

Review

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Review

AI Society Theory: Re-Imagining Castells' Network Society in the Algorithmic World

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Abstract

The rise of artificial intelligence (AI) challenges existing frameworks in media and communication studies, revealing the limits of classical theories and Castells' network society in explaining contemporary social transformations. While Castells (2010) conceptualized society as structured through networks, flows, and informationalism, the proliferation of AI systems introduces a new layer of mediation, where algorithms autonomously generate, filter, and govern information, culture, and economic activity. This paper proposes AI Society Theory as a conceptual framework to address this gap. Building on the foundations of network theory, we reconceptualize the space of flows as the space of AI and extend informationalism into algorithmic informationalism, highlighting how AI systems actively shape knowledge, visibility, and value creation. We examine the formation of layered AI communities- from users of specific platforms, to developer collectives, to platform-based subcultures- demonstrating that AI infrastructures are sites of social interaction, identity formation, and cultural production. Through a critical review of classical media theory, the network society, platform society, surveillance capitalism, and essential AI studies, we identify a gap: existing frameworks either neglect algorithmic autonomy or remain centered on human agency. AI Society Theory addresses this by positioning AI as both infrastructure and social actor, offering a lens to analyze how communication, power, and culture are reorganized in algorithmic societies. By articulating the theoretical contours of AI-mediated social life, this study lays the foundation for future empirical and conceptual research, providing a robust framework to understand how AI is transforming societies, platforms, and communication in the twenty-first century.

Keywords: AI Society Theory; Algorithmic Society; Network Society; Algorithmic Informationalism; Platform Communities; Media and Communication Studies; Digital Culture

1. Introduction

Over the past three decades, there have been significant changes in media and communication theory as scholars have tried to understand the implications of digitalisation, globalization and the network's rise. Nevertheless, the recent acceleration of artificial intelligence (AI) requires that we look at these theoretical traditions again with urgency. AI is not only a technological progress, but also a deep social, cultural and economic power that explains how the media is arbitrariness, how knowledge is transferred and how social power is distributed. We argue that media theory, although it is rich in conceptual foundations, is insufficient to explain the depth of the ongoing algorithms' changes.

As a starting point, we turn to Manuel Castells' *The Rise of the Network Society* (1996/2010), which remains one of the most influential frameworks in the study of media, communication, and society. Castells argued that informational capitalism created a new social morphology: the network society. In his words, "networks constitute the new social morphology of our societies" (Castells, 2010, p. 469). The center of this model is the concept of flow space, an imaginary tool that explains how communication networks and information processes exceed traditional spatial and institutional boundaries. Their work gains how digital networks enable global connection, rearrange economic

activity, and enable new forms of political and cultural dynamics. For decades, the media infrastructures structure in this structure shapes our understanding of how society is. Nevertheless, the rise of AI faces challenges that the models of castels cannot fully guess. The network of castels, while dynamic and expanders, are primarily human-operated. They are understood as condenser for information, culture and flow of power rather than an environment actively shaped by non-human agents. Conversely, contemporary communication is rapidly within algorithm systems that not only mediate, but also produce materials, filters, and predict. As Gillespie (2014) has shown, algorithms are not neutral intermediaries but cultural and political actors that structure visibility, attention, and credibility. Rouvroy (2016) similarly describes the emergence of “algorithmic governmentality,” in which predictive systems govern social behavior by probabilistically organizing the future. These perspectives highlight the extent to which AI technologies now participate in meaning-making, identity formation, and social coordination.

Researchers have begun to develop concepts that address this dynamic. Zuboff (2019) has designed dominance of digital platforms such as “Capitalism Monitoring”, where data extraction and future analysis are central to economic value. Canary and Mejias (2019) describe “data colonialism” as the global allocation of human life through digital infrastructure. van Dijck, Poell, and de Waal (2018) elaborate the “platform society” as an ecosystem in which a handful of corporations mediate social, cultural, and civic practices. Together, these works make clear that AI is deeply embedded in the structures of contemporary life. Although these contributions forward our understanding of data, platforms and power, they often do not clearly integrate the structural heritage into Castelle's networking society with algorithm changes in the stream. This is the place we want to take up. We argue that the Castles Network Society provides an important conceptual basis, but it should be rebuilt in light of the bend of the algorithms. The infection from a society from a society from a society with algorithm infrastructure requires theoretical innovation. AI forces us to form arbitration, communication and social structure. If the network community emphasized the flow of information in the nodes, the AI community forces us to check how algorithms change the actual conditions of communication and social interaction. The purpose of this literature review is therefore twofold.

First, we aim to map how classical media theory, Castells’ network society, and contemporary analyses of algorithmic systems each contribute to our understanding of digital society. Second, we seek to identify the limitations of these frameworks and to outline the contours of what we call an AI Society Theory. By positioning AI not simply as a technological tool but as a social, cultural, and economic phenomenon, we establish a foundation for rethinking communication and society in the algorithmic world. In doing so, we prepare the ground for a theory that both acknowledges its debts to Castells and ventures beyond his framework to capture the emergent realities of our time.

2. Background

2.1. Castells and the Network Society

To situate our argument, we find it necessary to position Manuel Castells’ concept of the network society within the broader history of media and communication theory. Earlier traditions laid the foundation for understanding how media reshape society. For instance, McLuhan (1964) emphasized that “the medium is the message,” underscoring that technologies function as extensions of human faculties that reorganize social life. AI has evolved from a technical tool into a transformative medium that actively generates, filters, and shapes content (Cheriti, 2025). Similarly, Habermas (1989) theorized the public sphere as a communicative arena where rational-critical debate could sustain democracy, while critical political economy scholars such as Smythe (1981) and Murdock and Golding (1999) analyzed media industries as embedded within capitalist power structures. Building on these traditions, Castells (1996/2010) shifted the conversation toward the systemic transformations of the late twentieth century, arguing that digital communication and globalization reorganized the very morphology of society. As he famously stated, “networks constitute the new social morphology of our societies” (Castells, 2010, p. 469). For us, this declaration highlights the centrality of networks

not only as technical infrastructures but also as the organizing logic of economics, politics, and culture.

A key element in Castells' framework is the notion of flows. We understand flows as the movements of information, capital, and symbolic content that circulate across the nodes of global networks. Unlike earlier models that emphasized localized institutions or national boundaries, Castells shows how power and meaning increasingly travel through dynamic circuits of communication (Castells, 2010). To capture this shift, he introduced the distinction between the space of places and the space of flows. The space of places refers to geographically bound and socially situated contexts of everyday interaction. By contrast, the space of flows transcends locality, organizing global exchanges of information, finance, and power. From our perspective, this distinction remains one of Castells' most powerful contributions, as it illuminates how digital networks reorder the relationship between the local and the global.

Another core concept is informationalism, which Castells defines as the technological paradigm in which the generation, processing, and transmission of information become the primary sources of productivity and power. While industrialism was oriented toward the production of goods and energy, informationalism is centered on knowledge and communication as the drivers of social change (Castells, 2010). We see informationalism as the material foundation of the network society: just as industrial technologies underpinned the industrial era, informational technologies underpin the digital age. By bringing these concepts together - networks as a fluid space as social morphology, flow, place space space, and informationalism - Castells have provided a comprehensive structure to understand the reorganization of society in the age of information. When advancing the structural account of the network as an architecture of contemporary life, we see their synthesis as the principles of the previous principles as previous principles. For this reason, Castells remains indispensable for our project, as we argue that the rise of artificial intelligence needs to expand its structure now called AI Society Theory.

2.2. *The Influence of the Network Society Across Disciplines*

We recognize that Castells' formulation of the network society has had a profound influence well beyond communication and media studies, shaping debates across sociology, political science, geography, cultural studies, and information science. In sociology, Castells' work offered a framework for understanding how globalization, technological change, and economic restructuring interact. Scholars have drawn on his ideas to analyze transformations in work, identity, and community within networked environments (Wellman, 2001). Their emphasis on networks as a dominant social morphology resonates with the "networked individualism" approach, which investigates how personal relationships and social support systems are rearranged by digital connectivity. In the political clash, the structure of the Castells has informed the analysis of the role of digital communications in a network of networks from the Zapatista movement to the more recent mobilization, such as the Zapatista Movement in the 1990s. (Bennett & Segerberg, 2012). These studies extend the Castells' argument that the power in the Network Society is used not only by institutions, but also by the ability of communication flow, contest and control.

Geography and urban studies are also widely engaged with their difference between the concepts of Castells, especially the flow space and the space of the locations. Scholars such as Graham and Marvin (2001) have built on this idea to theorize the "splintering urbanism" of cities shaped by global informational flows and unequal access to networked infrastructures. This spatial lens has proven invaluable for analyzing how digital networks restructure urban life, from global finance to smart city initiatives. Similarly, in cultural studies, the load of Castles on informationism has inspired analysis of how media and culture are embedded in the flow of global communication. Identifying in the network society continues to report discussions about the concept, hybrid, cultural globalization and digital identity, which involves negotiations between global network and local cultural resources.(Castells, 2010). Finally, in information science and technology studies, Castells' work has been influential in linking the technical properties of networks with their social and

organizational consequences. His framework has been cited in research on the knowledge economy, digital labor, and information policy (Van Dijk, 2020). By imagining networks as both technical systems and social compositions, Castells created a vocabulary that pulls the discipline boundaries. Therefore, we look not only within the communication study, but also as a theoretical resource shaping globalization, technology and interdisciplinary scholarship on society.

3. Critical Engagements with the Network Society

While Castells' theory of the network society remains foundational, we also recognize that it has been the subject of significant critique and refinement. Scholars have questioned the extent to which Castells adequately accounts for the dynamics of power and inequality within networked structures. Although Castells (2010) emphasized that power flows through networks, critics argue that his framework tends to understate the asymmetries of access and control embedded in digital infrastructures (Couldry, 2012). For instance, van Dijk (2020) reminds us that the "network society" is not universally experienced but stratified along lines of class, geography, and digital literacy, raising concerns about how the digital divide reproduces existing social inequalities. Similarly, feminist scholars have pointed out that Castells' abstract conception of networks overlooks embodiment, affect, and gendered experiences of technology (Wajcman, 2004). By privileging flows of information and capital, Castells has been criticized for neglecting how bodies, emotions, and identities are situated in material and cultural contexts.

In addition to these critiques, many scholars have sought to expand Castells' framework to capture new dynamics of globalization and digital capitalism. For instance, Hardt and Negri (2000) extend the logic of global networks to argue that sovereignty itself is reconfigured through dispersed forms of "Empire." Studies of digital labor have also developed beyond Castells' informationalism, highlighting the exploitation and precarity of workers in the global digital economy. Fuchs (2014), for example, emphasizes that informational capitalism relies not only on flows of knowledge but also on the extraction of surplus value from digital labor, ranging from software development to user-generated content on social media platforms. More recently, analyses of platform capitalism (Srnicke, 2017) show how firms such as Google, Amazon, and Facebook centralize control over data, infrastructure, and markets, challenging the idea that networks are inherently decentralized. These contributions extend Castells' insights into the structural transformations of the digital age while foregrounding issues of labor, ownership, and control.

Nevertheless, as we want it, this expansion also reveals the limit of the structure of the network society in the account for the rise of artificial intelligence and algorithmic autonomy. While globalization, digital labor and platform addressed power and inequality in capitalism network systems, they still assume the human agency in the formation, distribution and interpretation of information. What they cannot fully explain is how algorithms themselves work more and more as a mediator of culture, communication and economy. Striphos (2015) introduces the notion of "algorithmic culture," suggesting that algorithms do not merely transmit information but actively shape what knowledge is visible, relevant, and valuable. Similarly, Beer (2017) emphasizes that algorithmic systems embed particular logics of classification and control, often opaque to users. This perspective indicates that Castells' informism should be reconsidered to focus on how AI systems directly produce, filter, and rule through human supervision directly. In other words, when criticisms of Castells have made significant progress in locating network society in terms of power, inequality and capitalism, they shine with algorithmic autonomy. It is certainly that we see the need to expand the structure of the castles towards the AI Society theory.

4. The AI Turn

We observe a significant shift in contemporary scholarship from networks as social morphology to algorithms as infrastructures of mediation and governance. Whereas Castells (2010) emphasized the centrality of flows across networks, recent debates have focused on how algorithmic systems

actively structure those flows and shape the conditions of social, political, and cultural life. Antoinette Rouvroy (2013) describes this emerging reality as the algorithmic society, where decision-making increasingly relies on automated processes of data profiling and prediction rather than deliberative human reasoning. Similarly, Tarleton Gillespie (2014) highlights the cultural and political role of algorithms, stressing that they are not neutral tools but socio-technical constructs that embody particular assumptions, values, and power relations. In this sense, algorithms govern by classification and prioritization, determining what becomes visible, knowable, and actionable.

This shift is also captured in the notion of the platform society, articulated by José van Dijck, Thomas Poell, and Martijn de Waal (2018). They argue that digital platforms such as Facebook, Google and Amazon now act as the primary structures of social life, mediation communication, commerce, politics and public services. The platform is not just spaces where the network works; They are an algorithmically powered environment that indicates partnership and visibility. From our point of view, this media represents the basic regeneration of the theory: Instead of focusing on how networks are connected, we should inquire about how the platform and their algorithm architectures should be very likely to create the connection. The economic logic underpinning this transformation has been theorized by Shoshana Zuboff (2019) as surveillance capitalism. According to Zuboff, platforms exploit personal data as a raw material to predict and influence behavior, thereby converting human experience into a new frontier of capitalist accumulation. This perspective extends Castells' concept of informationalism but reveals its darker underside: informational flows are no longer only the basis of productivity but also the foundation of extraction and behavioral control. Nick Couldry and Ulises Mejias (2019) push this critique further by framing datafication as data colonialism, a global process that appropriates human life for capitalist value extraction in ways analogous to historical forms of colonialism. These analyses foreground the structural inequalities and geopolitical asymmetries that shape algorithmic infrastructures.

Critical AI studies provide further insights into how algorithmic systems reproduce and intensify social inequalities. Virginia Eubanks (2018) documents how automated welfare and policing systems disproportionately harm marginalized populations, embedding systemic bias under the guise of efficiency. Kate Crawford (2021) emphasizes that AI is not an abstract intelligence but a material and political infrastructure, reliant on labor, natural resources, and power. Safiya Noble (2018) similarly shows how search engines perpetuate racial and gender bias, illustrating how algorithms actively encode social hierarchies. Collectively, these perspectives highlight that algorithms are not passive intermediaries but infrastructures of governance and control with profound cultural, economic, and political implications. AI platforms operate as algorithmic infrastructures, simultaneously mediating content and reorganizing access to knowledge and culture (Cheriti, 2025).

Together, the body of this work represents what we call an algorithmic turn in a media and communication study. Where Castells perform imaginative networks as the central architecture of the digital age, contemporary scholars emphasize algorithmic infrastructures that shape the flow of information, regulate behavior and rearrange the strength. For us, this shift reflects the imperfections of the network theory alone to capture the social change brought by AI. It is within this algorithmic turn that we find the need to have a theorizing of AI society, which artificial intelligence creates not only the mediation of communication but also the very conditions of social life.

5. Identifying the Gap

After reviewing the main theoretical route in the media and communication teaching, we now turn to the task of synthesize their contribution and identify where they fall short in relation to the rise of artificial intelligence. Each body of the task provides critical insights, but provides a comprehensive structure for theorizing AI as any social event.

Classical media theories provided the foundation for understanding how communication technologies shape society. McLuhan's (1964) insistence that the medium is itself constitutive of meaning, Habermas' (1989) vision of the public sphere, and Smythe's (1981) political economy of the

audience all revealed how media act as extensions, arenas, or industries of social life. Yet these theories were developed in the context of mass media and industrial capitalism. They remain centered on human communication, cultural production, and political deliberation, without considering how algorithms or AI systems might mediate, generate, or automate meaning-making processes. Castells' (2010) network society framework marked a decisive shift by conceptualizing networks as the new social morphology. His concepts of flows, the space of flows versus the space of places, and informationalism offered a structural understanding of how digital technologies reorganize society. However, Castells treated networks largely as infrastructures that transmit information, not as autonomous agents capable of generating content or making decisions. While he identified the centrality of information, he did not anticipate the algorithmic turn where machine learning systems increasingly govern flows and reconfigure cultural visibility.

Contemporary approaches to the digital age—particularly theories of platform society, surveillance capitalism, and data colonialism—have deepened the analysis of power and governance. Van Dijck, Poell, and de Waal (2018) highlight how platforms organize participation and visibility, while Zuboff (2019) demonstrates how data are extracted and monetized in surveillance capitalism. Couldry and Mejias (2019) extend this critique by framing datafication as a form of colonial appropriation. These perspectives reveal how algorithmic infrastructures reorganize economics, politics, and culture. Yet even here, the focus remains on human-centered processes: corporate ownership, state regulation, and social resistance. Algorithms are examined as tools of governance, not as systems that themselves actively produce cultural and social orders.

Critical AI studies bring attention to bias, inequality, and exploitation within AI systems. Eubanks (2018) documents how welfare automation punishes the poor, Noble (2018) demonstrates how search engines reinforce racism, and Crawford (2021) situates AI within global circuits of labor and resource extraction. These interventions are essential in showing how AI exacerbates structural inequalities. However, they tend to operate at the level of critique and case study rather than offering a general theory of society in the age of AI. They diagnose harms but stop short of reconceptualizing how AI itself functions as a social actor that mediates culture, communication, and economic life.

Together, this literature reflects the need for a new theoretical structure. Classical media principles explain communication but not algorithms; Castells highlight the network but not algorithmic autonomy; Platform and data principles reveal the regime but assume the human-centered agency; And the critical AI study highlights the loss without offering a holistic social model. What is missing is a principle that is responsible for AI, which mediates in the sense, produces J Knowledge, and the power of the composition is autonomously both structural features and agent systems. It is definitely this distance that promotes our proposal for the AI Society Theory, a structure that re-imagines the Castells' Network Society for Algorithmic World.

6. Toward an AI Society Theory

In view of the foundations of the Castles' Network Society, when the algorithmic curve is included in a critically involved, we propose the outline of what we call AI Society theory. Our intention is not to discard the previous structure, but to re-Imagine them in the light of contemporary change. Although the insights of the castles in the networks as a social morphology remain inevitable, in the current age, it is no longer enough to describe society in terms of flow of information and connections in tumors. Algorithms and artificial intelligence systems have introduced a qualitatively new level of mediation - one in which infrastructures not only infect the flow but actively produce, filter and operate them. To understand the current, we should therefore expand the architecture of the Castells to the algorithmic register.

A first step in this reimagining is to revisit the notion of the space of flows. For Castells (2010), this concept captured the dominance of globally interconnected information, capital, and communication streams over localized "spaces of places." Today, however, flows are not only carried through networks but are shaped by algorithmic operations. Whether in TikTok's recommendation engine, Google's search ranking, or Spotify's playlist generation, The rotation that takes place is no

longer a direct flow of human communication but actively cured and, in many cases, is autonomously produced by AI systems. So we can talk about the space of the algorithms: a social space where the view, connection and the Knowledge is designed by machine learning models that work on the outward speed and scales of human control. This change does not erase the flow space, but is re -by an algorithmic mediator. Similarly, Castells' (2010) concept of informationalism—the mode of development in which information processing is central to productivity and power—requires updating. In the 1990s, informationalism described how information networks restructured economies and societies. Today, however, we face what could be termed algorithmic informationalism: a mode in which not only the circulation but also the generation of information is automated. Large language models, image generators, and predictive analytics exemplify this shift. For instance, ChatGPT or DALL-E do not merely transmit information created elsewhere; they produce new cultural artifacts in real time. This move from informationalism to algorithmic informationalism signifies a transition from networks as conduits to algorithms as co-producers of meaning and culture.

This regeneration has profound social effects. The space of the algorithms introduces new forms of strength and inequality, because the accession of visibility and validity is more and more dependent on opaque systems designed by some corporations. At the same time, algorithmic informationism transforms J Knowledge and labor conditions. Automatic systems also create questions about creativity, authorship and value, text, images and code. For example, when midjarny produces an artwork or GitHub Copilot generates functional software, the line between human and machine production blends. These examples explain that the structure of the Castells, despite still basic, requires extensions to capture how AI reshapes the very fabric of communication and product. Importantly, our proposal is not to replace the network society with an entirely new paradigm, but to articulate an AI society theory that builds directly upon it. Networks remain the structural backbone of globalization, but their dynamics are increasingly governed by algorithmic systems that filter and transform flows. Where Castells spoke of informational capitalism, we must now also consider algorithmic capitalism, in which predictive analytics, automated recommendations, and generative AI are central to value creation (Srnicsek, 2017). Where Castells emphasized the informational city, we now encounter smart cities governed by algorithmic surveillance and optimization systems. Each of these developments extends rather than negates the original framework, but requires us to name AI as a distinct agent of social organization.

At this stage, our purpose is not to present a complete closed theory, but to sketch the fantasy bases for further development. We suggest that the AI Society theory should be struggling with at least two initial parameters: (1) The change of flow of algorithmic cured and communication currents, and (2) the emergence of algorithmic information as the central mode of contemporary capitalism. These parameters, illustrated by everyday examples such as social media feeds, search engines and generating AI systems, provide the starting point for theorizing AI as a social force. We define the AI Society theory as an ideological structure to understand how artificial intelligence works together as a technical infrastructure, a cultural mediated and a social actor in the organization of contemporary life. Construction of the Network Society's perception of castes, this principle re -explains the central mobility of society in an era where the algorithm not only transmits information, but actively produces, filters, and controls it. In this framework, society is considered structured which we call the location of AI, where the flow of communication and knowledge is shaped by cursoring, recommendation and generation AI-operated processes. Similarly, the historical argument of informationalism is extended to algorithm informationism, in which AI systems autonomously create cultural and economic values by producing lessons, pictures, codes and predictions on the scale.

AI Society Theory emphasizes that platforms and their ecosystems give rise to layered forms of community-from user groups around specific tools, to developer collectives, to the entire platform-based subcultures. These communities demonstrate how AI conveys social interaction, identity and opinion. In short, Ai Society Theory provides an objective to analyze how artificial intelligence converts communication, power and culture, and positions AI not only as a tool in society, but as a

constitutive element in society itself. By promoting this framework, Reimagine Castells' Network Society for the Algorithmic World. The task ahead is to limit these concepts, test them against empirical realities and further formulate how AI conveys communication, knowledge and power. By positioning AI as both infrastructure and agent, we begin to outline a theory capable of explaining our present and predicting that the social transformations come.

7. Conclusion

Our review has shown that while classical media theory, Castells' Network Society and the scholarship of algorithmic, turn each glowing important aspects of media and communication, they are not sufficient to address the social transformations driven by artificial intelligence. Media theory today must go beyond describing communication channels or network infrastructures to engage with AI as an active social power - one that generates content, filters visibility and structures collective life. What is needed is a framework that positions AI as both infrastructure and agent: a theory that explains how society is reorganized through algorithmic mediation. We have positioned the AI community theory as this necessary expansion. By reassessing Castells' concepts that flow and information in algorithmic terms, we have outlined the contours of a model that recognizes how culture, power and knowledge are increasingly being produced and distributed by AI systems. Nevertheless, we remain open, emphasizing that this is the beginning of a longer theoretical project, which requires empirical anchoring and further conceptual processing. The importance of this project is clear in the new forms of community that emerge around AI platforms. We see communities with users organized around a specific AI platform, and exchange knowledge and practice. We also observe local communities of developers who form and adapt a specific AI system to meet different needs. Beyond these, it is platform society itself: for example, the ecosystem of image generation platforms, the ecosystem of text-generation platforms or the AI-assisted coding platforms. Each of these ecosystems contains less sub-community, where practice, identities and norms take shape. These layers of community formation show that AI platforms are not just technical tools; They are social worlds in themselves.

By synthesizing existing scholarships and identifying where it is short, this review lays the foundation of Ai Society Theory. Our contribution is to map the conceptual bridge from Castells' Network Society to the algorithm world we now live. This bridge is important if we are to understand how AI recreates communication, culture and society in the twenty-first century.

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