



**Structural transformations in the communication system
From human interaction to algorithmic mediation
- critical analytical study-
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Abstract

The contemporary communication system is undergoing profound structural transformations due to the rapid development of artificial intelligence and algorithmic systems. Communication is no longer purely human-centered, based solely on intentionality and symbolic interaction; instead, it has become a space shared with non-human actors capable of producing messages, directing meaning, and influencing collective awareness. This study critically analyzes these transformations from a philosophical perspective, tracing the evolution of communication models from Shannon and Weaver's linear model, through Habermas's communicative rationality, to Castells's network society, with particular attention to the emergence of the algorithmic actor. The findings indicate that these transformations not only affect communication tools but also reshape the communicative structure, social values, and the position of humans within the digital public sphere.

Keywords: Communication system; Human actor; Algorithmic; Artificial intelligence; Communication models; Network society.

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1. INTRODUCTION

In the contemporary era, communication can no longer be understood as a neutral or linear process of information exchange. It has evolved into a complex and dynamic system shaped by the interaction of technical infrastructures, social practices, and cultural meanings. The accelerated development of artificial intelligence (AI) and algorithmic systems has profoundly reconfigured the communicative space, challenging the traditional assumption that human actors are the sole agents responsible for producing, interpreting and negotiating meaning .

This transformation gives rise to a central problem that frames the present study; to what extent has the shift from human-centered communication to algorithmic mediation altered the nature of communicative action, rationality, and social values in the digital age? The increasing presence of algorithmic actors in processes of selection, circulation, and interpretation of information raises critical philosophical questions about agency, autonomy, responsibility and the ethical foundations of contemporary communication (van Dijck & al., 2018).

Rather than approaching these changes from a purely technical or deterministic perspective, this research adopts a critical–analytical approach that situates communication within its broader socio-philosophical context. The study seeks to uncover the structural transformations underlying contemporary communication by examining how meaning production is increasingly shaped by algorithmic logic, and how this shift affects the public sphere and the conditions of social interaction.

Methodologically, the research follows a descriptive-analytical strategy with a critical orientation, grounded in a comparative theoretical framework drawing on three major paradigms in communication theory: Shannon and Weaver’s linear model of communication (Shannon & Weaver, 1949), Habermas’s theory of communicative rationality (Niemi, 2005), and Castells’s concept of the network society (Castells, 2009). Through this framework, the study analyzes the transition from classical models centered on human intentionality to contemporary forms of algorithmic mediation.

2. Communication theory and structural transformations

2.1 Theoretical foundations of communication models

In its theoretical and historical development, communication can be understood as the deep structure underpinning human society and its meaning. Habermas’s Theory of Communicative Action emphasizes that mutual understanding and recognition are prerequisites for the possibility of social action and historical development (Habermas, 2006).

However, the normative dimension of communication found its early operational representation in Shannon and Weaver’s model, which reduced the communication process to a linear technical sequence focused on message transmission and noise control, neglecting dimensions of meaning, context, and symbolic power (Shannon & Weaver, 1949). With digital transformations, this model



alone is insufficient to account for the complexity of contemporary communication. Manuel Castells reconceptualized communication within the framework of the network society, where power shifts from the producer of discourse to those who control the flows of information. In this perspective, communication becomes a networked system in which communicative rationality intersects with technical rationality, and the centrality of the human actor diminishes in favor of algorithmic actors that reorganize the public sphere and meaning production (Castells, 2009).

2.2 Definition, structure and function of communication models

A communication model is a theoretical and interpretive framework designed to simplify and understand how messages are produced, transmitted, and circulated within a social system, by identifying communicative actors, their interrelations, and the mechanisms of meaning-making. It reflects a philosophical and epistemic vision of human communication and its societal function (Ben Gharbia ,2012). Structurally, classical models comprise sender, message, channel, receiver, context, feedback, and noise. Contemporary models, however, are dynamic and networked: roles overlap, feedback is continuous, and media platforms and algorithms function as active agents shaping message flows (van Dijck & al., 2018). Functionally, communication models explain not only information transfer but also meaning production, social coordination, value formation, and behavioral regulation. In digital environments, communication increasingly anticipates and influences behavior through algorithmic prediction and personalization (Castells, 2009)

2.3 Value Dimensions of the Communication Model

Every communication model carries implicit values that define relationships between actors and ethical limits of authority and responsibility. Human-centered models prioritize dialogue, understanding, and mutual recognition (Habermas, 2006). In contrast, algorithmic and technical models prioritize efficiency, speed, and reach, often at the expense of depth and meaning. The value dimensions reveal the type of society produced and the positioning of humans within it. According to Jamal Al Zarn, the contemporary communication system is:

“a new environment of ideas, opinions, news, media, and circulation methods, produced by the transformation from analog to digital and from hierarchical to networked communication, where media and communication are intertwined” (Al Zarn, 2012, p. 24).

This system, “A complex socio-technical system involves both human and non-human elements, such that the interaction of these elements results in an outcome...” (Gumede & Tladi, 2023, p. 5), encompasses multiple spheres of activity that constitute the public communicative space, including political, economic, and social institutions. Public communication, in this sense, integrates these dimensions, actively shaping the conditions for collective life and social organization. communication theory emerged prominently in the 1940s, initially within the domain of electrical engineering, encompassing disciplines such as information theory and cybernetics (Craig & Muller, 2007). By the early 1950s, scholars and practitioners involved in audiovisual instruction began to engage with emerging communication models, including the seminal Shannon and Weaver model, which conceptualized communication as a process



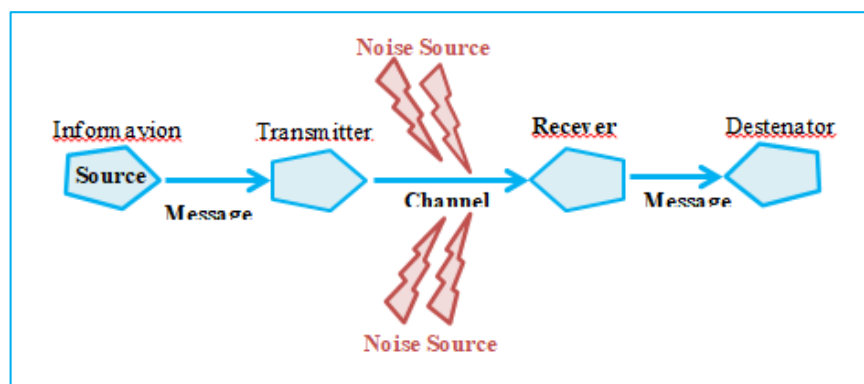
comprising a sender, a message, a channel, and a receiver. These early frameworks emphasized technical accuracy and the mechanics of message transmission. Subsequently, the conceptualization of communication evolved under the influence of mass media technologies - telephone, radio, and television- shaping both the production and reception of messages within society (Griffin, 2012). This historical trajectory underscores the gradual shift from viewing communication as a linear, human-centered activity toward recognizing its complex, technologically mediated nature. Today, as algorithmic systems and artificial intelligence increasingly participate in message creation, selection, and circulation, communication theory must account not only for human intentionality but also for the distributed agency of non-human actors in structuring meaning and shaping the public sphere.

3. The Shannon and Weaver Model: Classical Structure and Limits

3.1 Structural components of the classical model

Linear communication models represent one of the earliest systematic efforts to conceptualize communication as a structured process. Among these, the Shannon and Weaver model occupies a foundational position, as it frames communication as a linear sequence in which an information source generates a message that is transmitted by a sender through a channel to a receiver, with noise identified as a potential source of distortion. This configuration, illustrated in Figure 1, reflects a technically oriented understanding of communication grounded in engineering and information theory.

Fig.1. Shannon and Weaver model of Communication



Source: The researcher based on (Shannon & Weaver, 1949)

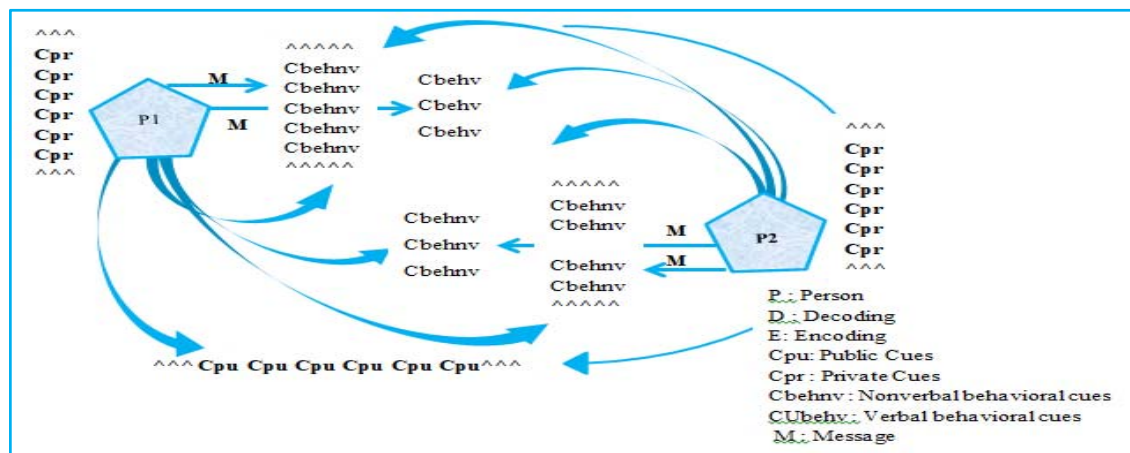
At the time of its formulation, the model offered a revolutionary analytical framework by introducing concepts such as encoding, decoding, channel efficiency, and noise control. However, when applied to human communication, its limitations become evident. Human communication is not a simple transfer of information but a socially constructed, context-dependent, and reciprocal process shaped by culture, interpretation, and interaction (Hallahan & al., 2007).

The linear structure of the model presupposes an intentional human sender and a largely passive receiver, while meaning is treated as embedded in the message itself rather than emerging through



interaction. Feedback, context, and cultural differences are marginal to the model's core logic, which results in a reduction of communication to technical transmission rather than social meaning-making. These limitations prompted early theoretical critiques that shifted attention from transmission to interpretation. Schramm introduced the concept of shared fields of experience, arguing that understanding depends on the degree of overlap between the sender's and receiver's cultural and experiential backgrounds. Similarly, Jakobson emphasized the functional roles of context, contact, and code, demonstrating that communication effectiveness cannot be separated from its situational and symbolic conditions. Such critiques paved the way for cyclical and transactional approaches to communication, which reconceptualize communication as an interactive and ongoing process. In this regard, Barnlund's transactional model represents a decisive theoretical shift. As illustrated in Figure 2, communication is understood as a simultaneous exchange of verbal and nonverbal cues, where participants continuously send and receive messages and jointly construct meaning (Barnlund, 1970).

Fig.2. Barnlund's Transactional Model of communication



Source: (Kuznar, 2020, p6)

In contemporary strategic communication, the limits of linear models become increasingly apparent. Messages do not circulate in a neutral space but are continuously shaped by cultural frameworks, environmental conditions, and the interpretive horizons of diverse audiences. Communication effectiveness therefore depends less on unilateral transmission than on reciprocal processes through which participants influence one another, adjust their messages, and collectively negotiate meaning. From this perspective, communication emerges as a socially embedded and adaptive process rather than a fixed technical operation (Adami, 2016).

Historically, linear models such as that of Shannon and Weaver conceptualized communication as a one-directional flow in which a sender conveys a message to a receiver through a defined channel. While this model represented a major theoretical breakthrough within engineering and information theory, its applicability to human communication remains limited. Human interaction is inherently dynamic, interpretive, and relational, involving feedback, context, and symbolic



negotiation that extend beyond the logic of transmission (Hallahan et al., 2007). Critical responses to linear models highlighted these shortcomings by emphasizing the co-constructive nature of meaning. Schramm's notion of shared fields of experience demonstrated that understanding depends on overlapping cultural and experiential backgrounds rather than on message clarity alone. Jakobson further reinforced this view by underscoring the communicative functions of context, contact, and code, thereby situating meaning within relational and situational conditions. These theoretical interventions paved the way for cyclical and transactional models that conceptualize communication as an ongoing interactive process rather than a unidirectional exchange (Kuznar, 2020).

Within the Shannon and Weaver framework itself, communication is defined as a technically oriented process composed of seven core elements: information source, sender, message, channel, noise, receiver, and destination (Shannon & Weaver, 1949). The primary objective of this model is the accurate transmission of information, assuming a fully intentional human sender, a neutral channel, and noise as an external source of interference. While this structure clarifies the mechanics of transmission, it offers only a partial account of communication as a social practice grounded in interpretation, interaction, and meaning-making.

3.2 Conceptual and Epistemological Limits:

Although historically foundational, the Shannon and Weaver model is epistemologically constrained in its ability to account for meaning, social interaction, and power relations. By defining communication primarily as information processing, it reflects a technical rationality that abstracts communication from its cultural, political, and ethical dimensions (Craig, 1999). Feedback remains structurally peripheral, and communicative agency is confined to the human sender. In digital communication environments, these assumptions are no longer tenable. Platforms introduce algorithmic filtering, ranking, and personalization mechanisms that actively reshape information flows and redefine communicative visibility. As McLuhan (1964) anticipated, the medium itself becomes a structuring force that transforms perception, interaction, and social organization. Within this context, the classical concept of noise acquires renewed significance. Noise is no longer merely an external disturbance but increasingly an internally generated effect of algorithmic mediation. Algorithms intervene by amplifying certain messages, suppressing others, and reshaping interpretive frameworks.

Table 1. Algorithmic transformation of classical noise

Classical noise type	Relation to algorithmic actor
Physical	Digital platforms can amplify or reduce environmental interference, e.g., network latency or device constraints.
Psychological	Algorithms shape attention, create echo chambers, and reinforce cognitive biases, effectively producing algorithmic psychological noise.



Biological	While less directly connected, algorithms exploit user states (fatigue, boredom) to increase engagement, indirectly amplifying noise effects.
Semantic	Algorithms reorder, highlight, or obscure messages, creating semantic noise at scale, altering meaning and interpretation.

Source: The researcher's elaboration

Through algorithmic mediation, noise is transformed from passive interference into an active structuring mechanism. Meaning production becomes distributed between human intention and computational logic, fundamentally altering the classical sender–receiver paradigm. This transformation is further illustrated in Table 2, which contrasts classical communication with algorithmic communication structures.

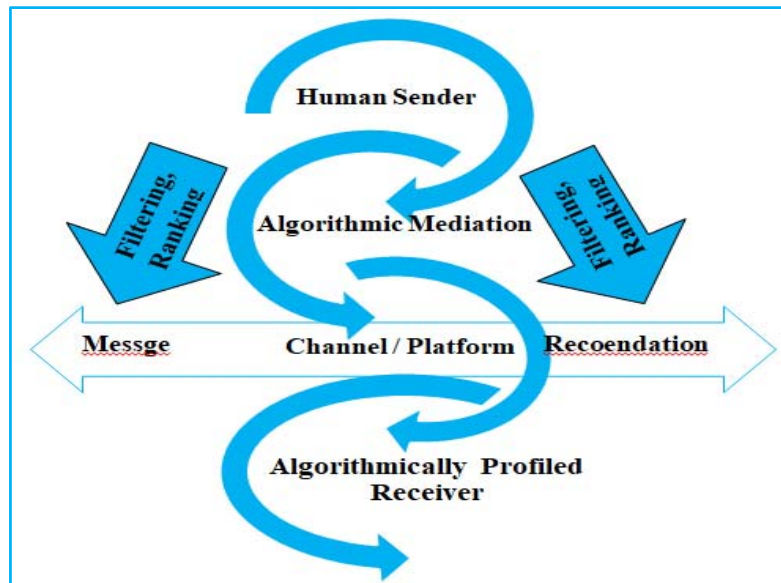
Table 2. Classical and algorithmic communication

Classical model element	Algorithmic communication
Human sender	Human sender and algorithmic mediation
Neutral channel	Platform as a socio-technical environment
Technical noise	Technical, symbolic, and algorithmic noise
Passive receiver	Algorithmically profiled receiver

Source: The researcher's elaboration

The integration of the algorithmic actor into the classical model is conceptualized in Figure 4, which visually represents the shift from linear transmission to hybrid mediation.

Figure 4. Integration of the Algorithmic Actor into the Shannon–Weaver Model



Source: The researcher's elaboration

The human sender produces messages with conscious intentionality. The algorithmic actor intervenes by filtering, ranking, and recommending content according to platform logic and user data. The channel operates as a socio-technical environment, while the receiver is algorithmically



profiled, meaning exposure to messages and interpretive possibilities are shaped by algorithmic processes rather than purely human choice.

In this reconfigured communicative structure, communicative power becomes distributed, and meaning emerges through the interaction between human agency and algorithmic mediation. Communication thus evolves from a human-centered linear process into a hybrid system that actively reshapes the dynamics of the public sphere.

4. Habermas and Communicative Rationality

3.1 Structural Components of Communicative Action

Habermas's theory of communicative action redefines communication as a socially and ethically grounded practice oriented toward mutual understanding rather than the efficient transmission of information. Within this framework, communication is not evaluated solely in terms of accuracy or effectiveness, but according to its capacity to sustain rational dialogue, normative validity, and intersubjective recognition among participants (Nie mi, 2005).

In classical face-to-face interaction, as well as in dialogic mediated communication, communicative action is structured around several interdependent elements. Human actors engage intentionally in dialogue, advancing validity claims that may be questioned, defended, or revised through argumentation. These claims concern truth, normative rightness, and sincerity, and they are assessed within shared social and ethical contexts. Communication thus unfolds as a reflexive process in which participants continuously interpret not only message content but also intentions, assumptions, and normative expectations.

The ultimate orientation of communicative action is consensus formation, understood not as imposed agreement but as rationally motivated understanding achieved through deliberation. Contextual norms play a crucial role in this process by providing interpretive frameworks and establishing accountability. Misunderstandings may arise due to contextual asymmetries, cognitive biases, or power imbalances; however, the model assumes that such distortions can, in principle, be addressed through reasoned discourse and reciprocal critique. Communication, in this sense, is inherently relational and ethical, privileging justification and mutual recognition over technical efficiency. This conception of communication stands in sharp contrast to linear and instrumental models, as it situates meaning within social interaction rather than within messages themselves. Communication is thus understood as a cooperative activity through which social reality is reproduced and contested.

4.2 Tensions Introduced by Algorithmic Mediation

In contemporary digital environments, Habermas's communicative framework encounters algorithmically mediated systems that introduce a different form of rationality. While human actors continue to engage in interpretation, dialogue, and meaning negotiation, algorithmic actors operate according to logics of optimization, visibility, and engagement maximization. As a result, communicative rationality becomes increasingly hybridized.



Algorithms intervene in communicative processes by filtering, ranking, and prioritizing messages, thereby shaping what becomes visible, relevant, or marginal within the digital public sphere. This intervention generates new forms of communicative distortion that cannot be reduced to individual misunderstanding or contextual gaps alone. Instead, distortion emerges from systemic and automated selection mechanisms. These transformations are summarized in Table 3, which contrasts classical sources of communicative distortion with their algorithmic counterparts.

Table 3. Communicative distortion in algorithmic contexts

Classical source of distortion	Algorithmic counterpart
Misunderstanding due to human bias or lack of contextual knowledge	Algorithmic prioritization creating selective visibility or filter bubbles
Power imbalances among participants	Platform-driven amplification of certain voices or suppression of others
Semantic ambiguity or disagreement	Algorithmic reordering of messages, trending topics, or automated summarization altering intended meaning
Ethical or normative conflicts	Algorithmic decisions bypassing deliberative reasoning or accountability mechanisms

Source: Author's elaboration

Within this hybrid communicative environment, a tension emerges between communicative rationality and technical rationality. Whereas human actors seek understanding and justification, algorithmic systems prioritize engagement metrics and circulation efficiency. This divergence has profound implications for the public sphere. Consensus and mutual recognition are no longer structurally guaranteed, transparency is weakened by automated decision-making, and meaning production becomes partially detached from human intentionality.

Consequently, communicative outcomes are increasingly co-produced by human reasoning and algorithmic intervention, sometimes resulting in interpretations and visibility patterns that no participant explicitly intended.

4.3 Implications for ethical communication

The interaction between communicative rationality and algorithmic mediation necessitates a critical reassessment of ethical communication in digital contexts. First, classical ethical norms such as truthfulness, sincerity, and fairness must be reconsidered in light of algorithmic filtering and automated prioritization. Ethical responsibility can no longer be attributed exclusively to human speakers when platforms actively shape communicative conditions.

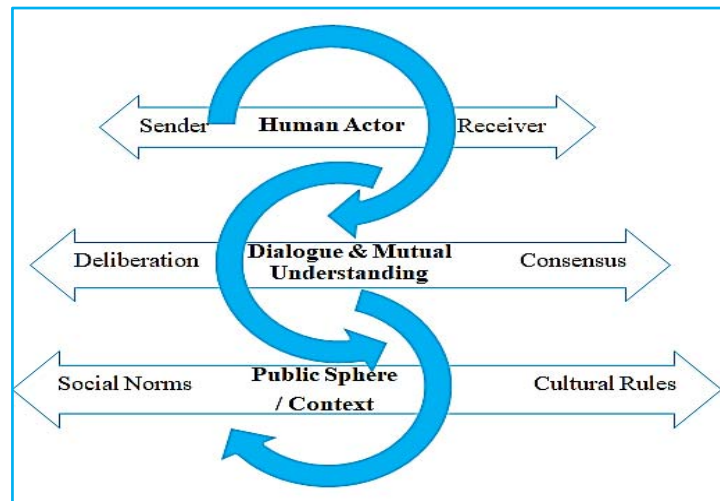
Second, dialogue and deliberation may be structurally constrained by platform logic, which favors speed, emotional resonance, and engagement over reflective argumentation. As a result, rational discourse risks being fragmented or overshadowed by algorithmically amplified signals.

Third, communicative power is redistributed. Algorithms function as non-human co-actors that influence access, visibility and reception, thereby reshaping the balance between participation and exclusion. Communication is no longer fully human-centered but embedded within socio-



technical systems that mediate interaction at scale. In this sense, Habermas's model when applied to algorithmically mediated communication, reveals a transformation rather than an obsolescence. Rational discourse persists, but it is increasingly hybridized. Communicative outcomes emerge from the interplay between human interpretive action and algorithmic selection mechanisms. This transformation parallels the extension of classical transmission models in digital environments, where mediation and distortion become active forces in shaping meaning rather than external obstacles

Figure 5. Communicative rationality in Habermas's model



Source: Author's elaboration

In Habermas's model, communication is centered on human actors who alternate dynamically between sender and receiver roles through feedback and turn-taking. Messages are encoded and decoded using linguistic and symbolic resources, while meaning is negotiated through deliberation. The public sphere provides the normative and cultural framework that enables accountability and mutual recognition. Unlike algorithmically mediated models, communicative power and responsibility reside primarily with human actors, and communication is inherently bidirectional, interpretive, and ethically grounded. For example; On social media, two users may post differing interpretations of a political event. While Habermas's model would predict negotiation through dialogue, algorithmic mediation may selectively amplify one perspective, creating artificial consensus or echo chambers.

5. Castells and the network society

5.1 Structural components of networked communication

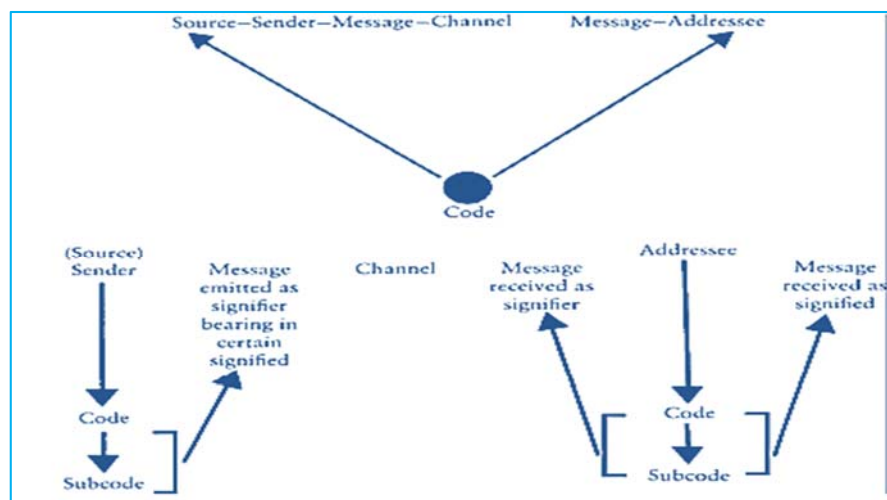
Manuel Castells conceptualizes contemporary society as a *network society*, in which communication is no longer organized around centralized sender-receiver structures but distributed across interconnected networks of human and technological nodes (Castells, 2009). Within this paradigm, communication operates through relational architectures rather than linear chains, and meaning emerges from the circulation of information across multiple points of interaction. A key contribution of Castells is the notion



of mass self-communication, where individuals simultaneously function as producers, distributors and interpreters of content. Digital platforms and accessible software infrastructures enable users to generate, modify and disseminate messages autonomously, often across wireless and global networks. Communication thus becomes participatory, scalable, and partially decoupled from traditional institutional gatekeepers.

Structurally, networked communication is composed of several interrelated elements. Nodes constitute the basic units of the network and include both human actors and algorithmic systems. Communication unfolds through flows of information, understood not as one-way transmissions but as continuous circulations of messages, meanings, and symbolic resources. Power within the network does not derive primarily from content ownership but from the capacity to control, redirect, or modulate these flows. Connectivity and interdependence among nodes generate feedback loops that produce emergent patterns of visibility, influence, and coordination. Finally, the public sphere itself becomes distributed, as message production, interpretation, and reception occur across spatially dispersed and relationally organized contexts. In this model, communication is inherently multidirectional and adaptive. Meaning is co-constructed through interactions among networked actors, reflecting both human intentionality and the structuring influence of digital platforms and algorithmic architectures.

Figure 6. Manuel Castells model communication



Source: (Nechita, 2012, 41)

5.2 Algorithmic mediation and the transformation of the public sphere

Within digital networks, the emergence of algorithmic actors fundamentally reshapes communicative dynamics. Algorithms no longer function as neutral technical intermediaries but as active agents that organize attention, visibility, and relevance. This transformation can be illustrated through the structural shift summarized in Table 4, which contrasts classical linear communication with networked algorithmic mediation.

Table 4. From linear communication to networked algorithmic mediation: structural

Classical/Linear Component	Networked Algorithmic Counterpart
Single human sender	Human sender and multiple algorithmic mediators



Linear channel	Multi-channel network, shaped by platform architecture
Passive receiver	Algorithmically profiled and targeted audience
Noise as interference	Technical, symbolic, and algorithmic modulation of flows

Source: Author's elaboration

In networked environments, algorithms filter, prioritize, amplify, or suppress messages, thereby actively shaping communicative outcomes. Rather than merely transmitting content, they participate in meaning production by determining which messages circulate widely and which remain marginal. Noise, in this context, is no longer external interference but an integral component of communication, embedded within algorithmic modulation processes.

As a consequence, communicative authority and social influence are distributed across the network. Power does not reside exclusively in individual speakers but emerges from the interaction between human agency and algorithmic governance. The public sphere is thus reconfigured into a dynamic and hybrid space where meaning-making is emergent, multi-nodal, and contingent on platform logics. Social influence increasingly operates through algorithmic amplification rather than direct persuasion alone.

This transformation challenges the explanatory capacity of linear transmission models such as Shannon and Weaver's, as well as purely dialogical frameworks like Habermas's. While these models remain analytically valuable, they are insufficient to fully capture the relational, distributed, and networked nature of contemporary digital communication.

5.3 Implications for understanding digital communication

Castells's network society framework underscores several critical implications for the analysis of digital communication. First, communication must be understood as relational and networked rather than centralized or hierarchical. Meaning and influence arise from interactions across interconnected nodes rather than from isolated communicative acts.

Second, power and authority are exercised primarily through control over information flows, visibility, and connectivity, not merely through content production. Those actors-human or algorithmic-who shape circulation patterns exert disproportionate influence over collective attention and interpretation.

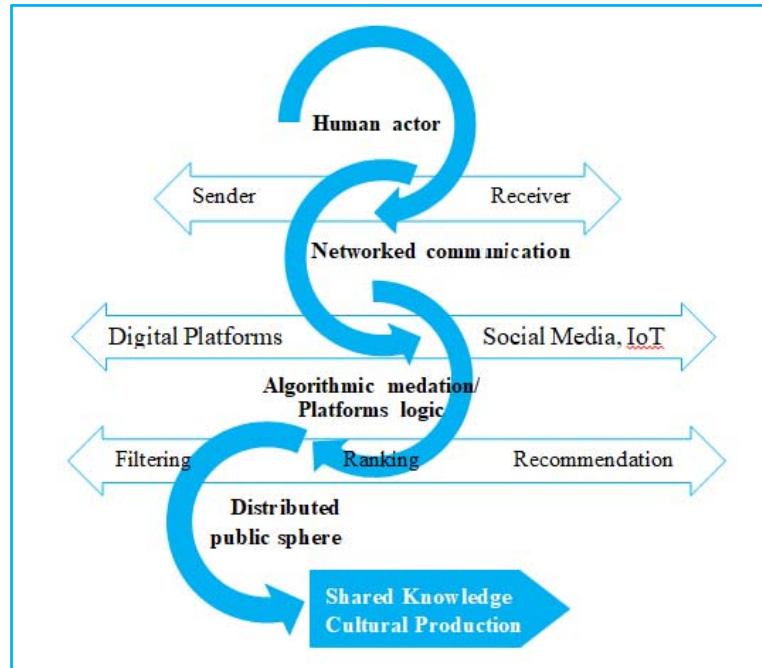
Third, algorithmic systems function as non-human nodes within the network, actively reshaping participation, attention, and meaning. In this respect, Castells's analysis reinforces the hybridization of communicative rationality identified by Habermas, extending it into a fully networked and technologically mediated context.

Finally, analytical approaches to digital communication must move beyond linear or exclusively dialogical frameworks. Adequate analysis requires attention to multi-directional flows, emergent feedback loops, and distributed agency, acknowledging that communication is co-produced by human actors and algorithmic infrastructures. In sum, Castells's perspective complements and extends the classical models of communication by situating algorithmic mediation within a complex, distributed, and dynamic communicative ecosystem. Within this ecosystem, meaning,



influence, and social organization are collectively produced through the interaction of human intentions and non-human technological agents.

Figure 7. Network society in Castells's model



Source: Author's elaboration

In Castells's network society, communication unfolds through interconnected digital networks in which human actors interact within platform-mediated environments. Power and influence are distributed across network architectures and algorithmic actors that filter, prioritize, and amplify messages. The public sphere becomes networked, dynamic, and collectively produced, reflecting a hybrid communicative ecosystem in which meaning-making is no longer exclusively human-centered but co-constructed by human and non-human agents.

6. Results and Discussion

The analysis demonstrates a profound transformation in communicative agency, reflecting a shift from centralized, human-centered models to distributed, hybrid configurations. In classical linear frameworks, such as Shannon and Weaver's model, agency resides primarily in the human sender, whose intentionality governs message production and transmission. Contemporary digital environments, however, co-construct agency through interactions between human actors and algorithmic systems, which intervene at multiple stages of communication.

Example: When a journalist publishes content on a social media platform, algorithms determine its visibility, ranking and circulation based on engagement metrics and user profiling. The effective sender thus becomes a composite actor, where human intention is inseparable from algorithmic mediation. This finding supports Castells's conceptualization of networked



communication and challenges the explanatory power of linear sender–receiver models in contemporary digital contexts.

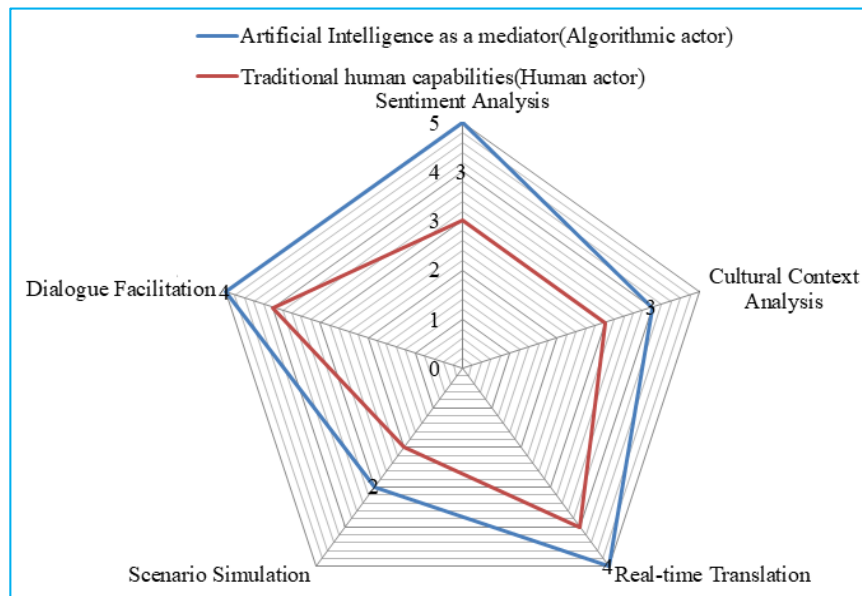
A key finding concerns the evolving conceptualization of noise. In Shannon–Weaver models, noise is an external disturbance that threatens accurate transmission. In algorithmically mediated systems, noise is internalized and operationalized; Example: Recommendation algorithms often amplify emotionally charged or sensational content to maximize engagement. This creates semantic and psychological distortions that are structurally embedded rather than incidental. Noise thus functions as an active mechanism shaping perception, attention, and interpretation, aligning with critical media theories that emphasize the political and ideological dimensions of algorithmic mediation.

Applying Habermas’s communicative action framework reveals tensions between communicative rationality and algorithmic rationality. While Habermas emphasizes dialogue oriented toward mutual understanding and consensus, platform logic prioritizes efficiency, engagement, and visibility; Example: Online public debates may appear inclusive, yet algorithmic filtering privileges polarized or simplified viewpoints over nuanced argumentation. Conditions necessary for rational deliberation—equal participation, reflexivity, and reasoned justification—are partially undermined. This does not invalidate Habermas’s model but highlights its limited explanatory power when communicative spaces are governed by non-human systems. The public sphere thus becomes fragmented and unevenly structured, mediated as much by platform logics as by rational discourse. Castells’s network society framework offers a more adequate account of contemporary dynamics. Power is exercised through control over information flows, not solely through content ownership. Communication is multi-directional, emergent, and relational, shaped by interactions among human and algorithmic nodes; Example: Viral phenomena often emerge from converging user activity, algorithmic amplification, and network connectivity, rather than deliberate persuasion. Influence is relational, supporting the view that meaning and authority are continuously negotiated across networks, rather than transmitted linearly.

The comparative radar analysis (Fig. 8) further demonstrates that human and algorithmic actors have complementary roles. Algorithms excel in large-scale mediation—such as sentiment analysis, real-time translation, and content distribution—while humans remain indispensable for ethical judgment, cultural interpretation, and contextual sensitivity; Example: Automated translation tools enable rapid cross-cultural communication but cannot fully capture irony, symbolism, or culturally embedded meanings. Human interpretive intervention remains necessary for communicative appropriateness and ethical accountability, illustrating the hybrid and co-constructed nature of contemporary communication.



Fig.8.
chart of
intelligence
human



Comparative radar
artificial
and traditional

Source: The researcher

The results confirm that contemporary communication cannot be adequately explained by classical linear or purely dialogical models alone. Communication has evolved into a hybrid, networked process in which meaning, power, and responsibility are distributed across human and algorithmic actors. The dissolution of clear sender–receiver boundaries, the transformation of noise into an active structuring force, and the hybridization of rationality collectively redefine the conditions of the public sphere.

This synthesis highlights the necessity of integrated theoretical approaches capable of accounting for distributed agency, algorithmic mediation, and socio-technical complexity. Understanding communication today requires moving beyond transmission and dialogue toward a relational and networked perspective that recognizes the co-evolution of human intentionality and algorithmic governance.

7. CONCLUSION

This study traced the conceptual evolution of communication models and examined how artificial intelligence reshapes communicative agency within digital networks. From linear transmission (Shannon & Weaver) through dialogical interaction (Habermas) to networked, algorithmically mediated systems, communication has evolved into a hybrid socio-technical ecosystem. Key insights include:

- Humans retain ethical, interpretive, and deliberative capacities, while algorithms govern attention, visibility, and circulation.
- Noise is not merely a disturbance but an algorithmically shaped force influencing perception and collective understanding.
- Human interpretive capacities and AI computational strengths function synergistically, producing richer, context-sensitive communication.



Overall, contemporary communication operates within a hybrid ecosystem, where meaning is co-produced, authority is redistributed, and responsibility is shared. These dynamics have significant implications for the public sphere, necessitating renewed ethical frameworks, transparency, and accountability mechanisms capable of addressing distributed agency. Understanding communication today requires moving beyond classical models toward an integrated perspective recognizing the co-evolution of human intentionality and algorithmic mediation in shaping social reality.

This study recommends the adoption of multidisciplinary approaches that integrate communication studies, digital sociology, computer science, and ethical philosophy to achieve a deeper and more comprehensive understanding of contemporary communication in the algorithmic age. Such approaches can facilitate critical analyses of how digital mediation shapes meaning-making, redistributes authority, and influences responsibility within the public sphere.

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