent ideological bias but in the systemic opacity of infrastructures that recast governance as a function of engagement metrics. By operating beyond institutional accountability, AIMCS reconfigure the epistemological foundations of public reason and electoral legitimacy. Their influence extends beyond the digital domain through spillover effects into legacy media, where editorial autonomy is increasingly subordinated to the viral logic of algorithmic amplification. This hybrid media ecology erodes the boundaries of journalistic independence, tethering public discourse to the dynamics of digital virality. Ultimately, AIMCS have transcended the role of communicative intermediaries to become anticipatory engines of epistemic governance.

Their operational logic redefines the conditions under which ideological contestation unfolds—not through deliberation but through predictive calibration. What once entailed editorial selection has evolved into a regime of algorithmic prefiguration, where the boundaries of political thought and democratic agency are structurally determined in advance. This shift is not incidental but embedded within the operational logic of AIMCS, which align their optimization functions with market imperatives and hegemonic power structures. Far from merely reflecting user preferences, these systems reinforce pre-existing ideological biases and affective dispositions through recursive feedback loops, transforming polarization from a side effect into a structural condition of sustained engagement. By privileging emotionally resonant content—particularly outrage, fear, and identity-based antagonism—AIMCS reorient political discourse away from deliberation toward affect-driven narrative reductionism. The result is a narrowing of interpretive horizons in which consumerist and populist framings dominate over complexity and reflexivity. Rather than merely accelerating media fragmentation, AIMCS reconstitute the very architecture of discourse. They do not operate as passive intermediaries but as active agents of narrative construction, structuring both the content and form of public debate. In doing so, they

prioritize systemic closure and coherence over open-ended political contestation. From a sociocybernetic perspective, this evolution reflects the emergence of a communicative subsystem that recalibrates democratic deliberation by embedding reinforcement logics—engagement metrics, algorithmic filtering, and anticipatory nudging—into the informational infrastructure of public life.

The characterization of AIMCS as autopoietic must be situated within a nuanced, post-Luhmannian framework—one that moves beyond a rigid taxonomy of fully differentiated function systems. Whereas Luhmannian systems are defined by operational closure and binary codes (e.g., legal/illegal in law, true/false in science), AIMCS exhibit only partial autopoiesis. They generate communicative operations—such as rankings, content promotion, and behavioral segmentation—through self-referential processes, yet without adhering to a normative code. Instead, their operations are driven by engagement optimization, predictive modeling, and algorithmic calibration. Consequently, AIMCS do not constitute fully autonomous function systems. They inhabit an emergent, proto-differentiated digital ecology whose boundaries remain fluid and whose influence cuts transversally across established societal domains. Their operational logic reshapes the structural coupling between systems—particularly media, politics, and the economy—by modulating what becomes visible, resonant, and actionable within each. What emerges is a hybrid socio-technical formation: AIMCS act as a meta-operational layer that selectively filters, amplifies, and preconditions the symbolic environment in which public meaning is constructed. This transversal role was starkly evidenced during the 2025 German election, where AIMCS—most notably "X"—did not merely circulate political content but recalibrated the thresholds of political legitimacy itself. Their anticipatory logic, operating through real-time behavioral data and recursive adjustment, enabled the entrenchment of certain narratives while systematically sidelining others. This was not a direct intervention by traditional political actors but a structural intervention by algorithmic systems, modulating discourse according to predictive utility rather than normative debate.

In addressing the second research question, this analysis shows how AIMCS, as hybrid autopoietic entities, fundamentally reshape public meaning-making by embedding algorithmic imperatives into the epistemic and affective infrastructure of contemporary discourse. Rather than constituting a new functional system, they act as cross-systemic modulators—amplifying ideological convergence, suppressing semantic ambiguity, and aligning the public sphere with the operational demands of algorithmic governance. This development marks a profound shift in the architecture of democratic communication: AIMCS no longer merely transmit information, but prefigure the conditions under which political subjectivity, legitimacy, and collective will-formation are possible. Our theoretical framework—drawing from sociocybernetics, neurobiology, and anthropology—demonstrates how AIMCS strategically leverage core cognitive predispositions such as heuristic processing, pattern recognition, and negativity bias. These mechanisms generate recursive feedback loops that entrench existing biases, restrict narrative flexibility, and recalibrate both individual cognition and collective political agency. Coupled with neoliberal market imperatives, AIMCS have concentrated communicative power within a small number of transnational tech conglomerates, shifting public discourse from deliberative negotiation to algorithmically modulated perception. The dynamics of control operate not through explicit censorship but through anticipatory calibration—where engagement metrics, emotional salience, and infrastructural invisibility determine which narratives gain relevance and which disappear before they are even contested. Endorsements of digital sovereignty by political elites, such as the Trump administration's support for Musk's platform governance, illustrate how national discourses are increasingly subordinated to privately owned infrastructures with no democratic mandate. These developments mark a structural reorganization of political communication, where agency is no longer negotiated in the public sphere, but engineered through systems optimized for attention, conformity, and predictive control. Recognizing these dynamics is not a call for nostalgia about lost democratic ideals, but a necessary step toward confronting the material architectures that now delimit political possibility. In this sense, AIMCS not only restructure the symbolic environment of democratic life but increasingly function as self-reinforcing, semi-autonomous infrastructures

of anticipatory control, closing the recursive circuits through which political subjectivity and collective agency are both enabled and constrained.

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